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Master of Science in Management Engineering



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*Mapping of the omnichannel state of the art in the Italian Retail
panorama: the Omnicanality Index*

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ABSTRACT (VERSIONE ITALIANA)

Negli ultimi anni, la nostra società ha assistito ad un boom della digitalizzazione e, contemporaneamente, ad una notevole accelerazione dell'eCommerce. Come la maggior parte delle industrie, il Retail non può ignorare gli impatti di tali cambiamenti. Il negozio fisico non rappresenta più soltanto un luogo per fare acquisti ma si arricchisce di nuovi aspetti tecnologici in grado di offrire ai consumatori un'esperienza ibrida e coinvolgente. È qui, infatti, che diventa centrale il presidio di un numero crescente di *touchpoints online*, soprattutto da parte di aziende nate come *offline-only*. La convergenza delle due tipologie di canali agendo congiuntamente su aree di front-end – a contatto con il cliente – e di back-end – in quanto a trasformazioni interne –, è ciò che permette ai retailers di arricchire l'esperienza d'acquisto di consumatori ormai completamente omnicanale.

Il paradigma omnicanale è infatti valutato un fattore fondamentale per lo sviluppo strategico aziendale da oltre il 70% di medio-grandi retailer e risulta essere una tendenza costantemente in crescita, la cui espansione è stata ulteriormente favorita nell'ultimo biennio dall'emergenza Covid-19.

Il lavoro di tesi inizia quindi con un'approfondita analisi della letteratura scientifica e non scientifica per comprendere quali sono, ad oggi, le principali variabili che influenzano la gestione sinergica dei canali di vendita. A ciò segue una componente di analisi empirica, volta a mappare lo stato di avanzamento dell'omnicanalità in Italia. Tramite questi step preliminari è stato possibile identificare come principale gap di ricerca la mancanza di un indicatore in grado di misurare in maniera quantitativa ed olistica il livello di omnicanalità raggiunto dalle aziende Retail. Di conseguenza, lo studio ha portato alla creazione di un Omnicanality Index che, tramite 5 macro-aree di interesse, consente ai retailer di mappare autonomamente il proprio livello di maturità, di confrontarlo con la media nazionale e con i suoi diretti concorrenti. In conclusione, l'applicazione di tale indice su un campione concreto di aziende ha consentito una mappatura dello stato dell'Omnicanalità sul panorama italiano.

Parole chiave: Omnicanalità, Indice, Retail, eCommerce, panorama italiano

ABSTRACT (ENGLISH VERSION)

In recent years, our society has witnessed a boom in digitalization and, concurrently, a significant acceleration of the eCommerce. Like most industries, Retail can't ignore the impacts of such changes. The physical store is no longer just a place to shop but is enriched with new technological elements that can offer customers a hybrid and engaging experience. It is in this perspective, indeed, that the control of an increasing number of *online touchpoints* becomes central, especially for companies born as *offline-only*. The convergence of the two types of channels by acting jointly on front-end areas - in contact with the customer - and back-end factors - in terms of internal transformations - is what allows retailers to enrich the shopping experience of consumers who are now completely omnichannel.

The omnichannel paradigm is indeed considered a fundamental factor for companies' strategic development by over 70% of medium-large retailers and it turns out to be a constantly growing trend, whose expansion has been further favoured in the last two years by Covid-19 emergency.

The thesis work begins with an in-depth analysis of scientific and non-scientific literature to understand which are, to date, the main variables influencing the synergistic management of sales channels. This is followed by a component of empirical analysis, aimed at mapping the progress of the omnicanality in Italy. Through these preliminary steps it was possible to identify, as the main research gap, the lack of an indicator able to measure in a quantitative and holistic manner the omnichannel level achieved by Retail companies. Consequently, the study has led to the creation of an Omnicanality Index that through 5 macro-areas of interest allows retailers to independently map their level of maturity, to compare it with the national average and with its direct competitors. In conclusion, the application of this index on a real sample of companies has allowed a mapping of the omnichannel status on the Italian panorama.

Keywords: Omnichannel, Index, Retail, eCommerce, Italian scenario

1. EXECUTIVE SUMMARY

1.1 Research introduction

Retailing, intended as the business activity of selling products or services to end customers, has an ancient origin and has always been shaped by constant adaptation. In particular, the advent of the Internet and the proliferation of gradually more sophisticated technologies have dramatically transformed consumer needs and habits over the last few decades.

Increasingly "connected" and "digital" customers no longer require to interact with companies through a single channel, but they want to rely upon different touchpoints simultaneously, with the expectation of finding the same "customer experience" in each of them.

This evolution implies that stores are no longer the unique point of contact with customers and that the traditional single channel sales form has become obsolete. The term multichannel has also evolved to the level that the omnichannel word is used more and more frequently, thus emphasizing that managing different channels in parallel is no longer sufficient: on the opposite, touchpoints need to be designed and coordinated to ensure full integration between them.

Omnicanality, a strategy that therefore implies a synergic management of all touchpoints whether physical or digital, has undergone a significant acceleration with the Covid-19 pandemic. Changes in buyers' behaviour, the need to reach socially distant consumers around the world and the increased use of the eCommerce channels also by new users, have led to a review of the balance between the different sales channels.

It is therefore of paramount importance to no longer consider online and offline channels as a threat to each other, but to think about them as indistinguishable and indispensable components of the same strategy to integrate properly in an omnichannel perspective.

Consequently, the ever-growing retailers' interest towards the opportunity to become competitive in complementary channels to the physical ones, as well as the possibilities to modernize processes and practices under an optic of omnichannel business innovation, continues to foster the curiosity of academics and researchers which – even more after Covid-19 pandemic – recognize the omnichannel strategy as the future of Retail within a renewed environment.

Whitin this evolving external context, companies are required to adapt themselves. Indeed, to satisfy increasingly connected clients, which require a fluid and hybrid shopping experience among the available touchpoints, retailers must introduce new omnichannel models and digitize the point of sale while acting, at the same time, on all back-end processes and organizational aspects.

From a front-end viewpoint, through the emergence of new formats, the introduction of in-store technologies and the enlargement of activities in the hands of sales staff, the physical store becomes even more a fundamental place to engage and interact with customers. The experience and services provided represent indeed the critical differentials which allow retailers to successfully funnel brand's messages, to better manage the relationship with customers and, ultimately, to prevail over competitors.

To implement this, it is therefore inevitable for retailers to review the internal processes in an integrated and univocal perspective, starting from supply chain activities, shifting to the introduction of solutions both as support and as a means of change, until the development of new organizational skills to manage this metamorphosis.

Finally, the implementation of a shared omnichannel strategy is only possible by strictly collaborating with many of the actors involved end-to-end in the value chain, such as service providers, suppliers, customers and online platforms.

As this subject is particularly wide and constantly evolving, it is essential to establish guidelines on which to focus the attention and to develop metrics that enable to understand where retailers are already particularly advanced and where, instead, there is further room for improvement.

1.2 Objective and Research questions

The main objective of the research work has been to conduct an in-depth evaluation of all the aspects involved in an omnichannel Retail transformation. The literature review, at a scientific and non-scientific level, has indeed been carried out considering the *strategic variables*, the *implementation* and the *implications* connected to the topic. This phase has allowed the identification of the research gap and has consequently laid the foundations for the empirical work and subsequent analysis.

What clearly emerged was the absence of a holistic and quantitative indicator able to measure the omnichannel status. Therefore, this thesis work aimed at developing the Omnicanlity Index with the purpose to quantify the

maturity reached by every single Retail company. Finally, the indicator has been adopted to map the Italian scenario and provide a deep understanding of sectors' development levels as well as their current differences.

To conduct the work in a structured way, the following research questions have been formulated:

1. What are the principal strategic, technological and organizational factors as well as the front-end and back-end activities which mainly impact the implementation of a successful omnichannel strategy?
2. Which are the main sales channels manned and omnichannel models adopted by Italian retailers?
3. Is it possible to assess the omnichannel maturity level reached by retailers?
4. How can retailers' Omnicanality levels be measured comprehensively and quantitatively to let them perceive where further room for improvement is and how is it possible to fill it?
5. Quantitatively, how the situation of omnichannel in the Italian Retail market is? Which are the most advanced product sectors? Which are the least developed areas?

1.3 Research methodology

The process followed for the thesis work is illustrated below in the Figure 1.1:

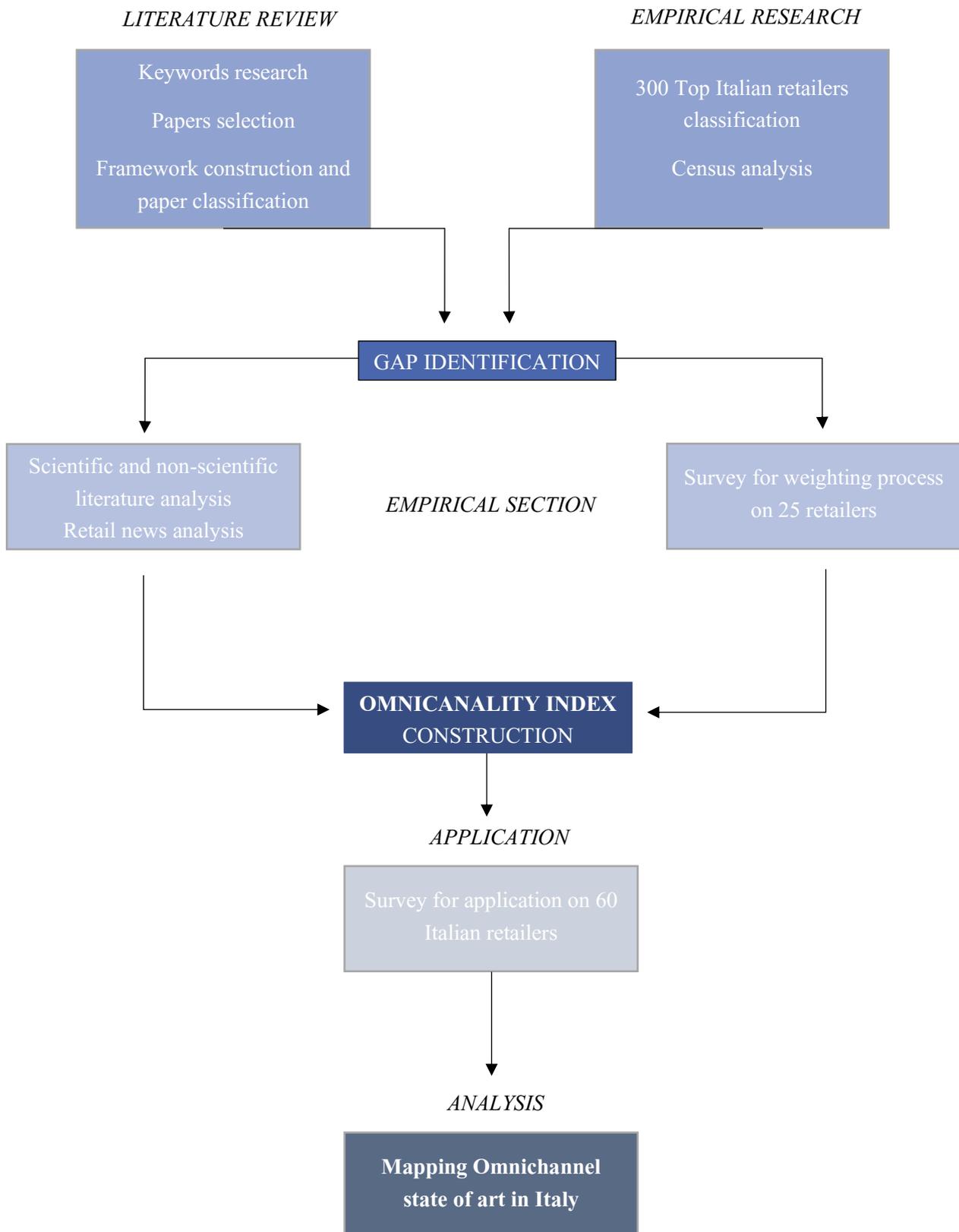


Figure 1.1 Methodological process

The work began with a detailed *scientific and non-scientific literature review* focused on three Research areas: the *strategic variables* to consider when carrying out an omnichannel strategy, the *implementation* steps and, ultimately, the *implications*, meaning the activities and changes that a retailer must undertake to pursue it.

The first step in this phase has been the selection of a heterogeneous set of keywords from which to proceed with the papers' examination. The main ones were: omnichannel Retail, data strategy, omnichannel operations, store digitalization, Covid-19 in Retail, omnichannel organization, omnichannel barriers.

Regarding scientific literature, the main search engines used were the Academic Library of Politecnico di Milano and Google Scholar; non-scientific literature articles have instead been examined starting from the Big 4 websites, but also spanning on sites of major consulting companies.

Some criteria have been established for papers selection: publishing date needed to be within last five years; at least one article had to refer to Covid-19 pandemic impacts on Retail; to highlight the interconnection characterizing omnichannel aspects, each paper chosen had to cover at least two of the three Research macro-areas.

Once the papers were selected – 54 scientific and 27 non-scientific – they were inserted into two different spreadsheets where an analysis framework, equal for both articles typologies, was created.

The framework allowed to analyze each text under four viewpoints:

- the first part considered the "informational" data of the paper, so the authors, the year of publication, the source of publication and the sector of reference;
- the second section examined the methodology used, sub-divided into qualitative and quantitative, with the main approaches used in the papers (i.e. statistical analysis and survey for the quantitative methodology, literature review and case study for the qualitative one);
- the third part treated the three research dimensions: strategic variables, implementation and implications; each dimension is divided into further sub-sections which in turn are expanded on many columns.
- finally, the last section included the omnichannel barriers, divided into obstacles encountered by customers and difficulties experienced by retailers.

The second step of the methodology, referred to as *empirical research*, involved the overhaul of the 300 Italian Top retailers Census, conducted in close collaboration with *Osservatorio Innovazione Digitale nel Retail (School of Management – Politecnico di Milano)* and *Osservatorio eCommerce B2c (School of Management – Politecnico di Milano)*. The work performed involved an update of the Census data and the addition of some new sections. For each of the top 300 Italian retailers were analyzed, through an Excel spreadsheet, the *desktop website, mobile optimized website and mobile application* channels.

An initial section to identify the company and the sector in which it operates has been included; then, the work has been developed into 44 columns divided into four sections, useful to provide a snapshot of the omnichannel evolution level among retailers:

- the first focused on the mobile application and was aimed at analyzing whether each retailer use it or not and, if yes, if it is adopted for transactional or relational purposes;
- the second section focused on the mobile-friendly website and on the features that it offers;
- the third section examined the desktop website, distinguishing it between eCommerce site – therefore for transactional purposes – or Institutional site – so used for relational purposes. In this part, in addition to the features included, are investigated also the omnichannel models adopted by companies;
- the last section provided a mapping of indirectly managed digital channels, such as marketplace, eTailers, flash sales websites; this area has been added in the last year following their increased adoption.

Following the empirical research process, a first analysis on the Census was conducted to obtain an overall picture of the omnicanality maturity of retailers operating in Italy. Thanks to both this examination and the literature review, the main gap has been identified: the lack of an *Omnicanality Index*. Its construction path will be disclosed in the following part of the section.

In first place, for the construction of the Index insights extracted from the analysis of scientific and non-scientific literature were used to progressively fill in the single components to include in the indicator. These have been combined with additional evidence mainly coming from about 400 news of the current and past year related to the Retail world and traced in the repository updated in collaboration with *Osservatorio Innovazione Digitale nel Retail (School Of Management – Politecnico di Milano)*.

On the other hand, the creation of a *survey on retailers* has enabled the processing of weights and numerical scores to be associated to each category and each section of the Index. Therefore, thanks to the answers gathered from 25 companies operating in 6 sectors, it has been possible to properly investigate the relevance of the factors considered within an omnichannel strategy and, so, to understand the comparative significance of the Index's sub-areas.

The questionnaire was indeed developed in eight questions – to cover all sections included in the Index – each one requiring to rank the answers presented according to their relevance and/or utility. This allowed to obtain objective assessments by retailers, considering the reciprocal and not absolute relevance of the factors asked.

Once survey's results were collected, the rankings have been converted into numerical values, averages by sector have been calculated and, after comparing to 1 the resulting values, these have been used to assign weights objectively to the different categories and tables within the Index.

Once the overall Index was obtained, the subsequent step concerned the application phase. In this regard, as a starting point to investigate how organizations address the omnichannel strategy, it has been used a *questionnaire on Italian retailers* conducted by *Osservatorio Innovazione Digitale nel Retail (School of Management – Politecnico di Milano)*. The survey entitled “*Retail between online and offline: omnichannel integration*” aimed at deepening, from multiple viewpoints, the level of omnichannel development of Italian retailers and to investigate how they manage the main drivers.

The 60 responses gathered have been elaborated to fill-in the different categories' components and sections of the Index, which have been integrated with additional information obtained from recent news to complete some missing areas.

Once obtained the Index for those companies, through a set of Excel sheets different analysis have been performed in order to assess from a quantitative perspective the omnichannel maturity in the Italian scenario

1.4 Research findings

The following paragraphs contain answers to the five research questions listed above. In particular, the main findings of the thesis work are described in detail according to the methodological sequence presented in the previous section.

1. *What are the principal strategic, technological and organizational factors as well as the front-end and back-end activities which mainly impact the implementation of a successful omnichannel strategy?*

The literature analysis carried out and the creation of a detailed framework has allowed to deeply comprehend that the omnichannel paradigm is a strict combination of a high number of variables. The Figure 1.2 below shows the main areas of research within which all the elements of interest have then been classified.

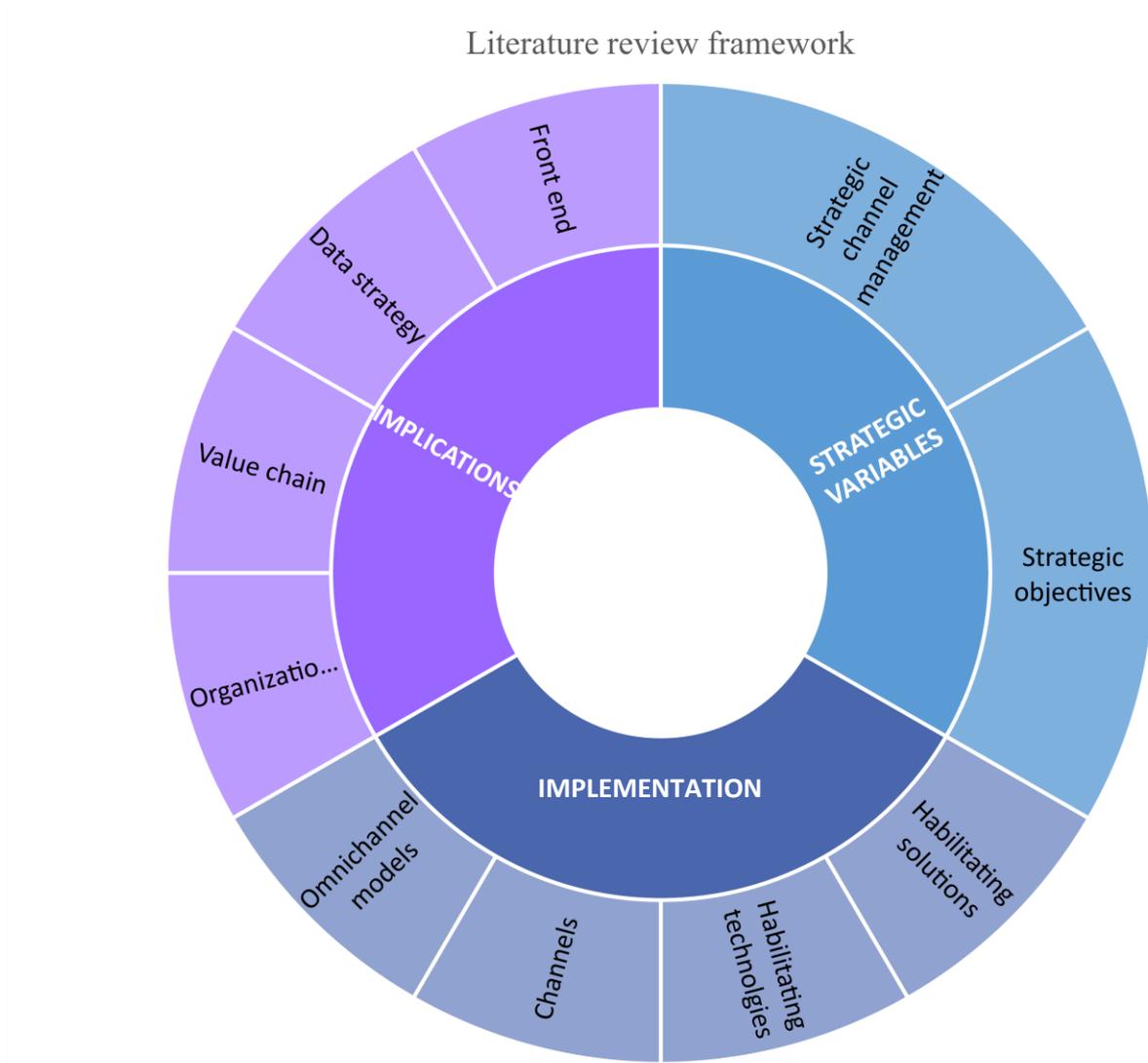


Figure 1.2 Literature review framework

First of all, when implementing an omnichannel strategy retailers need to take into account a high number of strategic variables including assortment, pricing, promotional policies, loyalty programs, service level, resource

management etc. Particularly, regarding their management, what emerges from the scientific literature, is the need to ensure a certain level of alignment between these variables.

Considering instead the front-end activities, these include the introduction or enhancement of new sales channels that complement the traditional physical store as well as the addition of new omnichannel models such as click&collect, online selling in store, in-store return etc. These not only offer an added value to customers but also allow to bring benefits in terms of profitability to the company; for instance, customers going to the store to pick up an order placed online, generally tend to add other products to their cart.

Even the store should be renewed and many technological solutions with different purposes can be installed. In the first place, these enable customers to live a more enriched in-store experience in terms of information, but also more creative and personalized; secondly, technologies allow customers and staff to place online orders for products that are not available in the store, thus expanding point of sales' assortment virtually.

Moving on to the activities more related to the back end, the in-depth knowledge of clients is fundamental: it is therefore essential for retailers to collect an important amount of data, integrate them across channels and, finally, use them to customize promotional initiatives addressed to customers.

Finally, as for the management of the supply chain, a key aspect can be noticed in the necessity to involve in the omnichannel strategy an increasing number of actors; this requires retailers to have IT solutions able to share real-time information on orders and products end-to-end along the supply chain. Moreover, even if the situation varies according to the single cases, operations-related activities (i.e., order processing, inventory management, picking, shipping and last mile delivery, returns management and human resources sharing) should progressively be managed in a more integrated manner. To support all the back-end activities, be it relative to the management of the data or to the supply chain, the introduction of appropriate technological solutions (ERP, CRM, etc) able to support such integrations is fundamental.

Finally, the implications on the organization at the micro-level mainly encompass the creation of new roles and functions within a company and the dissemination of new skills; at macro level instead, the introduction of coordination mechanisms to overcome the management to silos results of primary importance; finally, the adoption of special incentive systems so to avoid internal conflicts between different channels is key.

To conclude, since the beginning, it has emerged the difficulty tied to the measurement and objective appraisal of such a complex strategy; this sat the basis for the identification of the gap that has been further confirmed by the following empirical analysis.

2. Which are the main sales channels manned and omnichannel models adopted by Italian retailers?

The mapping the Italian Top 300 retailers has allowed to carry out detailed analyses to answer this question.

Specifically, considering the desktop website, 86.4% (+4% compared to 2020) of retailers operating in Italy has an eCommerce website (for transactional purposes), while the remaining 13.7% relies on institutional websites (for relational purposes). As concerns the mobile-friendly option, 98.6% of retailers adjusted the website to make it easily accessible also from mobile: 85.9% (+2% compared to 2020) of them adopts it for transactional purposes while 14.1% adopts it just with informational intent. Finally, 44% (+1% compared to 2020) of retailers also has a mobile app: as before, the majority (56%) includes eCommerce functionalities, while the 44% uses the mobile app only for relational purposes.

Some trends related to the most used indirectly managed channels have then been extracted: 21% of the examined retailers offer their products through marketplaces, 43% through flash sales websites and finally 38% rely on eTailer websites.

To conclude, it has been analyzed which are the most popular omnichannel models on the Italian panorama. Regardless of the sector, click&collect is particularly widespread: indeed, 49% of retailers offer this service (+3% compared to 2020). Additionally, 32% of retailers, especially the ones operating in the fashion industry, offer customers the possibility to return their orders in-store regardless of the channel used for the purchase (+3% compared to 2020). Finally, the less common models (6%) concern the possibility to place online orders from the store, both independently or with sales staff assistance (sales force automation).

3. Is it possible to assess the omnichannel maturity level reached by retailers?

From the literature review conducted, it emerged how the majority of existing KPIs fail to measure the performances of an omnichannel strategy. Most of the times, customer experience is used as a proxy to assess omnichannel effectiveness, but not its advancement level. Additionally, it can't be considered an objective

measurement since it is linked to the perception of customers and not to the actual efforts of the company. Therefore, what is missing within these KPIs is the inclusion of information concerning back-end activities performance – such as supply chain management and information systems – as well as aspects regarding the integrated data strategy, the organizational efforts to implement an omnichannel strategy and the technological changes that it entails.

Additionally, the empirical analysis has allowed to obtain interesting insights regarding the state of the art of omnichannel advancement in Italy, but it has also confirmed the gap noticed in the literature analysis phase. The Census permits indeed to obtain an assessment of the adoption of multiple sales channels and the diffusion of omnichannel models. On the opposite, even in this case, back-end activities – including operations – as well as the organizational repercussions are not mapped, although from the literature these turn out to be key aspects too. Therefore, the Census provides various information on retailers, but it does not allow to obtain a unique assessment about their omnichannel maturity: indeed, it provides only a partial overview of front-end aspects (i.e., technological solutions in store are not included in the mapping).

These two steps, therefore, permitted to identify the gap to fulfill with the thesis work: the lack of an exhaustive and quantitative indicator able to measure the omnichannel level of a Retail company.

Its development will take cue from the matters of interest gathered through scientific sources disclosed in the Figure 1.2 above presented and empirical research.

This led to reason on the fourth question:

4. How can retailers' Omnicanality levels be measured comprehensively and quantitatively to let them perceive where further room for improvement is and how is it possible to fill it?

Therefore, after a first part which led to the identification of the gap to be filled, the second section of the work focused on the development of the indicator just introduced.

More precisely, the indicator built includes 5 sections reworked from the 3 previously showed in the literature framework figure, so as to combine all aspects: *strategy and channels management, data strategy, omnichannel models and operations, organization and point of sales*. Each of them is in turn divided into further categories

aimed at deepening and investigating all the aspects involved in each area. The Omnicanality Index structure is presented in the Figure 1.3.



Figure 1.3 Index' section and categories

Starting from the part related to the *strategy and channels management*, this consists of four categories:

- the first steps to analyze what types of *physical stores* are manned by a Retail company. This area acts as a filter to ensure that all companies potentially using the index belong to the Retail sector and, therefore, have at least one physical store;

- the second category investigates the control of *directly managed digital channels*. These include, on the one hand, the desktop website, on the other, the mobile website and mobile application. For each of them, all the features emerged from the literature and deemed relevant for the implementation of an Omnichannel strategy have been listed. These have been divided into eCommerce functionalities, allowing customers to make purchases through such channels, and into relational features, which do not lead to the purchase, but remain still fundamental under an omnichannel optic and for the customer experience (such as store locator, live chat, etc.);
- the third category investigates the control of *indirectly managed digital channels and alternative selling modalities*. These, indeed, include marketplaces, eTailer website, flash sales sites and couponing websites (intended as third parties' platforms where retailers can sell their products, also for limited periods or at discounted prices, keeping or not the ownership of merchandise) as well as new sales modes such as social commerce, instant messaging systems or live stream shopping platforms. In turn, reasoning in parallel with the above, these channels have been analyzed making a distinction based on the different purposes that push retailers to adopt them: some companies can choose to use them for purely relational and informative objectives, while others also for transactional purposes and, therefore, for sales;
- the last category concerns the *management of online and offline channels*. To offer customers a seamless experience, it is necessary to eliminate all discontinuities between the different sales channels; therefore, the main strategic drivers – such as assortment, pricing, promotional policies, and services – have been analyzed and assessed with a view to complete alignment, partial alignment or non-alignment.

In the table 1.1 below, the weights associated with each category, coming from survey's data processing, are reported. It is evident that the control of direct online channels and their management in an aligned manner with physical stores are predominant compared to the control of indirect digital channels. Going into more detail, 60% and 68% of respondents believe that the eCommerce website (transactional) and the usage of mobile application and mobile optimized website are, respectively, more relevant than the institutional website (relational) and the presence on desktop sites.

		DIRECT CHANNELS	INDIRECT CHANNELS	INTEGRATED MANAGEMENT
	Clothing	0.438	0.229	0.333
	Food	0.364	0.273	0.364
	Furniture and home improvement	0.25	0.333	0.417
	Cosmetics	0.39	0.26	0.36
	Electronics	0.39	0.26	0.36
	Other	0.478	0.174	0.348
	High	Medium	Low	Sum of weights by row = 1

Table 1.1 Weights of categories in the strategy and channel management section (sample 25 retailers, values range 0-1)

Continuing with the section related to the *data strategy*, this is composed of four categories.

The first and second categories refer to the *identification of customers in the different sales channels*. These areas investigate which data is *collected* by retailers to identify and recognize customers and on which channels. In addition, the way in which this data is *managed* is evaluated: indeed, to create a single view of each customer, it is necessary that data collected on the various channels are integrated.

The third and fourth categories, on the other hand, focus on the collection and use of data not with a view to identify customers, but with a view of *profiling and activating customized marketing activities*. At first, also in this case, an evaluation of which data are *collected* and on which channels is performed. In this case, not only data related to customers' identity are included, but also information regarding their purchasing behavior and preferences. Then, as in the previous section, it is evaluated how these data are *processed and used*. Here an increasing score is attributed to the different uses, starting from the simple collection, shifting to the aggregation of data to form clusters of customers and, then, to their integration, up to the deep processing of such data to launch tailored marketing initiatives for specific customers.

Below, in the table 1.2, the weights obtained from the survey and assigned to each category are reported. The 60% of retailers who participated in the study considers the collection of data to identify customers and their integration as a priority over information collection and use for marketing purposes.

	DATA FOR IDENTIFICATION	DATA INTEGRATION DEGREE	DATA FOR PROFILING PURPOSES	DATA USAGE LEVEL
Clothing	0.3	0.3	0.2	0.2
Food	0.292	0.27	0.225	0.213
Furniture and home improvement	0.25	0.25	0.225	0.275

Cosmetics		0.29	0.27	0.23	0.22
Electronics		0.29	0.27	0.23	0.22
Other		0.275	0.225	0.275	0.225
High	Medium-high	Medium-low	Low	Sum of weights by row = 1	

Table 12 Weights of categories in the data strategy section (sample 25 retailers, values range 0-1)

The third section of the index focuses on *omnichannel models and operations*.

The first category evaluates which and how many *omnichannel models* a company adopts to allow consumers interact with different touchpoints during the shopping journey, shifting easily from one to another.

The second and third categories instead focus on back-end aspects related to operations and supply chain management which support the adoption of such models. At first, it is assessed how the *operations-related activities* are handled, considering the management of the stock, of the orders, of the evasion structures, of the fulfillment phase and, finally, the aspects connected to the reverse logistics, so the management of the returns. In an omnichannel perspective, to allow a more fluid management of flows, all these factors should be handled in an integrated manner between the different online and offline channels.

Then, the adoption of *systems and software* which permit to facilitate the management of back-end processes with a view to greater efficiency is evaluated.

For the management of operations, the integrated option turns out to be optimal and therefore will assume greater score. For what regards models and software weighting process, instead, all the options included in each of the two areas will take equal score: the final evaluation will be awarded considering, respectively, the totality of the models or software used.

Focusing on the table 1.3 below, for most retail sectors in first place there are the omnichannel models, immediately followed by the integrated management of operations and the software usage.

	OMNICHANNEL MODELS	OPERATIONS MANAGEMENT	SOFTWARE TO SUPPORT OPERATIONS
Clothing	0.375	0.396	0.229
Food	0.389	0.333	0.278
Furniture and home improvement	0.417	0.292	0.292
Cosmetics	0.393	0.347	0.260
Electronics	0.393	0.347	0.260
Other	0.417	0.333	0.250

High	Medium	Low	Sum of weights by row = 1
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Table 1.3 Weights of categories in the operations section (sample 25 retailers, values range 0-1)

The fourth section of the index focuses on *organizational aspects*.

To set up and offer a fluid omnichannel experience to final customers, Retail companies must implement changes at the organizational level too. In particular, the Index first evaluates the number of *functions involved* in the omnichannel transition process; secondly, the *ways in which these functions cooperate* are investigated.

Specifically, a higher score is assigned if an ad hoc BU completely dedicated to omnichannel exists within the organization, or if an ad hoc team led by a manager with resources dedicated exclusively to the integration of the different sales channels is created. Minor weight assumes, instead, the situation in which channels are managed separately with, eventually, only some basics integration mechanisms.

In the table 1.4 below it is reported how retailers evaluate the two categories.

	FUNCTIONS INVOLVMENT	FUNCTIONS MANAGEMENT
Clothing	0,458	0,542
Food	0,63	0,37
Furniture and home improvement	0,417	0,583
Cosmetics	0,547	0,453
Electronics	0,547	0,453
Other	0,667	0,333
High	Low	Sum of weights by row = 1

Table 1.4 Weights of categories in the organization section (sample 25 retailers, values range 0-1)

The adoption of an omnichannel strategy also has repercussions on the physical *point of sale*, which is treated in the conclusive section of the study. The section is divided in four categories:

- the first concerns the *technologies adopted* within stores to support omnichannel activities. These can be implemented to improve the customer experience, to allow sales force to place cross-channel orders, to make customers more independent and finally to enlarge store assortment;
- the second category concerns *in-store staff activities*. Sales assistants see their role modified with a view to job enlargement, since they are increasingly involved in the preparation of cross-channel orders, in

the remote assistance to customers' online shopping experience or, as just mentioned, in the use of technological solutions allowing to place online orders directly from the shop;

- the third category assesses the *changes affecting the point of sale itself* from a physical point of view. Indeed, pitches dedicated to the drive&collect option or parcel lockers can be introduced for the pick-up of online orders. Even inside the store, there may be warehouse areas dedicated to preparation and fulfilments of orders coming from online channels.
- the last category of this section investigates *new store formats*. These can be linked to omnichannel in the strict sense – as dark stores or hybrid stores (point of sales that also act as a hub for online orders management) – or they can focus more on experience and interaction with customers through new touchpoints – as in case of experiential and pop-up stores.

For all the categories, the components included assume the same score. Indeed, apart some exceptions regarding certain sectors that due to the business characteristics can't adopt some of the above-mentioned elements, scores are assigned in a homogeneous way.

Different weight is instead assigned to the four categories, according to the data collected through the survey: the first two areas result indeed to be more important than the third and fourth. Results of the weighting process are reported in the table 1.5.

	IN-STORE TECHNOLOGICAL SOLUTIONS		PERSONNEL ACTIVITIES	SPACES MODIFICATION (IN/OUT)	NEW FORMATS
Clothing	0,375		0,238	0,213	0,175
Food	0,222		0,3	0,233	0,244
Furniture and home improvement	0,325		0,325	0,125	0,225
Cosmetics	0,304		0,280	0,204	0,212
Electronics	0,304		0,280	0,204	0,212
Other	0,325		0,275	0,2	0,2
High	Medium-high	Medium-low	Low	Sum of weights by row = 1	

Table 1.5 Weights of categories in the point of sales section (sample 25 retailers, values range 0-1)

The last step in creating the index is represented by the combination of the 5 sections. The results emerged from the survey are reported in the table 1.6 below.

	STRATEGY & CHANNELS MANAGEMENT		DATA STRATEGY		OMNICHANNEL MODELS & OPERATIONS		ORGANIZATION		POINT OF SALES	
Clothing	0,275		0,233		0,158		0,217		0,117	
Food	0,222		0,207		0,237		0,178		0,156	
Furniture and home improvement	0,233		0,183		0,25		0,133		0,2	
Cosmetics	0,245		0,213		0,216		0,179		0,147	
Electronics	0,2451		0,213		0,216		0,179		0,147	
Other	0,25		0,217		0,25		0,15		0,133	
High	Medium-high	Medium-low	Low	Extremely low	Sum of weights by row = 1					

Table 1.6 Weights of different sections (sample 25 retailers, values range 0-1)

After having computed the various indexes, it has been possible to conduct quantitative and qualitative assessments to evaluate the trends and the *progress of the omnichannel paradigm in the Italian territory* and, therefore, to answer to the conclusive question.

5. *Quantitatively, how the situation of omnichannel in the Italian Retail market is? Which are the most advanced product sectors? Which are the least developed areas?*

From the Index application, it has emerged that – without considering the discrepancies between sectors – the maturity of the Italian Retail industry corresponds to 51% (Omnicanality-Index value = 0.509).

The results are, anyway, quite heterogeneous as shown by the *distribution* displayed in the Figure 1.4 below: the overall values obtained from the sample of companies considered ranges from a minimum value of 0.269 (27%) to a maximum value of 0.791 (80%).

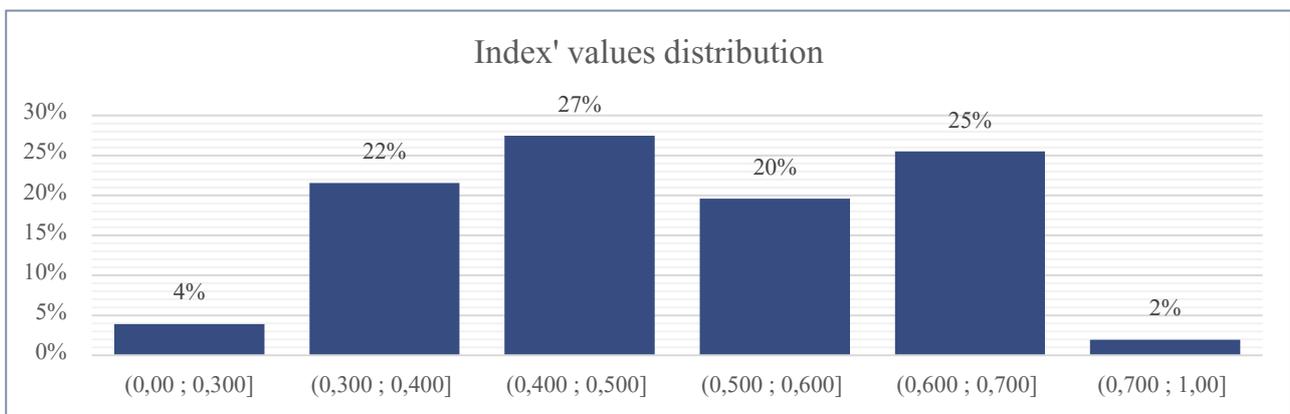


Figure 1.4 Index' values distribution (sample 51 retailers operating in 6 sectors, investigated thanks to the survey "Retail between online and offline: omnichannel integration")

More in detail, given the five sections that make up the Index, the part related to *strategy and channels management* is the one that has reached a greater level of maturity equal to 0.589 (59%), while the lowest level of maturity is covered by the *management of the point of sales* with a value of 0.280 (28%) as evidenced in the Figure 1.5.

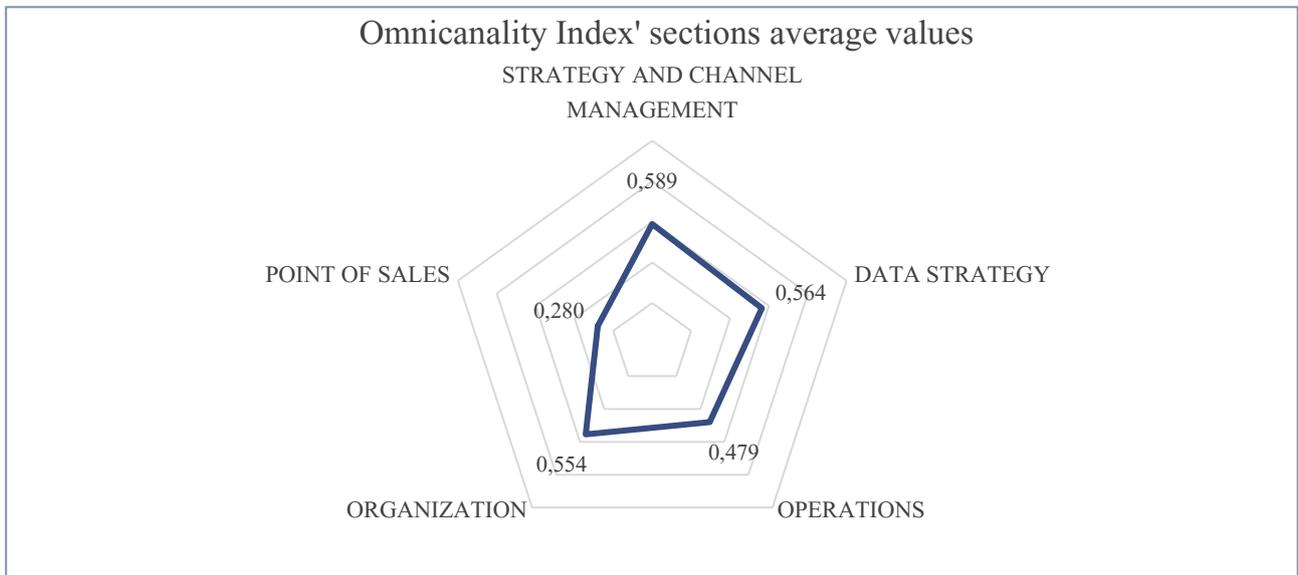


Figure 1.5 Index' section average values (sample 51 retailers)

Further detailing the level of investigation and considering the different sectors, it emerges that the most advanced sector in terms of omnichannel maturity is the *clothing and footwear industry*, while the least developed is, to date, the “other” group including *publishing, pet care, jewellery, etc.* Sectors’ overall results are summarized in the Figure 1.6 below.

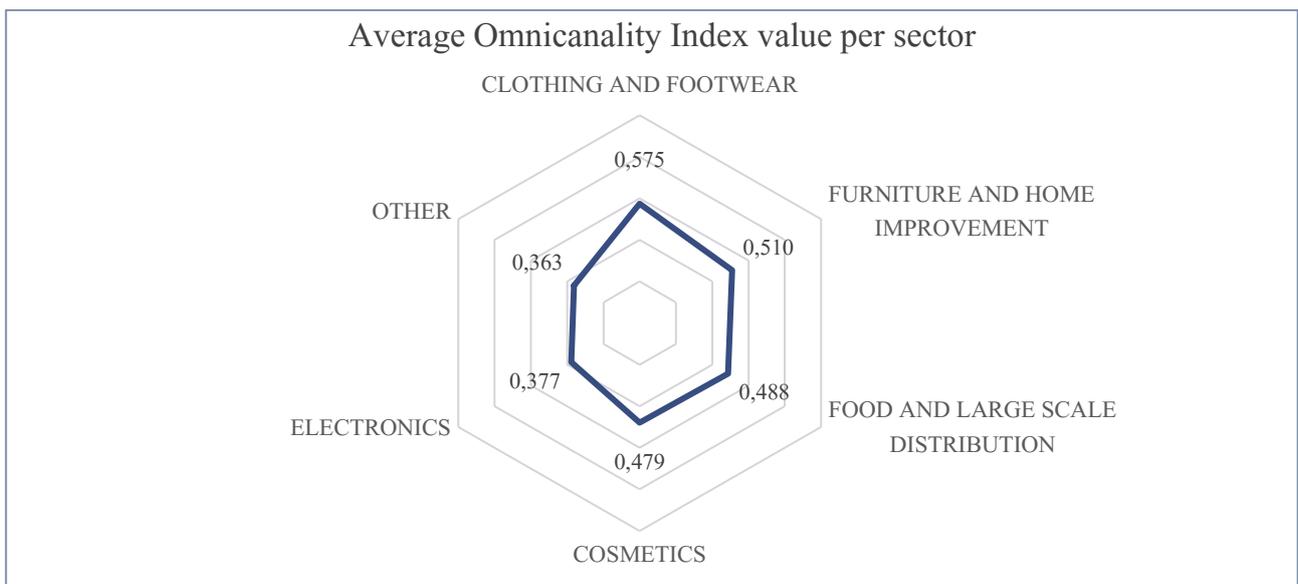


Figure 1.6 Average Index Value per sector (sample 25 retailers)

By comparing the different sectors, to date it emerges that:

- the *cosmetics* industry is the most developed in terms of the *strategy and management of channels*, as well as for what regards the *organizational renewal*;
- considering both *omnichannel models and operations area, furniture and home improvement* sector is the most advanced. This industry also scores equally to the cosmetic sector in the *organizational* aspects;
- for what regards the management of the *store*, the highest score is achieved by the *food and large-scale distribution* sector;
- finally, the *clothing and footwear* sector is the most advanced in terms of *data strategy*.

The Figure 1.7 below summarises all the sections' comparisons by considering the different sectors above mentioned.

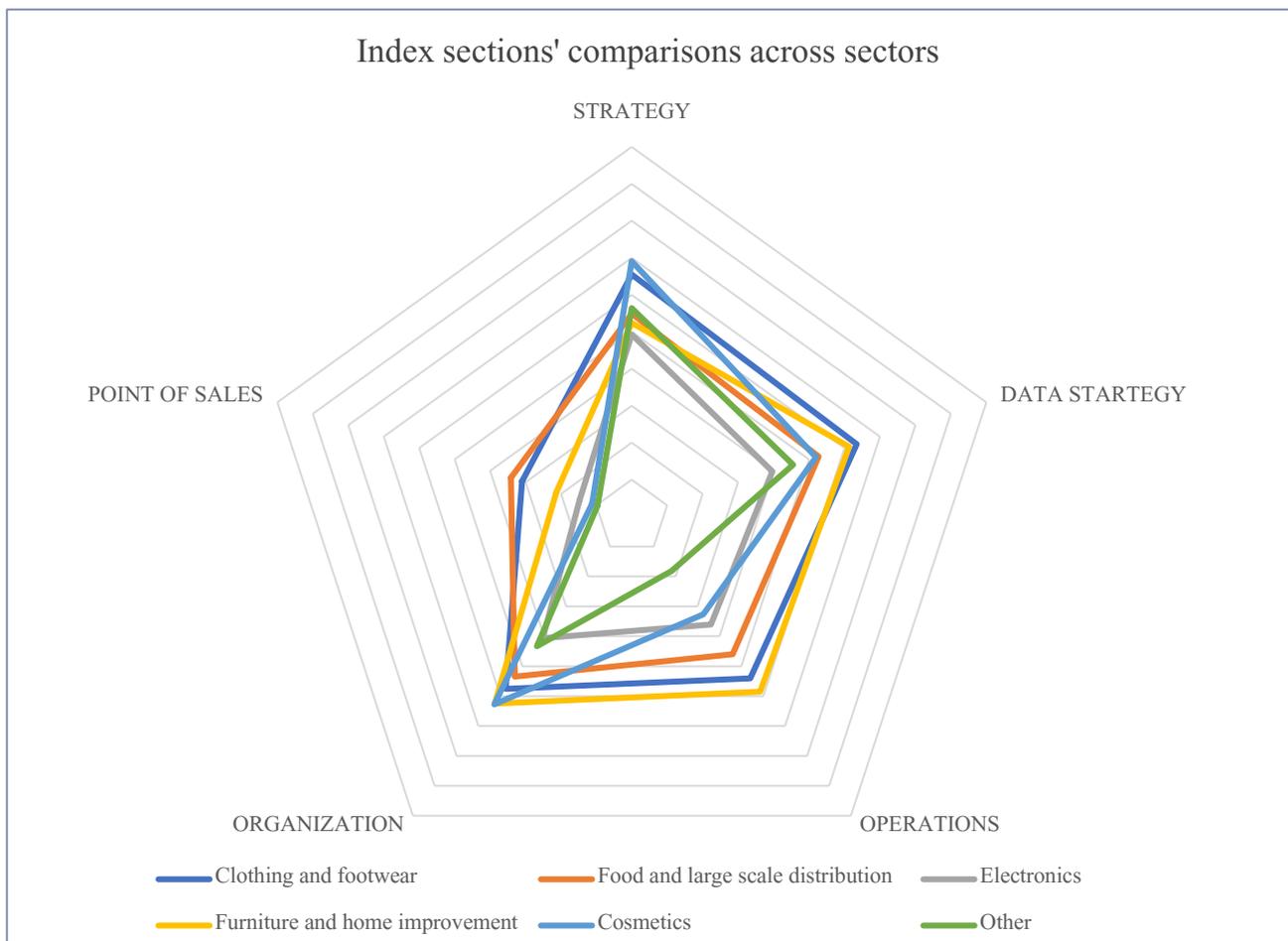


Figure 1.7 Index sections' comparisons across sectors (sample 25 retailers)

In addition, during this phase of the analysis, an across category parallelism between the *Omnicanality Index values* and the *survey for weights assignment* used for the Index creation has been conducted. This comparison showed the existence of a gap between what retailers consider more relevant in terms of priority and/or utility during the implementation of an omnichannel strategy (survey rankings) and the practical approach that, to date, companies adopt (Index' results). This indicates the existence of some barriers that obstacle retailers to achieve what they consider an optimal situation reasoning in terms of "infinite resources".

Finally, in the last part of the analysis a direct comparison was made between the clothing and footwear sector and food and large-scale distribution industry. The choice of focusing on them is linked to the significant sample of answers gathered (18 and 19, respectively) from the survey "*Retail between online and offline: omnichannel integration*". This allowed to understand the similarities and differences between the two sectors, with a focus on the single variables of the Index testifying different behaviours and maturity levels.

The main difference for the strategy and channels management section concerns the indirect digital channels chosen by the two groups of retailers. While the food sector places great emphasis on the flash sales and eTailer sites, for the clothing industry, the use of social media and instant messaging channels is predominant. In addition, regarding the management of the channels, in the food sector prevails a partial alignment of the main drivers, while fashion retailers tend to offer assortment, prices and promotional policies completely aligned between online and offline channels.

Another interesting insight concerns the different adoption of omnichannel models by the two groups of retailers. Both frequently adopt models such as click&collect and in store purchase and home delivery; in addition, the clothing industry vastly uses models such as online selling in store and cross-channel returns.

At the organizational level, instead, the comparison between the two sectors showed how fashion companies prefer the introduction of a business unit completely dedicated to omnichannel; on the opposite, companies operating in the food industry tend to introduce a cross-functional team with an ad hoc manager.

Finally, impacts on points of sales are also different for the two sectors: in the grocery case, when shifting to an omnichannel strategy, significant changes in the stores' spaces occur; in the clothing case instead, the staff represents the most "omnichannel" factor.

The last step of the analysis, even if it isn't part of the mapping of Omnicanality in the Italian scenario, was aimed at understanding how the adoption of an Omnichannel strategy affects companies' economic results. To such purpose, a linear regression between the Omnicanality Index and companies' revenues has been performed, noticing a positive correlation between the two factors with a coefficient of 0.379 and a P-Value lower than 0.01.

1.5 Conclusions and further improvements

Considering the benefits of the work, the Index allows to collect within a single indicator all the activities and factors affecting an omnichannel transformation and, consequently, to give a quantitative measurement of it. The advantages are, therefore, twofold: on the one hand, it enables retailers to assess their omnichannel evolution status for understanding where they should concentrate their future investments to reach greater omnichannel maturity; on the other hand, at the academic level, the Omnicanality Index makes it possible to evaluate the growth or the development of the phenomenon across years.

However, there is still room for further improvement: considering that the Retail sector is constantly evolving and organizations are moving more and more towards an omnichannel integration, this thesis work could be further enriched by progressively adding new variables to the actual 120 composing the Index. This won't compromise the Index's structure, as the scores of the individual variables that make up the different categories are – for the majority of cases – all equal to $1/X$; therefore, by increasing the number of factors involved (X), they can be easily adjusted.

In addition, once the Covid-19 pandemic will have a lower impact on companies' profitability, more reliable examinations can be performed: specifically, additionally to the index-revenues comparison above introduced, the Index could be correlated with different balance sheet indicators to understand how Omnicanality affects business success.

2. INTRODUCTION

2.1 Introduction to Retail

The Retail world is undergoing a profound transformation. The growth of the eCommerce, the advent of new digital technologies and increasingly demanding consumers push retailers to review their traditional business models and to move towards a greater integration of online and offline channels in an omnichannel perspective.

Retail, by definition, is the sale of goods or services from a business to end consumers for their own use; a Retail transaction normally handles small quantities of goods – in contrast to wholesale, which deals with the purchase of goods on large scale.

Retailers, defined as businesses from which customers purchase goods or services, act as intermediaries between producers and consumers. Typically, they do not manufacture the products they sell, but they are used to buy goods from a manufacturer or a wholesaler and to sell these goods in small quantities to end customers through various distribution channels.¹

The Figure 2.1 allows to better understand the Retail supply chain, the actors involved and retailers' role.

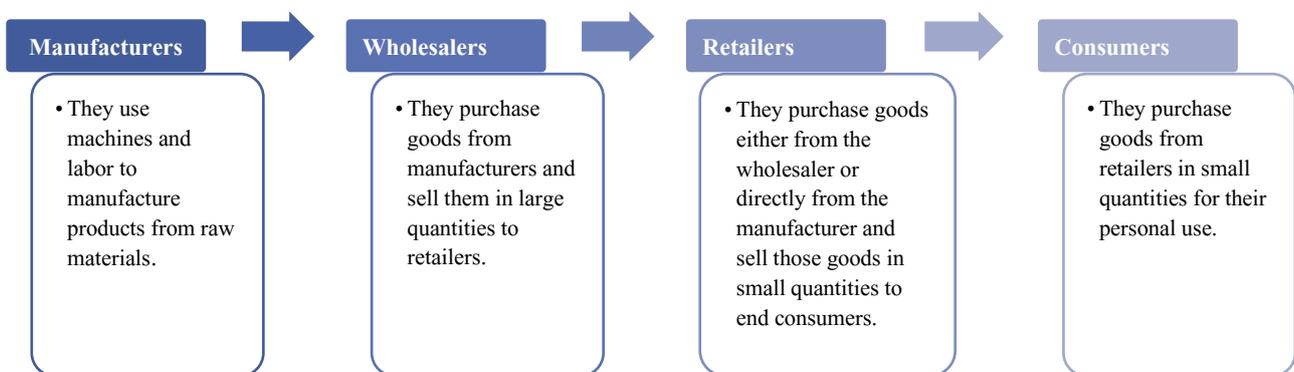


Figure 2.1 Actors involved in the Retail supply chain

To deeply analyse the Retail sector, it is important to precisely classify retailers. They can be grouped according to the *channels they choose to offer their products*, each one coming with its pros and cons.

¹ <https://erply.com/what-is-retail/>

More precisely, the division of the various sales channels can be performed following two main factors: on one side, channels can be distinguished according to the *ownership* – directly or indirectly managed – on the other side, according to the *virtual or physical presence*.

2.1.1 Physical channels

Traditionally, the physical store was the sole point of contact with customers. Today, with the advent and rapid spread of eCommerce and the birth of omnichannel models, the physical shop is becoming a totally different place from that of its beginnings. The change of role imposed by the growth of other sales channels, anyway, did not make it lose its value: brick-and-mortar stores still represent – and are projected to cover – over 80% of the global Retail sales from 2015 to 2021.² Especially with the first stores' reopening after Covid-19 emergency, the point of sale has become a place where people can go back to socialize and find again "normality" in their lives.

In this section, the first focus will be on point on sales' importance. The crucial role that the physical store continues to maintain, is demonstrated by the fact that also eCommerce giants such as Alibaba with Hema - its new kind of superstore - and Amazon with the acquisition of Wholefoods in 2017, are investing in brick-and-mortar stores.

Indeed, as stated by PwC in the report *Rethinking Retail: The role of the physical store*, the store will not disappear but its role is vastly changing. It can no longer be considered simply as a place to sell products and earn money, but it should be regarded fundamental for the value-added to the customer journey, for which it remains extremely important. One of the key aspects of point of sales is, indeed, the physical experience and the human interaction that customers have the possibility to live.

PwC and The Retail Academy & Gondola Group, through a survey and some testimonials, analysed the Belgian Retail market with the aim of understanding the evolution of the physical store. Consumers were asked to name shopping experiences that gave them satisfaction: face-to-face interactions with knowledgeable and helpful salespeople was the most mentioned. It can be consequently affirmed that human contacts are key to create a satisfactory experience.

² <https://www.statista.com/statistics/534123/e-commerce-share-of-retail-sales-worldwide/>

Additionally, according to another survey conducted by PwC on a representative sample of 15.000 people from 12 countries, 75% of customers is willing to interact more with “real people” as technology keeps evolving.

After having proved the importance of the physical store, the next step is to clarify *which kinds of stores exist*.

There are several typologies of Retail stores which differ according to products’ assortment and prices, customer experience, services, and other factors. The main types are:

- *specialty store*: it carries very limited product lines with deep assortment;
- *department store*: it provides a wide range of products arranged by categories into different sections of a single physical Retail space;
- *supermarket*: large, departmentalized, self-service store specialized in food and some non-food items;
- *convenience store*: typically located in residential areas, it offers a limited range of products with narrow product lines at slightly higher prices;
- *discount store*: it sells a wide variety of products that are often privately labelled or generic brands at below-Retail prices;
- *hyper market*: huge in size, it offers products that goes beyond routinely purchased goods;
- *warehouse store*: it sells products packaged in large quantities, at prices lower than Retail;

The physical store can be directly owned and controlled by the retailer or indirectly managed. Hereafter, are listed the possible alternatives regarding Retail *ownership* typologies, with the respective advantages and disadvantages.

- *Independent Retailer (DOS – Directly Owned Stores)*: as the name suggests, independent stores are business built without the support of an established brand and they are independently owned and managed. The owner may have multiple stores operating similarly, but they do not benefit from economies of scale.

The biggest advantage of an independent business is the ability to have full control over operations and procedures; in addition, independent stores are able to adapt to the local context and tailor their product assortment to reflect local tastes, brand preferences, or customs.

While independence is beneficial in terms of flexibility and creativity, it can also be a disadvantage: the owner has to take full responsibility of it. Additionally, it can take longer to catch customers and to achieve a good profit level; according to SCORE, a lack of cash flow, which is critical for running a Retail store, is the number one cause for business failure.

According to the *Global Consumer Insights Survey* conducted by PwC and published in June 2021, small independent retailers recorded a 5% increase compared to three months earlier (March 2021) in the number of shoppers buying from them. Additionally, 6% of respondents declared they have been doing more to support local independent businesses.

The Figure 2.2 below reports the result emerging from the survey question: “Thinking about the past six months (from October 2020 to March 2021), considering your general shopping behaviour both online and in physical stores, please indicate to what extent you agree or disagree with the following statements”.



Figure 2.2 Answers' responses to the survey's question, Source: PwC's June 2021 Global Consumer Insights Pulse Survey (base of the survey equal to 8681 respondents)

- *Franchise*: by definition it is a method of distributing products or services involving a franchisor, who establishes the trademark and the business system, and a franchisee, who pays a royalty and often an initial fee for the right to do business under the franchisor's name and system.³

One of the main advantages for the franchisee is the business support: depending on the terms of the contract, the franchisor may offer assistance for locating and constructing the Retail store, for hiring and training employees, and finally for advertising and administering the store effectively.

Another major advantage is brand awareness: unlike an independent store, franchises are well-known companies with a recognizable brand image; therefore, the failure rate and the risk of opening are much lower compared to solo business.

On the contrary, the main drawback is the lack of complete control; the franchisee, indeed, cannot take decision independently but has to comply with the restrictions declared in the agreement.

- *Dealership*: it is a combination between a franchise and an independent retailer. The retailer has the right – sometimes exclusive – to sell a wide variety of brands but, differently from the franchise, there are no fees to the licensor.
- *Corporate chain*: it is a set of multiple stores following some standards for execution, integrated under a central ownership. Sometimes they may be confused with the franchise: the key difference is represented by the fact that, while corporate chains are centrally owned, franchises are managed by single owners who have previously signed a contract with a large company.

Corporate chains take the advantage to leverage on large-scale operations with the ability to standardize purchasing, advertising, and promotion processes; furthermore, thanks to this standardization they are able to offer lower prices compared to independent stores.

- *Co-op*: it is a group of several independent retailers joining together. They pool their resources and leverage on their purchasing power to obtain greater discounts from suppliers and to share marketing or infrastructure costs. As a general rule, all members of the cooperative have the same voting rights,

³ <https://www.franchise.org/faqs/basics/what-is-a-franchise>

regardless of the size of their company. The main advantage comes from the increase of their purchasing power, which leads to lower costs.

2.1.2 *Online channels*

Continuing the analysis of the Retail sector, the focus of the next section moves on *online channels*. With the advent of the Internet and its rapid spread, Retail has adapted to it, so as to take advantage of the great opportunities offered by the online world and by digital innovation.

There are many examples of retailers who have developed online capabilities by offering their products through a website to complement the physical store with an eCommerce option; at the same time, some online retailers, as mentioned also before, are becoming aware of the importance and added value of a physical experience with customers and choose to extend their brands by opening brick-and-mortars stores. An example of the phenomenon just mentioned is given by the health company Chainforfood, a .com that in August 2021, in Pavia, opened "Al Volo", a phygital store open 24/7 with a wide offer of local products.

As for physical stores, online channels can be managed directly by the retailer, or they can be third-party websites and platforms on which retailers rely to offer their products. Below are listed the available online sales channel:

- *Own website*: it is a fully owned online store, where the management and transactions are carried out by the retailer itself.

The main advantage of having this typology of website is undoubtedly the direct contact with customers. This means that there are no intermediaries in the communication with them; therefore, the site with which users interact is configured to best reflect the characteristics of the brand. This also leads to greater customer loyalty to the retailer.

Having an eCommerce website also means gathering useful data about buyers and potential customers. Most cases, clients must have an account on the site to complete their purchase. Data such as age, gender, email address and place of residence collected both in the registration phase and in subsequent moments may be recorded in appropriate databases and then aggregated and used by the company. For

example, owning customers' email addresses provides the ability to communicate in a more formal and direct manner with them, as well as the possibility to offer personalized discounts and suggestions.

Another advantage is represented by the higher degree of autonomy in taking strategic decisions and the greater profit margin reachable compared to any other channel. Unlike the others, indeed, this type of online channel allows for a "rapid" sales process: products leaving brands' factory can be immediately shipped to buyers without moving them to other warehouses to then be sold through third-party channels.

Despite the many advantages, one drawback is represented by the complexity that enterprises have to deal with when implementing an in-house website, starting with the investments in a service provider to set up the platform, till the need to recruit new specialized staff for the management.

- *Marketplace*: it is an intermediary website that retailers can rely on to sell their goods. The main function of a marketplace is to collect products from different sellers within the same platform (Amazon, eBay, Zalando, etc.). In particular, what distinguishes a marketplace from an eTailer is the ownership of the merchandise: in the first case the retailer sells its products to the third-party vendor and no longer owns them.

According to The Enterprise Marketplace Index – an analysis related to marketplaces conducted by Mirakl, a Software as a Service (SaaS) platform – in the fourth quarter of 2020, marketplaces recorded an 81% year-on-year growth, which corresponds to more than double the growth of owned eCommerce websites. The network of sellers offering their products on marketplaces has increased with an average of 46% in the last year; concurrently, the GMV – Gross Merchandise Value, corresponding to the total sales volume on platforms – per seller has increased by 24%. In addition, marketplaces allow a "*push effect*" to retailers' eCommerce site: according to the Index, merchants leveraging the marketplace model benefited from additional demand and heightened visibility with 34% increase in organic website traffic with no additional marketing cost.

Getting into a marketplace is cheaper than building a proprietary eCommerce site. Among other benefits the platform represents a sort of guarantee for its high visibility and reputation.

On the other hand, the possibilities of customization are reduced to the minimum, the high number of sellers offering similar products intensifies the competition and building from scratch a solid brand awareness on a marketplace is complicated; all these factors complicate the creation of long-term relationships with customers.

- *Flash sales*: are online platforms selling products at discounted prices for a limited period of time, usually around 24/48 hours. The time limit and the scarce availability of products encourage consumers to buy immediately and to make the so-called impulse purchases.

Flash sales can be an extremely effective method to quickly sell overstocked or off-season items. Additionally, they represent a great opportunity to raise brand awareness and attract new customers' segments.

- *E-tailer*: like marketplaces, also eTailers are intermediary websites bringing together products of different retailers within a single platform. However, in this case, these sites do not become owners of the products they offer but the property remains on retailers.
- *Social commerce*: it is a combination of social network and eCommerce. Users can buy products directly on the social media platform, with a simplified and intuitive shopping experience. From Facebook store, to Pinterest Buyable Pins and Instagram Buy Buttons, selling on social media is progressively becoming more profitable considering the large number of users that retailers can reach. According to data reported by We are social in collaboration with Hootsuite, the number of social platform users has grown by 13% in the past year – with nearly half a billion new guests – reaching a total of 4.2 billion people connected for an average time of approximately 2 hours and 25 minutes per day.

Considering the advantages, social commerce is not limited to promoting the purchase of a product or a service such as an eCommerce platform, but it involves the customer in all the stages preceding and following the buying, attracting users and creating an engaging relationship with them.

- *Couponing website*: these represent platforms through which retailers can offer products at discounted prices or provide coupons to access additional rebates, therefore raising brand awareness and enlarging their customer base.

In the Table 2.1 the classification presented so far based on the factors above mentioned – *ownership and online or offline presence* – is summarised.

	Offline channel	Online channel
Directly managed channel	<ul style="list-style-type: none"> • Independent Retailer • Co-op 	<ul style="list-style-type: none"> • Own website • Social commerce
Indirectly managed channel	<ul style="list-style-type: none"> • Franchise • Dealership 	<ul style="list-style-type: none"> • Marketplace • Flash sales • eTailer • couponing

Table 2.1 Retailers' classification according to ownership and channel typology

Some scholars of the Harvard business school conducted a research analysing the shopping behaviour of more than 46.000 customers who made a purchase in the period from June 2015 to August 2016. Clients were asked some information about their typical shopping journey; in particular, the focus was on the channels they usually choose to purchase and why. Among the participants, just 7% of them were online-only shoppers and 20% were store-only shoppers. The majority, the 73%, affirmed to use multiple channels during the shopping journey. Additionally, customers using multiple channels spent an average of 4% more (in terms of money) on each purchase occasion in store and 10% more in the online touchpoints compared to single-channel consumers. Finally, omnichannel shoppers were found to be more loyal: within six months after the omnichannel shopping experience, these customers – with respect to single channel clients – had 23% more repeated visits to Retail stores and they were more likely to recommend them to others, such as family and friends.

The development of new technologies that provide customers with a wide range of means of communication, the increasing complexity of information and services to be provided and the heterogeneity of the public that companies have to engage with, require retailers to continuously develop their presence in alternative channels and differentiate their points of contact with clients.

2.1.3 Channels evolution

As mentioned earlier, increased used of smartphones, digital tools and Internet in general, allows customers to shop from the comfort of their home, without the need to physically visit the point of sale. This tendency led to a sales process evolution, shown in the Figure 2.3 and described in detail below.

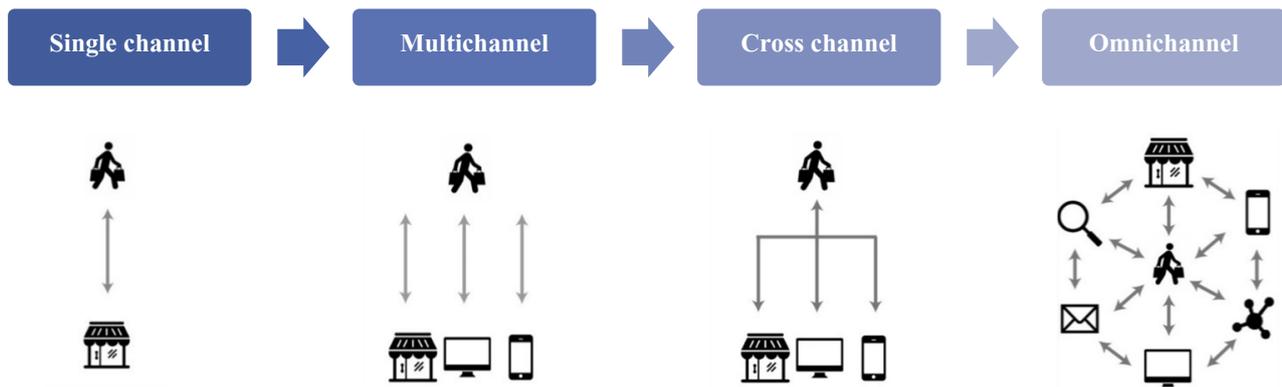


Figure 2.3 Sales process evolution

Single channel

Single channel retailers reach their clients adopting just one physical or virtual distribution channel. This strategy enables a direct, strong and unambiguous contact with the end customer reducing organizational complexity and minimizing costs. On the other side, the main risk is the inability to reach segments with different shopping behaviours, which are used to interact with alternative channels and touchpoints. This approach is particularly risky considering how connected and empowered consumers are nowadays. As a result, operating through a single online or offline store means to have less customers in touch with the brand. This significantly reduces brand awareness and slows down sales growth from a financial perspective.

In summary, the single-channel approach cannot meet the needs of clients which expect to be able to make purchases anytime, anywhere and from any device. Consequently, companies began to move towards a multichannel strategy, in order to adapt to customers' requests.

Multichannel

As the name implies, the multichannel approach provides consumers with two or more channels, online or offline, through which they can have access to company's products and services by choosing the touchpoint they prefer – such as social media, mobile apps, online website, or physical stores. Unlike the previous category, offering products on different channels could increase the visibility of the company and attract new potential customers which can choose different purchase modalities according to their personal convenience and preferences.

Another important advantage is related to data: companies can have a diversified customer base from whom to gather data and analytics. As consequence, they can use this information not only to compare different channels' performances – to assess the one preferred by customers – but also to compare how products perform on complementary channels.

The transition from a single-channel strategy to a multichannel one is not straightforward and immediate: besides the fact that controlling different channels becomes more expensive, the transition may be delayed due to a lack of internal coordination between functions or due to a scarcity of internal competences.

To overcome risks associated with the lack of connection of different channels and to maintain multichannel strategy's advantages, companies have moved towards a more integrated approach, specifically the cross-channel Retail.

Cross channel

Cross channel Retail is similar to the multichannel approach, as the retailer is present in more than one channel. However, one factor distinguishes the two strategies: while in the multichannel case a customer can only choose one channel to make a purchase, in the cross-channel strategy the client can use different channels simultaneously to place an order. Specifically, he can initially collect products information using an online touchpoint – such as a mobile app – and conclude the purchase in an offline channel – i.e. the physical point of sales – or vice versa.

According to a survey conducted by Deloitte in 2013 in UK and Germany, almost a third of consumers used to rely on more than one channel during their shopping journey: 31% of them declared to visit a physical store before concluding the purchase online and the 34% affirmed to search information online before visiting the physical point of sales. This trend has continued to grow over the years, to the point that an online survey conducted by Forrester in 2020 also found that nearly half (44%) of end-consumers most of the times searches products and information online before making a purchase in the physical store.

According to this approach, the different channels that a company adopts are not in competition among themselves but rather complement each other. To take full advantage of this strategy, organizations must integrate information and data between channels so to enable customers to move seamlessly from one to another.

Omnichannel

The very last step of channels evolution is the omnichannel Retail. As cited in the academic paper “*From Multi-Channel Retailing to Omnichannel Retailing: Introduction to the Special Issue on Multi-Channel Retailing*” (Peter C. Verhoef, P.K. Kannan, J. Jeffrey Inman – 2015) while in the multichannel approach channels are managed separately with limited integration, in omnichannel Retailing they are fully integrated and interconnected. Companies adopting an omnichannel strategy are able to provide customers a seamless customer journey, allowing them to interact with the business across multiple touchpoints simultaneously and to move smoothly from a channel to another to complete a purchase.

The omnichannel makes a further leap forward compared to the cross channel Retail because it not only puts the consumer at the centre, but provides an interconnected system between all the points of contact, allowing users, as just said to live the same experience on all touchpoints.

The main benefits arising from this strategy – such as greater loyalty, increase in traffic and profitability – as well as the main risks – such as channels cannibalization and the higher investments required – will be explained in more detail in the scientific and non-scientific literature analysis section. For now, it is important to emphasize that the adoption of this type of strategy involves the firm at 360 degrees, leading to profound changes in many aspects of the organization.

Bain&Co, analysing and working with many clients in the Retail sector, listed two important rules that companies should follow to guarantee a seamless shopping experience. First, silos within the organization must be removed to make room for greater collaboration across channels and functions. Then, since working on the organizational structure is not enough, all responsibilities, technologies, structures, behaviours, skills and people must be innovated and aligned according to the new strategy.

After having analysed channels’ evolution over time and throughout technological changes which push retailers to move towards an omnichannel approach, in the following section it is examined the current Retail scenario both at a global and Italian level.

2.2 Retail scenario

For over half a century, as mentioned at the beginning of the chapter, Retail has dealt with profound changes. New consumer behaviours, new services, in-store innovations and the advent of eCommerce have totally changed the face of traditional Retail. In this context, the Covid-19 pandemic put a strain on the sector:

instability and closures have caused a reduction in total sales. While physical stores were suffering enormously, eCommerce has become increasingly central and decisive.

Nowadays, technological innovations have profound impacts on consumers' purchasing behaviour. Thanks to the spread of smartphones, customers have at their disposal an infinite amount of information about brands and products, as well as reviews and price comparison mechanisms; therefore, they are able to make more rational and aware purchasing decisions.

In addition, the continuous affirmation of the Internet has made customers more and more demanding: they want to be able to buy their products at any time and with any available device, without having to physically visit the point of sale.

As consequence, today, Retail is not seen any more a set of purchase transactions: clients are looking for immersive and unique experiences with higher engagement in the relationship with retailers.

In this section it is proposed a mapping of the context of the Retail world at a global and Italian level; in the next one, the focus will be on the pandemic and the changes it has caused.

2.2.1 Global scenario

2020 has been a challenging year for the Retail world due to the spread of the Covid-19 pandemic. Many retailers have faced forced closures, a drop in consumer mobility, increased online activity and reduced spending on discretionary products. In 2021 the situation is improving: although the virus continues to pose a threat in some parts of the world, the distribution of vaccines feeds the belief the situation will improve by the end of the year.

Globally, the Retail market is growing and it is highly competitive. According to data from Statista, the total Retail sales worldwide will be \$25.04 trillion in 2021, compared to 2018, which was worth around \$23.6 trillion. Despite the reduction in sales during the pandemic period, Retail continues to gain market and global Retail sales are expected to be around \$26.29 trillion by 2022. ⁴

⁴ <https://www.statista.com/statistics/443522/global-retail-sales/>

Mentioning again Statista, sales from eCommerce channels in 2021 correspond to 19% of total sales; by 2024 the share of sales coming from physical stores will decrease to leave further room to online ones, that will reach about 23% of total sales. ⁵

Deloitte's *Global power of Retailing 2021* report analyzes world's 250 largest retailers (considering the ones with an amount of sales equal or larger than \$4 billion). From this research it emerges that Retail market is highly concentrated: the top 10 retailers hold, indeed, 32.7% market share. As shown in Figure 2.4 below: most of them are based in the US and there are no new entrants the last year. The only company that has continued to climb the rankings since 2015 - the year it first appeared in the top 10 - is Amazon: in 2019 it was the only one among the listed companies to achieve double-digit revenue growth and it earned the second position pushing Costco down to the third place.

Data are summarized in the Figure 2.4 below.

Top 10 retailers, FY2019

Top 250 rank	Change in rank	Name of company	Country of origin	FY2019 retail revenue (US\$M)	FY2019 retail revenue growth	FY2019 net profit margin	FY2019 return on assets	FY2014-2019 retail revenue CAGR*	# countries of operation	% retail revenue from foreign operations
1	↔	Walmart Inc	United States	523,964	1.9%	2.9%	6.4%	1.5%	27	23.2%
2	↑ +1	Amazon.com, Inc.	United States	158,439	13.0%	4.1%	5.1%	17.7%	17	31.0%
3	↓ -1	Costco Wholesale Corporation	United States	152,703	7.9%	2.4%	8.2%	6.3%	12	26.8%
4	↔	Schwarz Group	Germany	126,124	8.6%	n/a	n/a	7.4%	33	66.0%
5	↔	The Kroger Co.	United States	121,539	1.0%	1.2%	3.3%	2.3%	1	0.0%
6	↔	Walgreens Boots Alliance, Inc.	United States	115,994	4.8%	2.9%	5.9%	8.7%	9	9.9%
7	↔	The Home Depot, Inc.	United States	110,225	1.9%	10.2%	21.9%	5.8%	3	8.1%
8	↔	Aldi Einkauf GmbH & Co. oHG and Aldi International Services GmbH & Co. oHG	Germany	106,326 ^e	5.6%	n/a	n/a	6.4%	19	68.9%
9	↔	CVS Health Corporation	United States	86,608	3.1%	n/a	n/a	5.0%	1	0.0%
10	↔	Tesco PLC	United Kingdom	81,347	1.4%	1.5%	1.9%	0.8%	8	18.3%

Figure 2.4 Top 10 retailers, Source: Deloitte - Global Powers of Retailing 2021 (Analysis of financial performance and operations for fiscal years ended through 30 June 2020)

All of the top 10 retailers are investing to expand their eCommerce capabilities and move towards a higher level of integration following an omnichannel approach.

Walmart, for example, has expanded its omnichannel strategy by launching multiple delivery and in-store pickup initiatives in the United States, Canada, Mexico, and China. It also announced its decision to join

⁵ <https://www.statista.com/statistics/1095969/retail-sales-by-channel-worldwide/>

Amazon and Aldi in the USDA's SNAP online purchasing pilot: a two-year trial taking place in New York State, launched in 2019, that allows participants to select and pay for their items online, making grocery shopping more accessible and safer especially during the pandemic period.

Other omnichannel actions have been taken by Schwarz Group. As part of Lidl's strategy to offer more digital solutions to shoppers, it launched some eCommerce pilots in 2019. Aldi, the same year, started a click&collect trial in the UK and it plans to expand the initiative to other point of sales and countries in the future.

The Deloitte report also presents an analysis by product-sector; the industries considered are apparel and accessories, fast-moving consumer goods (FMCG), hardlines and leisure goods. Each company has been assigned to one of the three specific product sectors if at least half of its Retail revenues is derived from that defined product category; otherwise, it is classified as diversified.

As can be seen in the Figure 2.5, fast-moving and consumer goods sector contributes to almost two third of the Top 250 Retail revenue. Retailers in this sector are significantly larger compared to others, but the FMCG sector generates the lowest net profit margins (equivalent to 2.0%, 1.1 percentage points lower than the composite Top 250) due to higher costs and stronger price competition.

The second position is occupied by hardlines and leisure goods sector; this recorded the highest five-year CAGR (8.7%) and net profit margins are at 4.4%, (1.1 percentage points higher than for the Top 250).

Continuing the ranking, the apparel and accessories sector recorded the best performances in terms of net profit margins (6,9%) and it also achieved the highest return on assets, ROA (6.3%). Company branded stores, focusing more on omnichannel presence and on improving the in-store shopping experience, continue to be successful business models.

Finally, the diversified sector hosts 21 companies, chosen among the 250 Top retailers with diversified activities in multiple product sectors. They are smaller than the ones in other sectors, with an average Retail revenue per company of \$11.8 billion; they are also less international, with a share of revenues coming from foreign operations of only 9.7% in 2019.

A summary of results just disclosed is reported in the Figure 2.5.

	 Apparel and accessories	 FMCG	 Hardlines and leisure goods	 Diversified
Retail revenue FY2019	US\$467.3B	US\$3,198.3B	US\$934.1B	US\$247.5B
Share of Top 250 FY2019	10%	66%	19%	5%
No. of companies	39	135	55	21

Figure 2.5 Revenues, share of the top 250 and number of companies per sector, Source: Deloitte - Global Powers of Retailing 2021 (Analysis of financial performance and operations for fiscal years ended through 30 June 2020)

As last point of this section, is analyzed the state of the art of the eCommerce market at a global level using data processed by the *Osservatorio eCommerce B2c (School of Management – Politecnico di Milano)*. Focusing on products, in 2020, eCommerce was worth 2.582 billion euros (the total value of products and services in 2020 was around 3.200 billion euros) with a growth rate of 16% compared to 2019: this value resulted to be slightly lower than expected; this can be justified by the fact that, after the first months of lockdown, online consumption experienced a slowdown due to the reduction in the economic availability of part of the population.

In the analysis three main markets were considered:

- the Chinese market, with a value of 1.191 billion euros, a growth rate of 16% and an eCommerce penetration rate – indication of the maturity of the market – equal to 24%. This last percentage indicates that a quarter of the purchases taking place on the Chinese market were made online;
- US and European markets, with values of 564 and 551 billion euros respectively, registered the same growth rate of 18% but different penetration rates: in the US out of 100 euros spent about 20 referred to online sales, while in Europe the penetration rate was about 13%.

In 2021, it is estimated that the value of online purchases (products and services) will reach 3.900 billion euros with a growth rate of 20% compared to 2020. The market is characterized by contrasting dynamism: on the one hand there are services that, although they have returned to grow in 2021, they have not yet reached pre-pandemic levels, likely due to strong constraints related to international mobility; on the products front, online channel penetration has increased globally. As before, considering the three main markets:

- in China, eCommerce reaches a value of 1.460 billion euros in 2021 with a penetration rate of 28%;
- US achieves a penetration rate of 22% thanks to the value of eCommerce equal to 747 billion euros;

- finally, regarding the European market, eCommerce reaches 736 billion euros with a penetration rate of 16%.

2.2.2 Italian scenario

The focus shifts then on the Retail situation in Italy. As support to this section, data collected by *Osservatorio Innovazione Digitale nel Retail – School of Management – Politecnico di Milano* and *Osservatorio eCommerce B2C – School of Management – Politecnico di Milano* will be used.

The Italian commercial structure has peculiar characteristics compared to other European countries. The Italian Retail market is more widespread compared to the European average: the density of companies per square kilometre in Italy is 4.7 against 1.7 in France and 2.4 both in Germany and UK.

Despite the high rate of capillarity, these companies are mainly small businesses with few employees and modest turnover. This is demonstrated considering that the average number of employees per business in Italy is 3 and the average turnover is about 0.3 million euros; on the contrary, in Germany on average each business has 10 employees and generates about 0.8 million euros of turnover per year.

This high fragmentation is an obstacle to innovation, as investments are reduced: in 2019 indeed, investments of top Italian retailers in digital solutions amounted to 1.5% of turnover, causing a slowdown in the digital transformation process that Retail is undergoing worldwide.

As for the distribution on the territory, there are great differences along the peninsula and the number of shops increases shifting from the North to the South. Precisely, in the North there are about 14 shops and restaurants for every 1.000 inhabitants; in the Centre there are 17 shops for every 1.000 inhabitants; in the South and Islands there are 19 shops for every 1.000 inhabitants. At the same time, however, the average size of stores decreases from 104 square meters in the North to 83 square meters in the Centre and 65 square meters in the South and Islands.

The specialized Retail sector, according to a study by The European House - Ambrosetti, pre-Covid-19 pandemic recorded an economic weight of 430 billion euros in turnover and 98.6 billion euros in terms of value added. Moreover, the value chain of Retail, end-to-end, weighed 13% on the Italian GDP (187.8 billion euros). In 2020 the sector recorded a contraction reaching 381 billion euros in terms of turnover and 91.1 billion euros in terms of value added.

Other interesting insights about the Italian scenario can be collected from aforementioned report *Global power of Retailing 2021* by Deloitte. Specifically, among Italian companies belonging to the Top 250 retailers there are only two companies in the Top 100 positions: Conad occupies the 70th position and Coop Italia holds the 73rd place. The next ones in the ranking are Esselunga S.p.A (118th), EssilorLuxottica (157th) and Gruppo Eurospin (163rd).

Finally, considering consumption levels and comparing the Italian situation with the rest of the world, as reported by a research of *Osservatorio Innovazione Digitale nel Retail (School of Management – Politecnico di Milano)* during 2018-2019 – prior to Covid-19 – consumption in the most mature economies worldwide grew with a rate of about 3%, while eCommerce recorded a double-digit growth (+16%). Italy presented a slightly more unfavourable situation with an increase in consumption of 1.7% but with an increase in the eCommerce channel of 21%. This last data is linked to the fact that the maturity level of eCommerce in Italy was lower than in other countries, since the penetration rate – defined as the ratio between online sales and total sales – of online sales was about 6% with respect to 12% in Germany and 17% in UK.

In general, focusing on the eCommerce sector and considering data coming from *Osservatorio eCommerce B2c (School of Management – Politecnico di Milano)*, Italy has closed 2020 with a positive balance registering a growth of 3% and a total value of 32.5 billion euros. In 2021 the value of purchases made online reaches 39.4 billion euros with a growth of 21% compared to 2020.

All sectors related to the sale of products are recording a positive growth rate. In particular both in 2020 and 2021, the sector that has recorded the most remarkable growth is food and grocery (+70% in 2020 and +38% in 2021). Shipments of eCommerce orders also saw a 33% increase to 448 million packages in 2020. Also in this case, at the Italian level inequalities emerge: the most significant share of orders compared to population distribution is recorded in the North. Indeed, 46% of the Italian population resides in the North and generates 54% of eCommerce flows compared to the South where, although 32% of the population resides, eCommerce flows are equal to 21%.

Analyzing from which touchpoints eCommerce orders are made, it emerges that the smartphone is the preferred device by Italian customers: 55% of eCommerce products' purchases start from the mobile channel. In particular, the incidence of the smartphone reaches 66% of purchases in the food and grocery sector (meaning that for every 100 euros spent, 66 are from mobile devices), followed by publishing, furniture and home living

(61%), electronics (60%) and finally clothing (58%). In absolute value the eCommerce B2c from smartphone exceeds 21,7 billion euros in 2021 with an increment of 22% with respect to 2020.

Finally, by jointly analyzing the two channels seen so far, there is a growing need for traditional retailers to enable integration between online and physical store through the adoption of omnichannel models: retailers adopt indeed an average of 3 omnichannel models. Thanks to the Census of the 300 largest Italian retailers, conducted in collaboration with *Osservatorio Innovazione Digitale nel Retail* and *Osservatorio eCommerce B2c (School of Management – Politecnico di Milano)*, it has been possible to analyze in detail which are the main initiatives introduced and understand the main differences between the various product sectors. In the next chapters, a specific section will be dedicated to the Census.

For now it is worth underlying that, considering companies with eCommerce website, 57% of them offer the click&collect service while the 27% has activated book&collect initiative. The main difference between the two models lies in the way in which the payment happens: online in the first case, in-store in the second one. Considering the sectors, food records a rate of click&collect and book&collect adoption of 70% and 67% respectively, while 50% of companies operating in the clothing sector offer click&collect services against a 12% of book&collect.

Additionally, 37% of the overall retailers analyzed offer the possibility to return in-store products purchased online and 29% allow customers to remotely view the availability of products in store.

2.2.3 Covid-19 impact

On 31 December 2019, the Chinese health authorities reported the first cases of abnormal pneumonia in the city of Wuhan, the most populous city in eastern China, a centre of important trade exchanges.

On January 9, the Chinese authorities communicated to the local media the origin of the virus and the news was disclosed by WHO the next day. Within a few weeks Wuhan and other important Chinese cities began to isolate themselves and the first Covid-19 cases started to spread in other foreign countries; this led the WHO to declare the health emergency on 30 January and, subsequently, to declare the pandemic on 11 March.

Countries, starting from that date although at different times, have taken some steps to try to reduce the spread of Covid-19 allowing citizens to leave the house only for proven reasons of need – as to do grocery shopping,

for work, for the purchase of drugs or for other health reasons. The restrictions imposed also included the closure of the so called “non-essential” Retail shops.

The resulting impact is clearly visible from the figure below: in March and April 2020, the Retail trade volume recorded a drop of 9.2 % and 11.1 %, respectively. Not all sectors, anyway, have been affected by restrictions in the same way. The main difference is evident between food and non-food retailers: the former did not record strongly declining sales as they were considered essential activities and, therefore, not forced to close their doors. Throughout the year, other restrictions have been imposed because of the trend of the pandemic, causing great impact on sales as confirmed by the fluctuations visible from the Figure 2.6 which focuses on the European situation.

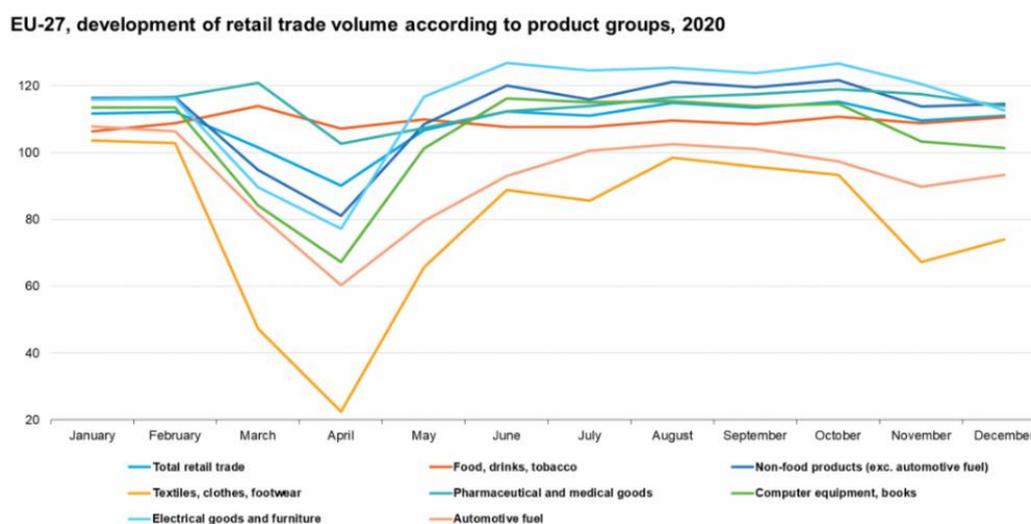


Figure 2.6 EU, development of Retail trade volume, 2020 Source: Eurostat

Government impositions requiring the population to quarantine have caused a strong change in consumers behaviour: in particular, the obligation to stay at home and not being able to go to stores has dramatically increased online sales even among those who were previously unfamiliar to the eCommerce world.

According to eMarketer's latest estimates, global sales through online platforms in 2020 grew by 27.6% compared to the previous year.

Focusing on the Italian situation, according to the researches done by *Osservatorio Innovazione Digitale nel Retail (School of Management – Politecnico di Milano)*, approximately 57% of the shops have closed the doors and this has involved a significant reduction of stores' capillarity during lockdown period: the number of shops per 1.000 inhabitants decreased by 63% in the North, 60% in the Centre and 50% in the South. The prolonged

closure of stores, indeed, led to a drop in revenues: in Italy in 2020, total Retail sales – considering products' segments only – decreased by 12.6%, affecting especially non-food sectors. Retailers also had to deal with increased costs (sanitizing of spaces and implementing solutions to secure employees and customers) which have further eroded margins.

The extended closure of stores along with the emergence of consumers' new fears and needs has boosted the growth of the online channels. In 2020 online purchases totalled a value of 32.5 billion euros (+4% compared to 2019), but they were characterized by contrasting dynamics. On the one hand, product purchases reached 26 billion euros (+45% with respect to 2019), with 388 million orders and an average receipt of about 60€: this represents the highest increase ever. On the other hand, purchases of services fell to 6.5 billion euros (-52%), with only 38 million orders and an average receipt of about 187 euros: this strong reduction is mainly due to the crisis that hit the Tourism and Transport sector.

The same trend in the eCommerce sector is visible also in 2021. On the one hand, product purchases continue to record positive growth (+18% with respect to 2020) although with lower rates than 2020 (+45% with respect to 2019) reaching a value of 30.5 billion euros. In 2021 there were 578 million shipments (+20% compared to 2020) and the average receipt is around 60€. On the other hand, services segment which suffered a serious crisis last year with a 52% decline, especially due to the Tourism and Transportation sector, recorded a slightly recovery in 2021 reaching a value of 8.9 billion euros (+36% with respect to 2020). The service sector generates 44 million orders with an average receipt of 200€. Despite the recovery, it has not yet returned to pre-pandemic levels (2019) in which online purchases of services were worth 13.5 billion euros.

Considering the impact of the different sectors on the growth of product purchases, Food and Grocery continues to be the leading sector with a growth of 38% and a contribution in value of 1.1 billion euros, followed by the clothing and accessories sector with a growth of 23% and a contribution in value of 1 billion euros.

Osservatorio eCommerce B2c (School of Management - Politecnico di Milano) estimated the value of online purchases in the absence of the pandemic. For the assessment, the trend between 2016 and 2019 was taken into account and the same growth rate was applied for 2020 and 2021. The value of the eCommerce purchases obtained in this way would have been equal to 36.6 billion euros in 2020 and to 42.9 billion euros in 2021. The gap between the potential and real situation is probably due to the service sector and in particular to the crisis in Tourism caused by the strong restriction on mobility. In fact, by analysing products and services separately,

the service sector would have closed with 6.8 billion euros more in 2021 while the product sector would have closed with 3.3 billion euros less.

Therefore, Covid-19 pandemic has had a double impact on Italy's B2c eCommerce evolution. From one side, contrary to expectations, it has slowed down the growth of the market, except for some product sectors – such as Food and Grocery – where it has registered a consistent acceleration. On the other side, it has changed the balance between online and offline markets, forcing the offer side to accelerate the digitization process and pushing consumers to a more frequent use of online channels.

After a numerical overview of the effects of the pandemic, the next step is to analyse the changes that have occurred.

The economic crisis resulting from the health emergency has brought some retailers closer to the cessation of activities; there have also been important phenomena of acquisition and aggregation between commercial groups and cases of integration between retailers and dotcoms. However, in general, the temporary closure of a significant number of stores and the rise of new consumers' habits, have changed the balance between the various channels. Indeed, the awareness of the importance of investing in their own eCommerce project has matured among traditional operators; on the contrary, retailers already present online have worked hard to increase operational capacity, improve the service level, and extend their capillarity. A lot of work has been done to facilitate new interaction models based on the integration of online and offline experiences. The current plight, in addition to a growth of online demand, has generated new needs for physical shopping – pushing retailers to make the in-store experience easier and safer – and has enabled a diversification of sales formats consolidating a return to proximity.

In the next section, the main changes brought by Covid-19 pandemic are analysed one by one.

I. Activation of online sales channels or new partnerships with delivery platforms

UNCTAD's "COVID 19 and E-Commerce" survey on approximately 3.700 consumers in nine emerging and developed economies, investigated changes in customers' behaviours and attitudes due to pandemic. It reports that more than half of the survey's respondents shop online more frequently since Covid-19 outbreak. Results are reported in the Figure 2.7.

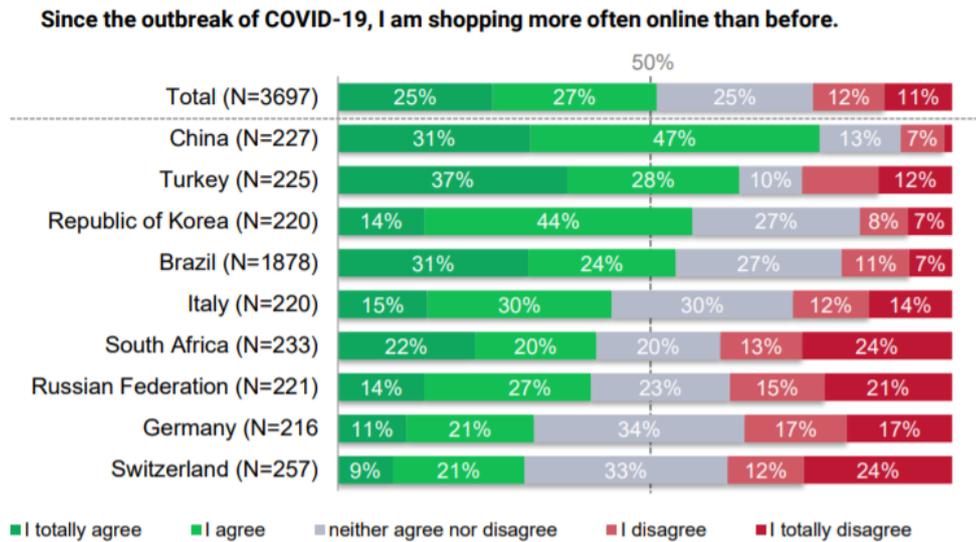


Figure 2.7 Effects of covid-19 on online shopping, source: UNCTAD

To accommodate this trend and to offset for the losses from physical stores, many retailers had to open their own online channel. This is also evidenced by the data collected from the Census of the 300 Top Italian retailers mentioned earlier. From the analysis it emerges that the percentage of companies relying on an eCommerce website in 2019 was of 79%; in 2020 the percentage became equal to 82% and in 2021 is growing until 85%.

An example of what has just been explained is represented by Land of Fashion, the Italian network of the 5 outlet villages belonging to the American group Blackstone. The retailer, fed from customers' partial impossibility to visits physical points of sale and from the increase of the eCommerce transactions, starting from November 2020 has announced a strategic plan in 3 stages with the objective to build to an eCommerce portal the following Spring. The brand initially launched a platform with a virtual closet of 200 items which could be chosen, booked and then collected and paid in the store.

The project then extended to the realization of a marketplace that integrates the physical dimension with the digital one. This allows customers to access to the complete product catalogue and to make their purchases from home; for the delivery mode, the choice is between the traditional home delivery service and click&collect and book&collect options.

II. New sales modes and stronger customer relationships

As mentioned before, the pandemic has provided a great boost to innovations. Many retailers have introduced new ways of selling to maintain a strong relationship with customers and to offer a pleasant shopping experience

even at distance. Innovative projects include sessions of live stream shopping as well as shopping through video call or WhatsApp.

The live stream option is a new shopping experience already growing in 2019, especially in Asia. The formula is simple: a live streaming event with experts presenting the products is organized and, in the meantime, people attending the presentation from home can conclude the purchase with just few clicks.

In Italy, to grasp and embrace the new trend, Motivi, a company of Miroglio Group, in June 2020 launched a live stream shopping platform based on artificial intelligence technologies: through it, in-store assistants can propose garments and interact with customers in real time. During the live event, products, as well as potential outfits are shown and worn to better understand the fitting; clickable product tabs appear on screen in real time and customers can also ask live questions via chat to get information on sizes, colours and fit.

Therefore, potential buyers only have to select the items and add them to the cart to proceed with the payment on the brand's traditional eCommerce site. The platform also allows to convert users' behaviours into insights: thanks to both machine learning solutions and real-time analytics, sales assistants have a great amount of information available to anticipate the needs and expectations of the public.

Other sales modes include calls, video calls and shopping via WhatsApp or live chat. These initiatives include "Rinascente On Demand", a personal shopper service accessible via WhatsApp or email, which ensures that selected products in the Milan store are reserved, and then paid by directly from home by using the link provided.

Kasanova offers the Chat Assistant service: a WhatsApp video call directly from home, allowing customers to browse through the shelves of stores with the help and suggestions of a personal shopper.

Among the luxury brands, the case of Gucci is suitable. The Florentine Maison launched "Gucci Live" in June 2020: customers browsing products' pages on the brand's website can click on the appropriate button to start a video call with a consultant which will explain items' details.

III. Investments to reinforce technologies and processes

During the pandemic, consumer purchasing habits changed. According to an article published by Total Retail on September 2020, 89% of consumers is afraid to go to the physical stores because of the risk of being too

close to other people. To counteract customers' worries, many retailers have both improved omnichannel models and introduced solutions to reduce entry quotas.

With regard to the first point, according to a study carried out by eMarketer and reported by Statista, Retail sales generated by click&collect in US were equal to \$36.48 billion in 2019, they have increased of almost 40% of the total to reach \$58.52 billion in 2020 and – according to estimates – will reach a value of \$74.24 billion in 2022.⁶

Also in Italy the trend is increasing: an article of “Il Sole 24 Ore” reports how the sales shares from click&collect were 8.3% in 2019, they exceeded 15% during the lockdown and were just below 13% in the next phase.

Regarding the second point mentioned above, digital has taken on a major role to make the shopping experience safer and simpler: many retailers have invested in solutions to secure the store and ensure compliance with anti-contagion regulations. Between these systems emerge solutions to book the visit in store from remote; these, until recently, were poorly developed but during lockdown period recorded a surge of popularity. Systems for the virtual management of queues, as well as systems of smart occupancy to control real time flows of incoming and outgoing visitors have been frequently adopted since stores' reopening. Other initiatives, finally, regard the extension of opening hours. In general, all these innovations have offered brands the possibility to provide products to customers respecting the limitations imposed.

A case to mention in this regard is Elena Mirò, brand of the Miroglio group. At the moment of reopening after the first lockdown, the boutiques were divided into two or three mini shops to avoid contact between clients. In addition, it was possible to book an appointment before going to the store; to conclude, the opening hours had been extended also removing launch break.

IV. New role of POS: Stores turned into mini-fulfilment centres and pickup points

Following the closures and the introduction of new omnichannel models there has been a review of the store's role. In particular, frequently there has been a conversion of the store into a centre of preparation and fulfilment of orders coming from the online channel, resulting in an evolution or modification of sales assistants' role in a job enlargement perspective.

⁶ <https://www.statista.com/statistics/1132001/click-and-collect-retail-sales-us/>

H&M last year reorganized the whole of points of sale network: from traditional physical stores, the shops became logistics hubs to support digital channels. Since then, stores indeed can be used by customers to place eCommerce orders and for the collection and return of purchases made online.

Even two American giants such as Whole Foods and Kroger have transformed some of their stores in centres dedicated to preparation and fulfilment of orders coming from the online channel, with the aim of increasing the availability of delivery modes and to implement security measures and social distancing.

3. LITERATURE ANALYSIS INTRODUCTION

3.1 Introduction and scope of the scientific literature review

The objective of the scientific analysis is to comprehend, according to an academic viewpoint, how omnicanality is changing and shaping the Retail sector in terms of innovative initiatives, as well as to understand how retailers are facing the shift from single and multichannel perspective to an omnichannel one.

The integration of point of sales with the digital channels, the creation of new sales models, the changes of physical stores' dimensions and capillarity, the reorganization of order fulfillment activities and facilities and the integrated deployment of data collected, are among the changes mainly highlighted in the papers analyzed.

The starting point is the belief of the majority of academics which sustain that, in today's digital and connected world, only a hybrid shopping journey is really able to guarantee a fluid and rewarding customer experience.

Many articles, as consequence, have been written with the aim of providing a framework over different topics – i.e., omnichannel models, in-store changes and logistics implications among the most cited – for planning and implementing an effective omnichannel program able to last in a fast-evolving environment.

Additionally, due to Covid-19 pandemic situation, online and offline channels convergence – previously seen as a threat to each other – and their strict cooperation became the only way to grant business' continuity in a situation of complete point of sales' closure for most Retail sectors. As mentioned before, indeed, is important to notice how, for many retailers, the entrance in the online business or its rapid evolution became also a way to start competing with pure online players.

As consequence, retailers' interest in digital tools, processes and practices, combined with the possibility to become competitive in complementary channels to the physical ones, increased the interest of academics and researchers that saw the omnichannel strategy as the future of Retail business in a newly shaped environment.

The research and the following analysis, as disclosed in the Figure 3.1, have been organized in three macro-categories of study – each one further divided – to progressively address all the omnichannel-related areas of interest:

- First the *strategic variables*, referring to all the aspects a retailer should consider when approaching an omnichannel strategy.

- Then the *implementation*, which comprehends the changes, mainly front-end ones, needed to offer customers a fluid shopping journey on different sales channels.
- Finally, the *implications* on the current way of doing business, meaning all the efforts and aspects that retailers need to adapt when implementing an omnichannel strategy.

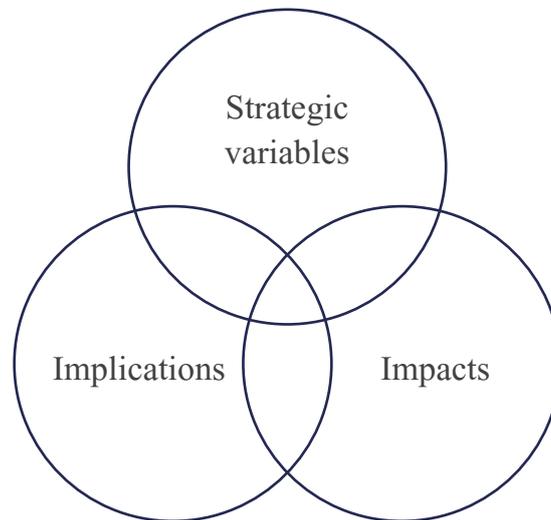


Figure 3.1 Focuses of the literature analysis

The main *barriers* to the omnichannel transition have been analyzed separately, at the end, considering the viewpoint of both customers and merchants. Those factors have been addressed in a distinct section since they do not analyze how the omnichannel strategy could be implemented but, on the contrary, they represent what could hinder its activation.

Given the complexity of the topic under analysis and the implications it brings in all areas of a retailer's value chain, each of these three categories is considered as profoundly intertwined with the others, as will be clarified later.

3.2 *Scientific paper search, screening, and classification*

To work in a structured way, a framework was adopted for the selection, categorization, and analysis of the scientific papers. The use of an Excel file indeed has been key to guarantee a full understanding of the articles; the same framework will be used also for the non-scientific literature. As new evidence and recurring topics were identified, the three categories previously presented were iteratively updated and expanded in sub-areas to reach the desired level of detail.

The process used for the literature analysis is represented in the Figure 3.2 below.

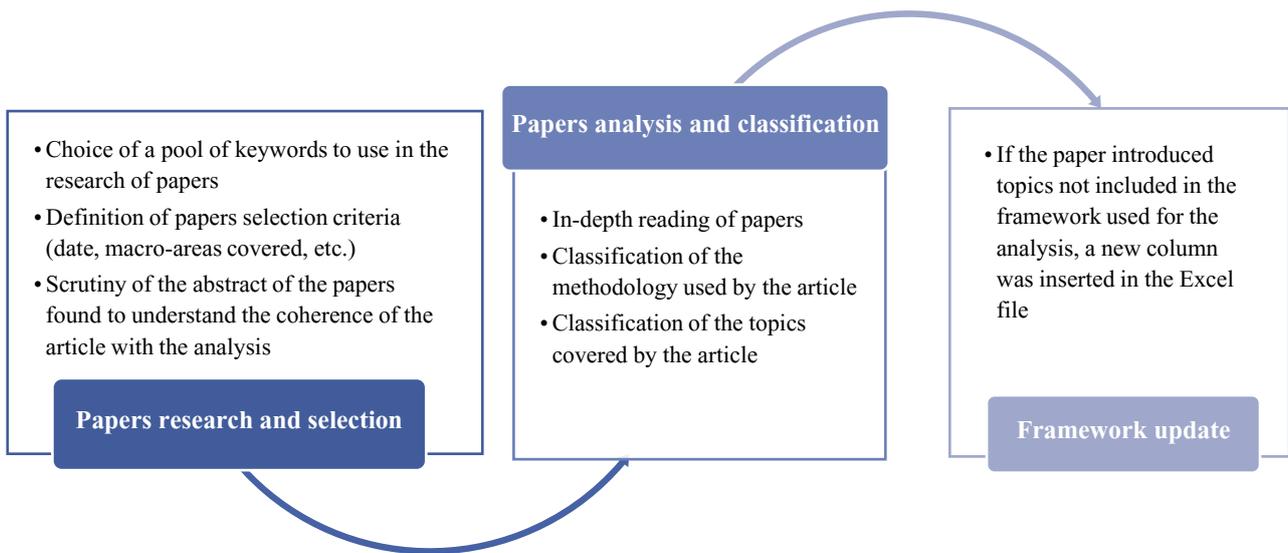


Figure 3.2 Literature analysis process

The first step – after the initial draft of the framework – has been to decide the keywords to use in the papers’ search. The research has been conducted in a broad way, to respect the complexity of topics as Retail, eCommerce, omnichannel and Digital Innovation and to avoid losing some themes that, even if indirectly, are connected to them.

The search engines used were the academic library database of Politecnico di Milano and Google Scholar; the most searched words for the analysis within these archives were:

- Omnichannel Retail
- Digital Innovation in Retail
- Retail data strategy
- Omnichannel supply chain
- Omnichannel logistics
- Omnichannel operations
- Store digitalization
- Omnichannel technologies
- Covid-19 in Retail
- Omnichannel customer experience

- Omnichannel organization
- Omnichannel barriers

The use of different keywords has allowed to conduct an analysis considering different points of view: for example, *technologies'* theme can be evaluated from the point of view of retailers but it can also be analysed considering the experience from customers perspective.

Regarding the reference criteria when selecting the academic articles:

- Papers were first selected according to the year of publication. Precisely, only articles published in the last 5 years have been included to prioritize the most up-to-date analysis given the speed at which the Retail sector is developing. The Figure 3.3 represents the distribution of the articles per year.

Scientific papers classification according to the year of publication

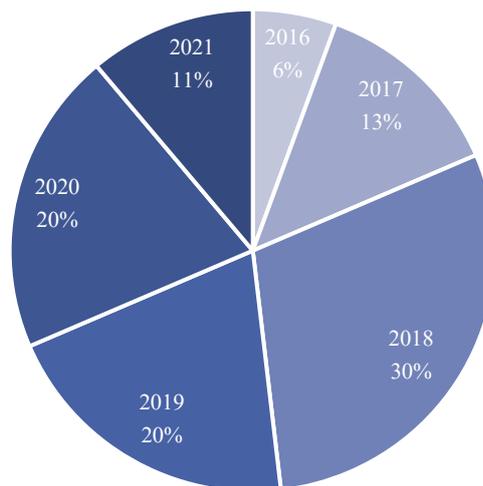


Figure 3.3 Scientific papers classification according to the year of publication (base: 54 scientific papers)

- At least one paper addressing Retail with Covid-related considerations should be included. Covid-19 has changed the Retail scenario in a disruptive way: the need to study how different sectors reacted to it through digital innovation and an omnichannel strategy is fundamental for understanding which will be the upcoming trends in Retail.
- Each paper should refer to at least 2 out of the 3 macro-categories to highlight since the beginning in the interrelations among the topics.

The main scientific sources and the number of selected articles coming from each of them, are listed in Figure 3.4 below.

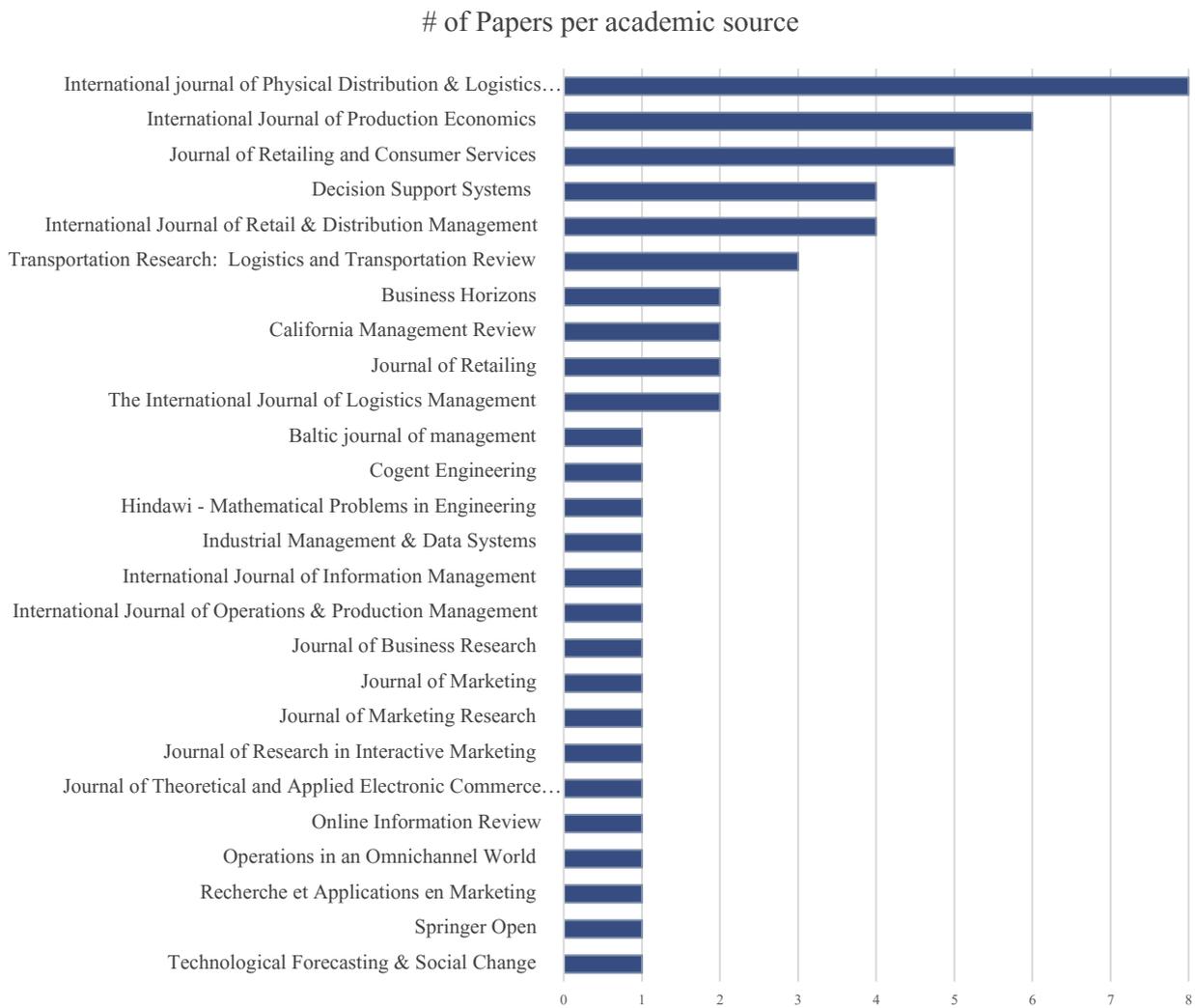


Figure 3.4 Scientific papers classification according to the source

Once the articles were selected, they were added to the frame and read carefully. The classification took place at the same time as the reading and it was done in parallel on 2 copies of the same Excel file:

- One was used just to mark which topics were mentioned in the papers and it was necessary for calculating the % of interest in one theme.
- The other was, instead, a reference sheet to write additional information derived from the texts, in order to facilitate the understanding of each paper and to have a synthesis of its meaningful sentences to be used in the following phases.

A total of 54 scientific articles have been read and analysed. For each of them, the first stages of the classification concern the reference sector, the methodology used – divided between qualitative and quantitative – and the macro-categories treated in the article.

The detailed analysis of the different dimensions that constructs the whole framework, composed of a total of 139 columns, will be deeply discussed in the following sections.

3.2.1 Sectors

Regarding the sectors covered by the papers, the majority of the articles (79%) do not focus on a specific industry, while the remaining ones refer to particular cases.

For example, the document *Drivers and Barriers of Omnichannel Retail in China: A Case Study of the Fashion and Apparel Industry* by Ying Ye, Kwok Hung Lau, and Leon Kok Yang Teo, conducts an analysis of the drivers and barriers to omnichannel Retail with a focus on fashion apparel industry in China.

Another example is represented by *Omnichannel supply chain operations for luxury products with conspicuous consumers* by Ying Wei, Feng Li; the article, in this case, focuses on the world of luxury and describes how the behaviour of customers influences high-end firms' pricing and inventory decisions.

In general, after the “Generic” category, the sectors most frequently analysed are clothing, electronics and food, sometimes even combined with each other. One example is the *paper Blurring the Lines between Physical and Digital Spaces: Business Model Innovation in Retailing*, in which retailers operating in the clothing and electronics industries are examined together.

The Figure 3.5 reports sectors distributions according to the scientific papers.

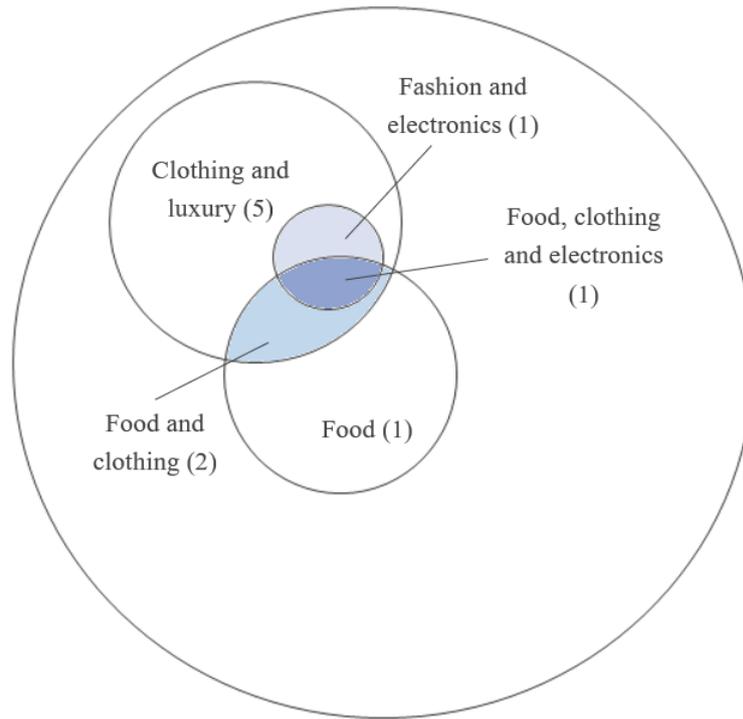


Figure 3.5 Sectors addressed in the scientific papers

3.2.2 Macro categories analysis

As already mentioned before, the three macro-categories into which the framework for analysis has been divided are: *strategic variables, implementation and implications*. With very few exceptions, all the papers cover the 3 areas of investigation, so the third criterion used for the papers' choice has been widely respected. This testifies that the factors characterizing omnichannel are essential to each other: for instance, it is not possible to talk about strategic variables without considering the impacts that these will have on the organizational restructuring.

The papers covering all three macro-categories are 49, corresponding to 91% are reported in the Table 3.1.

TITLE	SOURCE	YEAR	AUTHORS	INDUSTRY
“Ship-from-store” strategy in platform Retailing	Transportation Research: Logistics and Transportation Review	2021	Yi He, Qingyun Xu, Zhen Shao	Generic
A data-driven approach to adaptive synchronization of demand and supply in omnichannel Retail supply chains	International Journal of Information Management	2021	Marina Meireles Pereira, Enzo Morosini Frazzon	Generic
A quantitative performance management framework for assessing omnichannel Retail supply chains	Journal of Retailing and Consumer Services	2019	Burcu Adivar, Işık Özge YumurtacıHüseyinoğlu, Martin Christopher	Generic

Adapting warehouse operations and design to omnichannel logistics	International journal of Physical Distribution & Logistics Management	2018	Joakim Hans Kembro, Andreas Norrman and Ebba Eriksso	Generic
An analysis of factors influencing omnichannel Retailing adoption using ISM-DEMATEL approach: an Indian perspective	International Journal of Retail & Distribution Management	2020	Ruchi Mishra	Clothing
Best Performance Frontiers for Buy-Online-Pickup-in Store order fulfilment	International Journal of Production Economics	2019	Bart L. MacCarthy, Lina Zhang, Luc Muyldermans	General
Blurring the Lines between Physical and Digital Spaces: Business Model Innovation in Retailing	California Management Review	2020	Milan Jocevski	Clothing and electronics
Build touchpoints and they will come: transitioning to omnichannel Retailing	International journal of Physical Distribution & Logistics Management	2018	Roy Larke, Mark Kilgour, Huw O'Connor	Generic
Business logistics models in omnichannel: a classification framework and empirical analysis	International journal of Physical Distribution & Logistics Management	2018	Gino Marchet, Marco Melacini, Sara Perotti, Monica Rasini and Elena Tappia	Generic
Configuring the Last-Mile in Business-to-Consumer E-Retailing	California Management Review	2018	Stanley Frederick W. T. Lim, Matthias Winkenbach	Generic
Customer's reaction to cross-channel integration in omnichannel Retailing: The mediating roles of Retailer uncertainty, identity attractiveness, and switching costs	Decision support systems	2017	Yang Li , Hefu Liu, Eric T.K. Lim, Jie Mein Goh, Feng Yang, Matthew K.O. Lee	Generic
Customers' tolerance for validation in omnichannel Retail stores. Enabling logistics and supply chain analytics	The International Journal of Logistics Management	2017	Hartmut Hoehle and John A. Aloysius, Frank Chan, Viswanath Venkatesh	Generic
Digital strategies for two-sided markets: A case study of shopping malls	Decision Support Systems	2018	Johan Frishammara, Javier Cenamor, Harald Cavalli-Björkman, Emma Hernelld, Johan Carlsson	Generic
Drivers and barriers of omnichannel Retailing in China: A case study of the fashion and apparel industry	International Journal of Retail & Distribution Management	2018	Ying Ye, Kwok Hung Lau and Leon Kok Yang Teo	Clothing
E-fulfilment and distribution in omnichannel Retailing: a systematic literature review	International journal of Physical Distribution & Logistics Management	2018	Marco Melacini, Sara Perotti, Monica Rasini and Elena Tappia	Food
Evolution of Retail formats: Past, present, and future	Journal of Retailing	2021	Dinesh K. Gauria, Rupinder P. Jindal, Brian Ratchford, Edward Foxd, Amit Bhatnagare, Aashish Pandey, Jonathan R. Navallo, John Fogarty, Stephen Carr, Eric Howerton	Generic

Examining customer channel selection intention in the omnichannel Retail environment	International Journal of Production Economics	2018	Xun Xua, Jonathan E. Jacksonb	Generic
Examining Retail business model transformation: a longitudinal study of the transition to omnichannel order fulfillment	International journal of Physical Distribution & Logistics Management	2020	Beth Davis-Sramek; Rafay Ishfaq; Brian J. Gibson; Cliff Defee	Generic
Examining the anatomy of last-mile distribution in e-commerce omnichannel Retailing: A supply network configuration approach	International Journal of Operations & Production Management	2017	Stanley Frederick W.T. Lim and Jagjit Singh Srari	Generic
Exploring omnichannel and network design in omni environment	Cogent Engineering	2017	Vinay Surendra Yadav, Sarsij Tripathi & A.R. Singh	Generic
Flatlined: Combatting the death of Retail stores	Business Horizons	2018	Barry Berman	Generic
From ambition to action: How to achieve integration in omnichannel?	Journal of Business Research	2020	Vahid Mirzabeik, Soroosh Sam Saghiri	Food and Clothing
Investigating the influential factors of return channel loyalty in omnichannel Retailing	International Journal of Production Economics	2019	Xun Xua, Jonathan E. Jackson	Generic
Logistics outsourcing in omnichannel Retail: State of practice and service recommendations	International journal of Physical Distribution & Logistics Management	2018	Heleen Buldeo Rai, Sara Verlinde, Cathy Macharis, Penelope Schoutteet and Lieselot Vanhaverbeke	Food, Clothing, electronics
Managing the effectiveness of e-commerce platforms in a pandemic	Journal of Retailing and Consumer Services	2021	Lobel Trong Thuy Tran	Generic
Multiperiod Dynamic Pricing and Inventory Control Decisions for an Omnichannel BOPS Retailer with Reference Price Effect	Hindawi - Mathematical Problems in Engineering	2021	Yuan Li	Generic
Multi-period price optimization problem for omnichannel retailers accounting for customer heterogeneity	International Journal of Production Economics	2019	Vishal Kumar Guptaa, Q.U. Tingb, Manoj Kumar Tiwari	Generic
Omnichannel Assortment Planning	Operations in an Omnichannel World	2017	Robert P. Rooderkerk, A. Gürhan Kök	Generic
Omnichannel business research: Opportunities and challenges	Decision Support Systems	2018	Yang Chen, Christy M.K. Cheung, Chee-Wee Tan	Generic
Omnichannel management in the new Retailing era: A systematic review and future research agenda	International Journal of Production Economics	2020	Ya-Jun Cai, Chris K.Y. Lo	Generic
Omnichannel research framework in the context of personal selling and sales management	Journal of Research in Interactive Marketing	2016	Shannon Cummins, James W. Peltier and Andrea Dixon	Generic
Omnichannel Retail operations with consumer returns and order cancellation	Transportation Research: Logistics and Transportation Review	2018	Juzhi Zhanga, Qingyun Xub, Yi He	Generic
Omnichannel supply chain operations for luxury products with conspicuous consumers	Transportation Research: Logistics and Transportation Review	2019	Ying Wei, Feng Li	Luxury

Optimal cross-channel return policy in dual-channel Retailing systems	International Journal of Production Economics	2019	Mohannad Radhi, Guoqing Zhang	Generic
Planning and implementing an effective omnichannel marketing program	International Journal of Retail & Distribution Management	2018	Barry Berman and Shawn Thelen	Generic
Retail logistics in the transition from multi-channel to omnichannel	International journal of Physical Distribution & Logistics Management	2016	Alexander Hübner, Johannes Wollenburg and Andreas Holzapfel	Generic
Satisfying consumers all around: a multidisciplinary view of omnichannel Retail	Industrial Management & Data Systems	2020	Juan Wang, Bowen Zheng, Hefu Liu	Generic
Service integration in omnichannel Retailing and its impact on customer experience	Journal of Retailing and Consumer Services	2020	Sara Quach, Mojtaba Barari, Dann Vit Moudrý, Ken Quach	Generic
Shopper-Facing Retail Technology: A Retailer Adoption Decision Framework Incorporating Shopper Attitudes and Privacy Concerns	Journal of Retailing	2017	J.Jeffrey Inman, HristinaNikolova	Generic
Solving the crisis of immediacy: How digital technology can transform the customer experience	Business Horizons	2016	Salvatore Parise, Patricia J.Guinan, Ron Kafka	Generic
Store of the future Towards a (re)invention and (re)imagination of physical store space in an omnichannel context	Journal of Retailing and Consumer Services	2020	Bethan Alexander, Marta Blazquez Cano	Generic
Technology adoption for the integration of online–offline purchasing	International Journal of Retail & Distribution Management	2019	Marco Savastano, Francesco Bellini, Fabrizio D’Ascenzo, Marco de Marco	Food and Clothing
The future of omnichannel Retail: A four-stage Delphi study	Technological Forecasting & Social Change	2018	Frederik von Briel	Generic
The role of omnichannel tendency in digital information processing	Online Information Review	2020	Paula Rodriguez-Torrico, Sonia San-Martin, Rebeca San José Cabezudo	Generic
The Value of Rapid Delivery in Omnichannel Retailing	Journal of Marketing Research	2019	Marshall L. Fisher, Santiago Gallino, and Joseph Jiaqi Xu	Clothing
Top online luxury apparel and accessories retailers: what are they doing right?	Springer Open	2020	Wenzhao Mu, SharronJ.Lennon and Wenqiao Liu	Luxury
Unravelling Consumer Responses to Omnichannel Approach	Journal of Theoretical and Applied Electronic Commerce Research	2019	Won-jun Lee	Generic
What kind of in-store smart Retailing for an omnichannel real-life experience?	Recherche et Applications en Marketing	2018	Christophe Bèzes	Generic
Who is innovating? An exploratory research of digital technologies diffusion in Retail industry	Journal of Retailing and Consumer Services	2019	Eleonora Pantano, Virginia Vannucci	Generic

Table 3.1 Scientific papers addressing all three macro categories

The papers covering two out of three macro-categories are 5, corresponding to 9%.

More precisely just 1 paper covers *strategic variables and implementation* (Table 3.2)

TITLE	SOURCE	YEAR	AUTHORS	INDUSTRY
Channel Integration Quality, Perceived Fluency and Omnichannel Service Usage: The Moderating Roles of Internal and External Usage Experience	Decision Support Systems	2018	Xiao-Liang Shen, Yang-Jun Li, Yongqiang Sunb, NanWang	Generic

Table 3.2 Scientific papers addressing strategic variables and implementation

Another paper instead covers *strategic variables and implications* macro-categories (Table 3.3)

TITLE	SOURCE	YEAR	AUTHORS	INDUSTRY
Informational Challenges in Omnichannel Marketing: Remedies and Future Research	Journal of Marketing	2021	Tony Haitao Cui, Anindya Ghose, Hanna Halaburda, Raghuram Iyengar, Koen Pauwels, S. Sriram, Catherine Tucker and Sriraman Enkataraman	Generic

Table 3.3 Scientific paper addressing strategic variables and implications

Finally, the 3 papers reported below cover *implementation and implications* categories (Table 3.4)

TITLE	SOURCE	YEAR	AUTHORS	INDUSTRY
Omnichannel fulfilment strategies: defining the concept and building an agenda for future inquiry	The International Journal of Logistics Management	2019	Daniel Taylor, Sebastian Brockhaus, A. Michael Knemeyer, Paul Murphy	Generic
Which future path to pick? A contingency approach to omnichannel warehouse configuration	International journal of Physical Distribution & Logistics Management	2020	Joakim Hans Kembro and Andreas Norrman	Generic
Digitalization in Retailing: multi-sided platforms as drivers of industry transformation	Baltic journal of management	2017	Mikko Hänninen, Anssi Smedlund and Lasse Mitronen	Generic

Table 3.4 Scientific papers addressing implementation and implications

To conclude, considering the barriers section, 31% of the papers above reported highlighted the existence of some obstacles in the transition towards omnichannel.

3.2.3 Methodology

The last division of the first part, before the detailed analysis of each dimension, refers to the nature of the methodology used in the papers. At the macro level, a distinction was made between qualitative and quantitative

analysis. Although the majority of the publications use qualitative research methods, the inclusion of both types allows obtaining capillary and detailed results. In particular, 22 articles – corresponding to 41% – use quantitative methods, while the remaining 32 articles (59%) performed qualitative analysis as can be seen in the Figure 3.6.

Methodology allocation of scientific papers

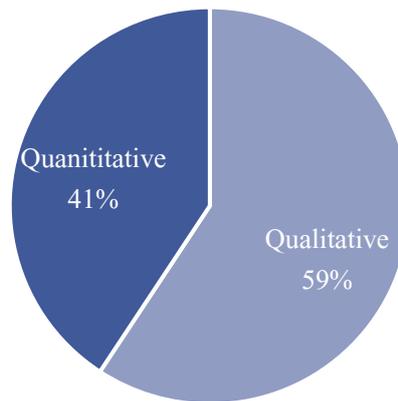


Figure 3.6 Methodology allocation (base: 54 scientific papers)

The Figure 3.7 below represents the framework adopted for the methodological section.

METHODOLOGY							
QUANTITATIVE			QUALITATIVE				Theory /model adopted
Survey	Experiment	Mathematical or statistical analysis	Case study	Focus group or interview	Literature review	Descriptive	

Figure 3.7 Excel framework for the methodological analysis

Starting with quantitative analysis methodologies, these may include: *survey, experiment/simulation and mathematical or statistical analysis*. Quantitative analysis involves the collection of great amounts of numerical data. These data are then statistically analysed and processed to test hypotheses or shed light on new topics. This methodology makes possible to collect objective data and, thus, to obtain a reliable overview of certain phenomena. In the graph below, is summarized the distribution of papers using this method.

As it can be seen in the Figure 3.8, the survey is the most widely used and allows to collect direct data from merchants or customers as well as to obtain information on trends, habits and barriers.

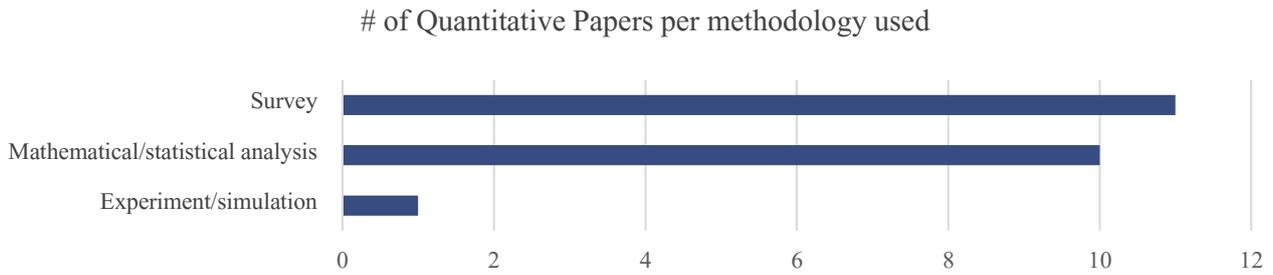


Figure 3.8 Quantitative papers by methodology used

Qualitative methodologies include *case studies, focus groups or interviews, literature reviews and descriptive studies*. Qualitative techniques are about describing a specific theme or issue rather than measuring it. A qualitative analysis, although less structured, aims to deepen the topic through questions; on the one hand, this provides a deeper understanding of the research topics, but on the other it makes it more difficult to precisely analyse the findings.

The Figure 3.9 clearly shows which techniques are used by the 32 scientific articles which adopt a qualitative approach.

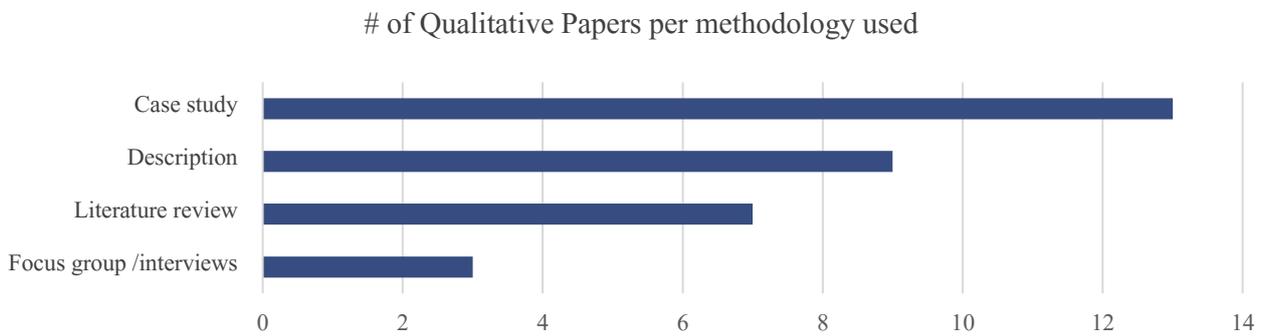


Figure 3.9: Qualitative papers by methodology used

4. SCIENTIFIC LITERATURE ANALYSIS

In this chapter, the subdivisions of the 3 areas and their main outcomes are analyzed one by one. The idea is to present the most significant results per dimension in order to provide a comprehensive overview of the omnichannel paradigm from an academic perspective.

4.1 Strategic variables

The Figure 4.1 below represents the extract of the Excel framework relative to the strategic variables dimension.

STRATEGIC VARIABLES			
STRATEGIC OBJECTIVES			STRATEGIC CHANNELS MANAGEMENT
BRAND BENEFITS	ECONOMIC BENEFITS	CUSTOMER BENEFITS	
Market extension (time and space)	Increase of demand	Enhanced customer experience	Assortment management (product range & variety) Price management Marketing management Loyalty plans management Service level management Personnel management (shared resourced) Information availability (cross channel visibility) Data tracked (security/privacy) Delivery times (priority strategy) Fulfillment structure conversion Investment / implementation costs Revenues allocation (online/offline sales) Introduction of new KPIs to monitor OC
Increase traffic (catch customers)	Increase profitability	More autonomous in-store experience	
Brand awareness (customer acquisition)	Up and cross selling	Better order visibility	
Brand loyalty (improve retention)	Lower returns rate/cost		

Figure 4.1 Excel framework for the strategic variables category

The first of the three macro-categories analysed includes strategic variables. More specifically, it has been broken down into two sub-sections: *strategic objectives*, which encompasses both benefits and achievable goals by retailers from an economic and brand perspective, as well as the advantages that an omnichannel experience brings to customers; *strategic channels' management* which considers all the strategic decisions that retailers need to undertake in an omnichannel optic.

4.1.1 Strategic objectives

Brand benefits

Starting from the first group, the brand can be seen:

- from a financial point of view, highlighting the value of the brand as a corporate asset;
- from a marketing-oriented point of view, defined as the heritage of the image that a brand has been able to build over time.

In the framework, regarding *brand benefits*, 4 aspects have been identified. Each one progressively introduces an additional level of complexity for a retailer which has to build or reinforce the relationship with - respectively - potential or existing customers.

First, the possibility to expand the market is often seen as one of the main reasons why retailers should adopt an omnichannel approach. As much research shows, including that of Juzhi Zhanga, Qingyun Xub, Yi He (*Omnichannel Retail operations with consumer returns and order cancellation*), when a retailer decides to include a new online channel, it can reach a previously unserved market, expanding its business both spatially - serving new segments - and over time - being the online channels available 24/7 differently from offline ones.

Second, using multiple touch points to engage with customers leads to increased traffic on the retailer's online and offline channels.

In this context, building brand awareness enables retailers to acquire new customers and this concept is positively related to the number of sales and communication channels a retailer uses (i.e., social media, websites, points of sale). Indeed, a potential customer is usually more interested in a brand's offering when he finds it in the channel that he normally uses to buy.

To close this section, many papers focused on improving retention and, thus turning customer acquisition into customer loyalty. Following the reasoning made by Stanley Frederick W. T. Lim and Matthias Winkenbach in the paper *Configuring the Last-Mile in Business-to-Consumer E-Retailing*, it can be affirmed that when customers are satisfied with their shopping experience – regardless of the channel in which it happens – they will rarely switch to competitors offering: their intention to repurchase from the same brand will indeed be higher.

Under an omnichannel viewpoint, this is reinforced by articles like *Optimal cross-channel return policy in dual-channel Retailing systems*, sustaining that when customers have at their disposal multiple, flexible and convenient purchasing options from a specific retailer, their loyalty towards him increases.

In addition, it has been found that if customers perceive a smooth cross-channel experience that allows them to easily switch from one channel to another, they will respond more positively to the omnichannel services offered by a specific brand. In this way, omnichannel becomes the trigger generating the so-called lock in effect. (*Quality of channel integration, perceived fluidity and usage of the omnichannel service: the moderating roles of the internal and external user experience*)

Economic benefits

Moving on to the next group, *economic benefits* refer to measurable - monetary and non-monetary – factors to which a retailer can aim thanks to an omnichannel strategy. Being an important point in determining the success of the omnichannel business, these benefits should be considered from the beginning of the strategy implementation and iteratively monitored to track improvements before and after the omnichannel strategy is established.

Connected to the concept of market extension and as affirmed by 30% of the analysed papers about this topic – in particular, by the paper *Examining customer channel selection intention in the omnichannel Retail environment* by Xun Xua and Jonathan E. Jacksonb – omnichannel retailers' main reason to introduce new integrated and interactive channels together with the current ones, is to attract more demand.

Omnichannel also includes the adoption of new models that, involving multiple channels, allow customers to purchase and receive their orders in different ways. It has been also observed that, when talking about delivery, a faster service leads to higher satisfaction and, consequently, to increased sales both online and offline. More specifically, when evaluating the economic impact of express delivery using a DiD (Difference in Differences) approach, Marshall L. Fisher, Santiago Gallino and Joseph Jiaqi Xu – authors of the paper *The Value of Rapid Delivery in Omnichannel Retailing* – found that any reduction in delivery times of one business day corresponds to an average increase in sales of 1.45% (starting from a baseline of seven business days).

This is a first indicator of the benefits of using multiple integrated channels for doing up and cross selling.

One example of that is presented in the article *Omnichannel Retail operations with consumer returns and order cancellation* mentioned also before, which analyses ROPS – reserve online pick up in store - omnichannel model, also called book&collect.

In the study it was observed how giving customers the possibility to start the purchase process online (in the pre-purchase phase) and to conclude it offline, made them more willing to buy additional items once in the store. Indeed, approximately 45% of customers who purchased the items after the online reservation, made a new purchase directly at the point of sale (cross-selling).

Additionally, when customers recognize a high degree of coherence and integration in a company's new purchasing models, they reinforce their trust in the brand and they tend to explore the different shopping alternatives in the available channels.

Ultimately, the use of technologies in the store and thus the evolution towards a digitally enabled experience is proving to be a major trigger for impulse purchases by customers. As the article *What kind of in-store smart Retailing for an omnichannel real-life experience?* suggests, technologies that enrich the customer experience through better entertainment can also generate additional sales.

Another measurable economic benefit given by the omnichannel strategy can also be seen in a reduction of return rates. This improvement is mainly due to the development of new models – as ROPS –, to the use of new communication channels like videocalls, but also thanks to new services like a personal concierge that brings the order to the customers' house and wait there till they decide to finalize or not the purchase.

These services indeed, albeit in different ways, allow customers to see or partially experience the products before purchasing them. This indirectly gives them a higher purchase certainty and increased trust, since the connection with the brand becomes stricter and – in some cases – more personal than before.

Anyway, the paper *Omnichannel Retail operations with consumer returns and order cancellation* specifies that retailers should keep in mind that the risk is not zero: on the opposite, it can shift from products' return to order cancellation. Indeed, especially in the ROPS case, customers do not pay to cancel the order and therefore feel less constrained to keep the products booked; consequently, the order cancellation rate increases.

After these 3 categories, is finally worth considering the “overall one” to properly conclude the analysis of economic benefits. As stated by Yuan Li in the paper *Multi-period price optimization problem for omnichannel retailers accounting for customer heterogeneity*, the long-term profit maximization – together with minimization of lost sales – remains indeed the primary objective of any retailer.

Some interesting insights related to the profitability of an omnichannel strategy are reported by Marco Savastano, Francesco Bellini, Fabrizio D'Ascenzo and Marco de Marco in the article *Technology adoption for the integration of online–offline purchasing*. Starting from a Deloitte study of 2014, the authors found that nearly 30% of the sample follow brands on social media, 75% surf online before going to a brick-and-mortar store, and 56% use a mobile device to conduct shopping-related research, mainly while in store. The research also shows that omnichannel shoppers spend more than average (typically 50% more), accounting for up to 70% of Retail spend.

To continue the examination, the authors conducted a multiple-case study involving 15 Italian retailers in different sectors and carried out 80 interviews with store managers and employees. From all the data gathered, they have been able to affirm that clients connecting with a specific retailer through multiple channels, are more profitable than single-channel customers.

The situation can be summarized in the Figure 4.2 below where it is clear that if retailers are able to introduce innovative touchpoints - and channels - that can give brands a renewed and improved image and positioning, this will make customers more attracted, more curious and, ultimately, increasingly willing to pay for the brand's offer.

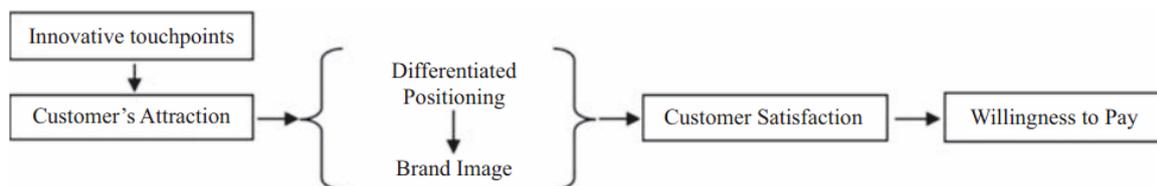


Figure 4.2 Conceptual framework of the customer experience; source: *Technology adoption for the integration of online–offline purchasing*

Customer benefits

The last part related to strategic goals has to do with *customer benefits*. In particular, as the literature has shown, the main benefits of omnichannel strategy implementation are a *smoother and improved customer experience* (48%), a *greater ability to shop independently in-store* (13%) and finally, *better order visibility* (31 %).

Focusing on the customer and offering a rich and seamless customer experience, as many times said, is a core principle of omnichannel. In *Solving the crisis of immediacy: How digital technology can transform the customer experience*, the authors present the results gathered from interviews with 35 retailers and a customers'

survey. The first step the authors consider essential to improve the customer experience is to fully understand consumer behaviour online and offline in order to deliver "content-in-context, or the right information at the right time in the right place". The research, as reported in the Figure 4.3 below, found that personalization and interactivity are the two main drivers that enable retailers to deliver a rich shopping experience.

Achieving personalization requires advanced data analytics capabilities to integrate customer data across all touchpoints and extract useful information; this leads to positive customers' attitude who feel the company cares about them.

Interactivity instead aims to engage clients in an immersive environment. For example, through mobile app and live video technology, customers can connect with experts to express their needs and wishes or interact with the products thanks to augmented reality solutions.

Transforming the customer experience

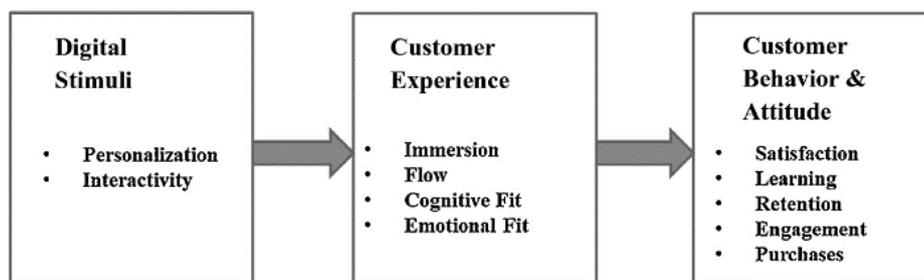


Figure 4.3 Customer journey transformation, source *Solving the crisis of immediacy: How digital technology can transform the customer experience*

The second benefit is a direct result of the changes affecting the store, which will be explained in the dedicated section. The usage of new technological solutions allows those customers who look for a faster and more independent shopping experience, to have access to products' information without having to talk to salespeople. This not only leads to greater customer self-reliance, but it also affects retailers as personnel costs may be reduced. (*What kind of in-store smart Retailing for an omnichannel real-life experience?*)

The final point concerns the ability of customers to track the status of their orders and collect products' inventory information. This reflects their growing desire for transparency in the purchasing process both online and in-store: as the paper *Examining customer channel selection intention in the omnichannel Retail environment* highlights, a higher visibility on orders has a positive impact on customer behaviour.

4.1.2 *Strategic Channels Management*

Within *strategic channels management* are included all the activities that a retailer should take into consideration during the planning phase of an omnichannel strategy.

Assortment management has been examined with the purpose to understand how retailers should behave in the management of the range and variety of products offered in the different channels: customers, indeed, can interact with same or different articles of a specific firm through distinct touchpoints.

Considering the case of proprietary channels, the choice on how to structure these touchpoints' assortment depends mainly on two aspects: spaces and costs.

On one side, online channels are able to guarantee a wide – potentially limitless – range of products and inventory, guaranteeing low storage costs due to pooling effects. On the other side, even if maintaining high availability of products is key for satisfying customers, offline assortments are constrained in the size and layout of the point of sales.

Marco Melacini, Sara Perotti, Monica Rasini and Elena Tappia, in Article *E-fulfilment and distribution in omnichannel Retailing: a systematic literature review*, through a detailed analysis of 58 scientific papers, propose alternative strategies to manage the product range between the two channels. The driving force behind this choice is the product's typology: the authors propose to make available on both channels fast-moving goods, namely the most popular products characterized by high turnover and low inventory costs; on the contrary, the online channel should be devoted to more specialized products with high carrying costs.

The existence of multiple touchpoints increases exponentially the difficulty in managing the product range, but at the same is necessary to coordinate as better as possible the assortment across different channels to provide seamless experiences.

For this reason, several studies conclude that full or partial integration are beneficial – and so preferable – with respect to the no integration case because they avoid confusion and allow customers to have a cohesive experience through different channels.

Price management is strictly correlated to the assortment management and is about retailers' decision to adopt or not price-matching among online and offline channels.

From one side, studies as *Omnichannel Assortment Planning* argue that matching prices between offline and online channels results to be particularly beneficial to avoid showrooming behaviours. Indeed, a great portion of eCommerce consumers chooses the online channel with respect to the offline one due to lower prices; many times, this happens after having checked in-store prices.

Additionally, evidence shows that 44% of customers use smartphones during their shopping experience to compare a specific brand's prices with the ones of physical and virtual competitors before making a purchase. As consequence, price matching between online and offline touchpoints, from one side to allow customers to be aware of prices of both channels since the beginning of their shopping journey; from the other side, if prices are competitive, it can guarantee an advantage against other players that don't have price matching. (*What kind of in-store smart Retailing for an omnichannel real-life experience?*)

It should also be said that customers many times are price-sensitive and, so, retailers can decide to have different pricing across channels to extend their offerings to different segments. In this way, customers who are looking for a high benefit-costs gap will purchase from the cheaper channel – most of times the eCommerce website. (*Examining customer channel selection intention in the omnichannel Retail environment*)

Finally, as examined in *An analysis of factors influencing omnichannel Retailing adoption using ISM-DEMATEL approach: an Indian perspective*, it can be said that firms are better able to forecast demand when pricing is unified across channels, since this diminishes continuous customers' shifts among different touchpoints and allows to plan inventory and sales distribution in a more reliable way.

Marketing activities can differ too between channels in terms of promotions, advertising, catalogues and emails.

The typology of communications received, as underlined in the article *Examining customer channel selection intention in the omnichannel Retail environment*, influences customers' purchase frequency, order size and is also able to affect channels' choice. Consequently, the use of distinct – but coordinated – communication channels allow customers to develop a stronger relationship with the brand, having the possibility to access information anytime and anywhere.

Furthermore, as explained by Won-jun Lee, cross-promotion is one solution to create channel integration in this area of study: the online website suggests in-store current promotions while in the point of sales are advertised discounts and offers available online only, also through pamphlets, receipts, and carrying bags.

As consequence, delivering integrated and interactive marketing communications is the starting point to increase profitability through enhanced customers engagement; this is possible thanks to a unified “brand advertising” with no silos among touchpoints usually managed separately.

Loyalty is generated when the efforts done in marketing communications allow retailers to fully understand what appeals customers and their needs and, consequently, make them loyal to the brand.

Loyalty programs could be integrated or not among channels, but the majority of researches seems to agree on the positive effects of exploiting integrated marketing outcomes to achieve customers’ loyalty.

An example is provided in the paper *Planning and implementing an effective omnichannel marketing program*. The authors Barry Berman and Shawn Thelen analyse a 4-stage transition from multi-channel to omnichannel under a marketing perspective. They identify that to increase loyalty in an integrated way, firms reached positive results by putting in place a strategy to improve cross-channel fidelity: this means providing online coupons to customers with high store and low online purchases and store-based coupons to high online but low store users.

Service level management can be intended in different ways according to the topic in analysis study.

First, it can be seen as being able to iteratively manage and improve customers relationship. This is partially connected to marketing and loyalty management, but can assume a broader meaning, especially in a digitally enabled world. As the paper *An analysis of factors influencing omnichannel Retailing adoption using ISM-DEMATEL approach: an Indian perspective* suggests, indeed, to guarantee and reinforce the lock in effects, retailers should regularly share with customers information related to 4 Ps (products, pricing, promotion and place), introducing them to the latest in-store technologies and clarifying the benefits of using all the available channels compared to just one single touchpoint.

Secondarily, good service level is related to high speed and rapid delivery times. As multiple omnichannel models are available to customers, retailers need to be able to satisfy demand coming from all of them in an efficient way.

As previously explained, *delivery times* and so a prioritization of online orders delivery over offline ones – or vice versa – is key for providing customers a satisfying service. Some of the initiatives that can be put in place regarding delivery models are the ones discussed by Ruchi Mishra, in the paper mentioned before focusing on Indian apparel firms and based on the concept of differentiated logistics. It can be indeed said that among the most spread

practices there are prioritised picking list, prioritised time slots and picking in small batches. By creating documents with both the location of products in stock and picking and shipping details, along with managing orders in small batches, retailers can offer different delivery and pricing options to customers providing a "*seamless logistics support across all channels*".

Under strategic channels management category have also been classified the following topics:

- *Personnel management*, related to the use of resources - shared or specific - among available channels.
- *Information availability*, also called cross-channel information visibility, is strongly linked to the higher visibility on order mentioned before with regard to customer benefits. It has been considered twice since it is an important point on which retailers should pose their attention to provide such transparency.
- *Data tracked*, regarding security and privacy issues.
- *Fulfillment structures conversion* regarding changes to points of sales and logistics facilities to fulfil omnichannel orders in the most efficient way.
- *Investments/implementation costs*: regarding additional costs – compared to one or multichannel strategy – related to all the previous categories. For example, additional costs for the personnel training, the ones connected to necessity to put in place mechanisms to share information or track data, and all the changes related to structures.
- *Revenues allocation* regarding online, offline and hybrid sales, useful to understand which channel has to be considered accountable for a specific transaction.

All these topics will be treated further in the following paragraphs. For the classification chosen, was anyway worthy to consider them in the “strategic management” category too, since they complete at 360° the list of topics retailers should take into account and be aware of when implementing an omnichannel strategy.

The final point to address in this section is linked to *performance measurement*.

A senior executive, interviewed by Stanley Frederick W.T. Lim and Jagjit Singh Srani, affirmed that the majority of existing KPIs fail to capture the benefits and to measure the effectiveness of an omnichannel strategy. Usually, customer experience is used as a measurement indicator but is linked to the subjectivity and perception of

customers and not to the actual efforts of the company. (*Examining the anatomy of last-mile distribution in e-commerce omnichannel Retailing A supply network configuration approach*).

On the contrary as stated in the article *A quantitative performance management framework for assessing omnichannel Retail supply chains*, “retailers need a better understanding of success determinants and a data-driven performance management with next-generation key performance indicators (KPIs) covering both B2C (front-end) and B2B (back-end) performance”. In this way, the front-end indicators capture information about the shopping journey and the customer experience, while the back-end indicators integrate performance associated with supply chain management and information systems.

4.2 Implementation

The second section of the framework, reported in the Figure 4.4, looks at the factors – especially front-end ones – that are required for the implementation of an omnichannel strategy. More precisely, *omnichannel models* are first analyzed; then the focus is placed on *technologies* and on the *technological solutions* introduced in the physical point of sale; finally, the various *channels* that retailers can use in addition to the traditional physical store are discussed.

IMPLEMENTATION	
OMNICHANNEL MODELS	CHANNELS (other than physical store)
Book and collect Click and collect Drive and collect Webrooming Showrooming Online selling in store Inventory availability check In store return of online orders Home delivery	Website (desktop or mobile) App Social media eTailer Marketplace Live stream shopping platform Videocall

IMPLEMENTATION			
HABILITATING TECHNOLOGIES	HABILITATING SOLUTIONS		
	PRE-SALES	SALES	PAYMENT/AFTER-SALES
Mobile QR code Augmented reality IoT - WiFi IoT - Beacon & RFiD IoT - NFC IoT - Sensors AI - Virtual Assistant/Chatbot AI - Intelligent objects AI - Recommendation	Digital signage, Digital wallpaper Virtual Catalogue In store display Virtual Mirror, Virtual Fitting room App to collect information in store Endless aisle 3D printing Live chat & Chatbot	Live chat & Chatbot Sales force automation & device to buy online from store Smart carts Scan&Go	Live chat & Chatbot Self-checkout payment systems Mobile POS Smart cameras Parcel locker

Figure 4.4 Excel framework for the implementation category

4.2.1 Omnichannel models

This first area aims to investigate the most suitable omnichannel models to provide customers with a seamless shopping experience between the available channels. These models represent, indeed, the first step towards the establishment of retailers' omnichannel approach, also referred to as dual-channel Retailing: as highlighted by Xun Xua, Jonathan E. Jacksonb in the paper *Examining customer channel selection intention in the omnichannel Retail environment*, companies should decide how to integrate virtual and store presence, in order to meet customers' search and purchase needs. The main models presented in the papers as well as the frequencies with which they are mentioned, are shown in the Figure 4.5 below. In total, 47 academic papers address this topic.

of Papers addressing each omnichannel model

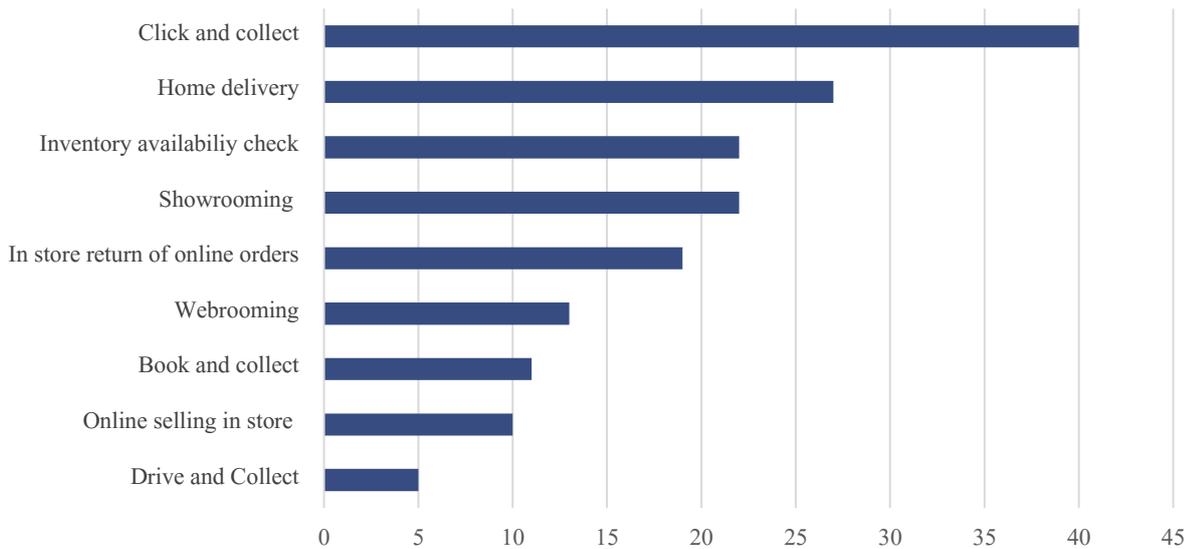


Figure 4.5 Omnichannel models tracked in the literature framework

The first three models - book&collect, click&collect and drive&collect - have a very similar structure: in all three cases the order is made online – specifically, the action of putting the product within a cart – but the collection phase happens physically at the store.

Except from this similarity, the book&collect option is different from the other two for what concerns the payment: in this case indeed, only the reservation phase – a “pre-order” – happens online, while the payment is made in the store; in the other two cases, instead, only the pick-up phase happens offline. This difference can be also understood by the alternative names given to these models: while click&collect it is also called BOPS – buy online, pick up in store – the book&collect service is referred to as ROPS – reserve online, pick up in store.

As explained by Juzhi Zhanga, Qingyun Xub, Yi He in the paper *Omnichannel Retail operations with consumer returns and order cancellation* the ROPS model implies no immediate payment and, possibly, free cancellation of order in store, leading to short waiting times and no risks for customers; BOPS, instead, as in the online-only situation, requires consumers payment at the moment of the online order and, eventually, to pay for product's return.

To conclude, drive&collect model – also called click&drive – distinguishes itself for the way in which the order is collected: customers have the possibility to pick up orders directly from their cars by parking in specially created parking spaces thanks to a “drive-through” delivery mode.

All the 3 options, compared to single channel purchases, provide customers with higher flexibility in both purchase and pick up options consequently gaining popularity.

In the paper *Satisfying consumers all around: a multidisciplinary view of omnichannel Retail*, Juan Wang, Bowen Zheng, Hefu Liu elaborate meaningful insights coming from the paper *Omnichannel Retail operations with buy-online-and-pick-up-in-store* written by Fei Gao and Xuanming Su. The authors state that models including a store visit to complete the order result beneficial for both customers and retailers since shipping and return costs are reduced. Furthermore, consumers' confidence in purchase is increased, as the offline stores reduce perceived risk and uncertainty typical of the online channel.

The next two models in the table are webrooming and showrooming. An important difference with respect to the previously presented categories lays in the fact that they are “guided” by customers. A clear explanation of these two models is provided by Vishal Kumar Gupta, Q.U. Tingb, Manoj Kumar Tiwari in the paper *Multi-period price optimization problem for omnichannel retailers accounting for customer heterogeneity*: while webrooming defines a common modality for shoppers to search extensively products online and complete the purchase at the brick-and-mortar store, showrooming refers to the option of examining and “feeling” the product in the physical point of sale before placing the order online generally at a lower price.

It is worth saying that, sometimes, this latter option can be related to the implementation of *physical showroom* format, therefore a physical store that does not keep inventory; consequently, customers visit the store solely to see and try products that are then purchased online.

The former – also called “research shopping”, as some papers highlight – can be instead thought as a *virtual showroom* research option: users rely on the online channel to find useful information before shifting to an offline touchpoint and continue the shopping experience with the selection and payment phases.

In addition to what disclosed until now, special attention should be paid to the *showrooming* model, not to be confused with “showrooming behaviours” of customers.

In the latter case, customers' actions are detrimental to retailers, as potential clients can access and exploit third-party websites via smartphone when visiting the store – for example, to compare prices – resulting in a possible non-sale to the shop.

This behaviour is evidenced in the papers *What kind of in-store smart Retailing for an omnichannel real-life experience?* by Christophe Bèzes and *Customer's reaction to cross-channel integration in omnichannel Retailing: The mediating roles of Retailer uncertainty, identity attractiveness, and switching costs* by Yang Li, Hefu Liu, Eric T.K. Lim, Jie Mein Goh, Feng Yang, Matthew K.O. Lee.

Indeed, customers possibility of free-riding among channels – motivated by self-efficacy, convenience orientation, price comparison, or risk reduction – threatens to prevail over what, instead, should be a positive innate attraction to retailer identity and favour purchase towards him independently from the channel used, according to the showroom model.

Other services greatly widespread after click&collect options are the last three highlighted in the graph above: inventory availability check, home delivery and in-store return for online orders. A careful management of these models is essential to achieve a good level of customer satisfaction as stated especially by Vahid Mirzabeik, Soroosh Sam Saghiri in the paper *From ambition to action: How to achieve integration in omnichannel?* and as suggested by a high percentage of other papers treating this theme.

Key elements to enhance company's position in a highly competitive market are indeed:

- fast and flexible delivery options (e.g. same day or next day delivery);
- flexible return alternatives, with non-satisfactory online purchases available for cross-return options to the physical store;
- inventory visibility initiatives, allowing real time access of products' stock information across channels, which prevents customer to visit the store when an item is not available.

The importance of this last point is also confirmed by Frederik von Briel in the paper *The future of omnichannel Retail: A four-stage Delphi study*. 18 Retail experts have been interviewed to understand trends, challenges and crucial points concerning omnichannel Retail. Specifically, one of the consultants observed how “*In order for consumers to purchase anytime, anywhere, they have to have visibility to both online and store inventory in real time*”.

4.2.2 Technological solutions

Next category concerns technologies and technological solutions: the objective is to categorize which are the main ones discussed and reported by academics in the scientific literature.

Before going deeper in the analysis, it is key to make some clarifications. A premise can be done taking a cue from an explanation provided during the introductory lecture of “Digital Business Innovation” course by Professor A. Ghezzi, Research Director of *Osservatorio Space Economy* and *Osservatorio Startup Hi-tech*. “*Digital transformation is not about technology*”: indeed, a lot of technology is available to date; the tough part is to understand how to use it and how to plug it inside each company to make digital work effectively and efficiently. Consequently, each business needs to have people able to see and interpret technology and technological solutions with the right lenses – in a strategic, entrepreneurial, organisational way – with the objective to understand how each of them could change the market.

Therefore, a further explanation is needed:

- *Digital Innovation* is the technology enabler, and is represented by the technological waves – Mobile, Cloud, AI, IoT, Blockchain, eCommerce and others.
- Consequently, *a digital business strategy leverages these enablers to create a new business model*, that will represent a source and form of competitive advantage. The new strategy is indeed formulated by recognising that the world is fully digital.
- To conclude, *digital transformation is the organizational response* to the need of adopting digital innovation inside the company and so to use the enablers for implementing a digital business strategy.

As anticipated also in the section devoted to the introduction, consumption habits are changing and, therefore, companies need to find new ways to meet new needs: technology and technological solutions play an important role and are the first topics to consider.

Anyway, as just explained, benefits do not come out from the simple “adoption” but should focus on their “exploitation” within an overall digital strategy.

To be more precise, a further premise must be made to clarify the distinction between the next two categories:

- *technologies* are defined as the technological paradigm that enables solutions;

- *technological solutions* are the various application areas in which technologies can be declined.

In both this and the next section, some parallelisms between technological solutions and the paradigms that enable them are shown. As a consequence, where possible, an analysis of the online channel used for some of the technologies explained is concurrently brought forward.

Mobile

The first technology to be considered, that is also the most diffused in terms of analysis conducted, is *mobile*. It represents an extremely versatile technology that enables retailers to use a variety of solutions to achieve important customer relationship and communication goals.

An article that presents interesting insights and use cases of this technology is *Blurring the Lines between Physical and Digital Spaces: Business Model* by Milan Jucevski. The paper, which describes the mobile technology as a key add-on for Retailing, is based on case study research. Three companies – all engaged in innovating their point of sales traditional activities – are studied: two fashion retailers, ASKET and H&M, and the electronics retailer Dustin.

Starting from H&M, the retailer has launched a *mobile application* to be used in stores with a dual utility. From one side, it is installed on staff devices to support customers in both pre-sales and sales phases. The store associate, indeed, can help clients by locating the requested products on the shelves but also by placing online orders for them through the app – leading to a sales force automation solution. On the other hand, the same application, when installed on customers' mobile devices, allows them to scan a bar code to collect information about the chosen items.

Moreover, thanks to the functionality introduced in collaboration with the fintech company iZettle, H&M clients can make purchases directly from the changing room – starting from the app – via *mobile POS* (mPOS).

The study highlights indeed how the usage of mobile technologies during the checkout process - either via customers' smartphone or through devices carried by sales associates - can help to increase operational efficiency and customer satisfaction, contributing to both value creation and appropriation.

The other two retailers used mobile technology not directly within the store but as a *new sales channel*. Consequently, although sales channels belong to a different category, they will now be discussed to avoid repetitions. This also shows how mobile is a cross-cutting technology with many application areas.

Indeed, Dustin used this technology to create a mobile-friendly website *transactional purposes*, meaning that customers can employ it to add products to the cart and make purchases. ASKET instead chose to use mobile to strengthen its customer relationship, thanks to the introduction of a *social media channel* to improve the transparency of the production process and to give customers the opportunity to meet the people behind the brand.

The same usage of social and transactional channels is also suggested by Burcu Adivar, Işık Özge Yumurtacı, Hüseyinoğlu and Martin Christopher in the paper *A quantitative performance management framework for assessing omnichannel Retail supply chains*. The authors affirm how social media are primarily adopted by retailers to raise awareness, while customers' preferred channels for placing orders remain mobile apps, desktop websites or the physical store.

Augmented reality

Continuing with the analysis of technologies, *augmented reality* is becoming increasingly important in redesigning the shopping experience, especially in certain industries. Based on the principle of digital overlay, it allows to overlap multimedia information to the reality perceived with the five senses. The application of this technology results beneficial to provide a seamless omnichannel experience to customers and to smooth potential obstacles that could emerge in the omnichannel environment (*Omnichannel management in the new Retailing era: A systematic review and future research agenda*, Ya-Jun Cai, Chris K.Y.Lo)

Augmented reality can be used for different applications, but the most common solutions that take advantage of this technology include *virtual cameras and mirrors* – also referred to as virtual mirror-fitting rooms or virtual try-on mirrors.

Virtual mirrors and virtual cameras, which are mainly adopted in the fashion and cosmetic industry respectively, are screens able to detect through a software the contour of customers' figure or face, to then provide a representation of it and to simulate products' try on.

Christophe Bèzes, in the paper *What kind of in-store smart Retailing for an omnichannel real-life experience?*, investigates the importance of using in-store technological solutions to develop a seamless omnichannel experience and, thus, to prevent cannibalization of physical stores through eCommerce. Specifically, with reference to virtual mirrors, the author states that the added value this solution can provide is to "*enhance the store's atmosphere and attractiveness*" bringing digital in the physical world.

Augmented reality not only has an application in the physical store, but it can also be leveraged to overcome some limitations of eCommerce shopping experience and, so, of the online channels. Using this technology via *PC* or *smartphone* allows customers to virtually try out products and to overcome the problem of online information asymmetry, according to which clients do not have complete information about the product fit and quality. (*Satisfying consumers all around: a multidisciplinary view of omnichannel Retail*, Juan Wang, Bowen Zheng, Hefu Liu)

Internet of Things (IoT)

Continuing with the analysis of technologies, 31% of the articles examined discussed the introduction of the *Internet of things (IoT)* within Retail world. This technology is based on "smart objects": for being defined like this, each object needs to have two compulsory properties. These are:

- *Identification*: everyday objects start to have a life in the digital world and should consequently be provided with an "ID code in the digital world".
- *Communication*: these objects should be able to communicate to people and other objects. Indeed, IoT refers to a network of items that share information – collected and/or processed – about themselves or the surroundings. Therefore, the core element is to have connected objects.

Several IoT technologies exist to make this interconnection possible. Among these, there are RFID – used for the first time in 1999 at MIT to identify an object through a radio frequency system –, cellular networks (3G, 4G and 5G), PLC (Power Line Communication), NFC, Bluetooth and WiFi.

When IoT is applied to Retail, the term "smart Retail" arises and consists of an increasingly expert use of digital technologies to redefine the entire value chain, from manufacturing to logistics to the management of the

physical store. In this section, as mentioned before, the focus is mainly on the front-end processes: many IoT technological solutions exist and can be introduced within stores.

Some interesting insights are provided by J. Jeffrey Inman and Hristina Nikolova that, in the article *Shopper-Facing Retail Technology: A Retailer Adoption Decision Framework Incorporating Shopper Attitudes and Privacy Concerns*, discuss some of the best Retail technologies of the recent past as well as emerging ones. According to the authors, the main advantages that the adoption of in-store technological solutions can bring are the ones reported in the Figure 4.6 below, all leading to an increase in profit.

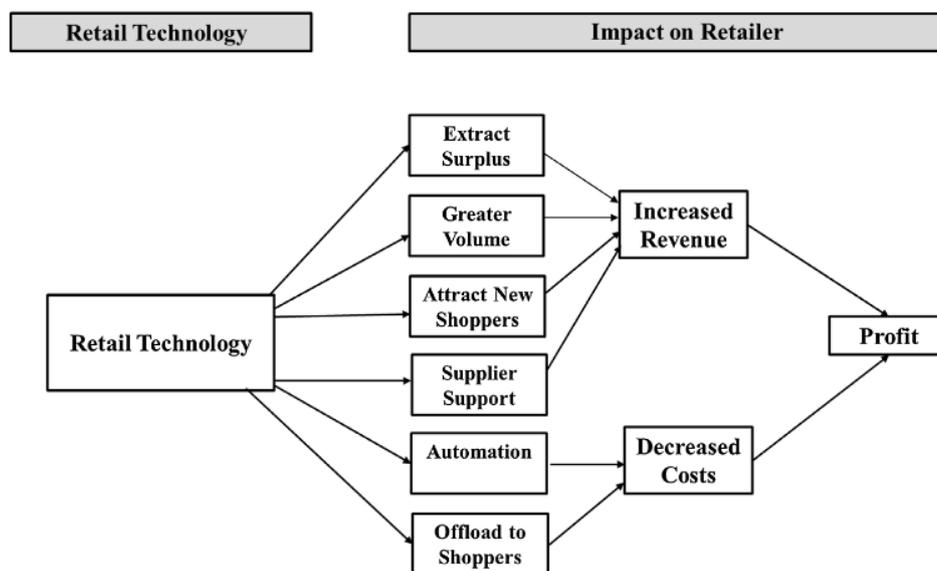


Figure 4.6 Retail technology impacts, source: *Shopper-Facing Retail Technology: A Retailer Adoption Decision Framework Incorporating Shopper Attitudes and Privacy Concerns*

Diving deeper in the specific technologies and solutions treated in the paper, the first one to be discussed is *WiFi*.

The use of WiFi networks allows merchants to easily communicate with customers in-store by sending profiled offers or suggestion to their smartphones; concurrently, the WiFi signal from the visitors' smartphone allows retailers to track their movements in the point of sale. However, while the first option is, overall, appreciated by store visitors, the other situation may cause a negative reaction of customers who are concerned about their privacy. A clear example of it is represented by Nordstrom, which started experimenting a solution to track customer movements in store in 2013, but had to stop it due to customer negative feedback.

The next solution relying on IoT, analysed in the same paper, concerns *beacons*. Beacons are low-power radio transmitters using Bluetooth technology to monitor the presence - up to an average distance of 50 meters - of mobile devices and to communicate with them.

According to the authors, the usage of this solution has the potentiality to affect omnichannel order picking, especially in case of online purchases with in-store pick up options: in-store sales associates can start to prepare orders for pickup in a proactive way when customers are located near the point of sales; hence, at their arrival to the store, clients will find the order ready to be picked, saving therefore a lot of time.

However, it turns out how – to date – the main scope of beacons is proximity marketing: these devices represent indeed a geolocated service that allows retailers to send targeted advertising, specific content, or reminders directly to the smartphones of customers when they are in a specific area of the store.

The authors J. Jeffrey Inman and Hristina Nikolova in the article also highlight 3 main benefits of smart shelves, a solution involving the use of beacons installed on the shelves. First, as previously introduced, retailers can take advantage of a higher customization of messages and promotions, based on the areas mostly visited by each single client.

Furthermore, thanks to a more precise monitoring of products inventory, merchants can benefit of stock out reduction.

Finally, digital price tags incorporated on the shelves allow retailers to change prices remotely based on product demand (dynamic pricing) leading to substantial labor savings. It is worth underlying also how dynamic prices permits retailers to “*extract greater surplus from shoppers with a higher willingness to pay*”.

Among other solutions based on IoT technologies, *smart carts* and *smart cameras* are important to be cited.

Specifically, for what regards *smart carts*, as underlined by Christophe Bèzes in the paper *What kind of in-store smart Retailing for an omnichannel real-life experience?*, this typology of device can concurrently bring utilitarian benefits to customers by reducing waiting time at checkouts and make the shopping experience simpler and more entertaining.

On the other side, *smart cameras* – similarly to what discussed for WiFi technology and beacon applications – are particularly useful to monitor customers behavior in store, both for safety reasons and for satisfying requests

in a more tailored way; smart cameras are indeed able to identify what clients take from shelves and, therefore, to associate this information with a specific person.

To conclude, it is worth mentioning *smart fitting rooms* as last application case within IoT section. Sometimes confused with the virtual mirror-fitting rooms, this solution is mentioned in the 20% of the examined papers. In case of smart fitting rooms adoption, the traditional changing rooms are equipped with RFID systems – able to recognize the products brought inside – and touch screen terminals. In this way customers can receive personal suggestions based on the products already tried, navigate through other items available in store and, eventually, purchase them. The attention is not posed anymore to a virtual try-on of the garments but on providing an extremely personalized experience, made possible by the sensors installed in the fitting rooms.

Artificial intelligence (AI)

Continuing the analysis of technologies, another important trend emerged from several scientific papers concerns the use of *Artificial intelligence (AI)*. By definition, artificial intelligence deals with the “*development of hardware-and-software systems endowed with human-like capabilities, able to autonomously pursue a given goal and making decisions that, until that moment, were usually assigned to humans*”.⁷

Currently, eight classes of AI solutions exist: Autonomous Vehicle, Autonomous Robot, Intelligent Objects, Virtual Assistant and Chatbot, Recommendation, Computer vision, Language Processing and Intelligent Data Processing. The ones typically used at the point of sale are *intelligent objects*, *virtual assistant* and *chatbot*, and *recommendation*.

Virtual assistants’ category is rarely analysed in the scientific literature (2%) compared to the other solutions just mentioned, which recur with a frequency of, respectively, 9% and 39% for intelligent objects e recommendation systems.

Regarding intelligent objects category, a premise to clarify the difference between these objects – based on AI technologies – and smart objects – based on IoT technologies – is needed. While the latter, as previously analyzed, refers to a network of items able to communicate and share data about themselves or environment around them because they are connected, when the computational power – and so the AI – is introduced inside

⁷ https://blog.osservatori.net/it_it/intelligenza-artificiale-funzionamento-applicazioni#significato

the device itself, objects become “intelligent”. Therefore, the possibility to have the computational power directly into the objects allow them to respond with a lower delay.

An interesting use case of intelligent objects within Retail world is the one of *smart cameras*, introduced by Amazon in 2018 in the first cashier-less store, as presented in the paper *Evolution of Retail formats: Past, present, and future*. The smart cameras installed at the point of sale are able to distinguish the purchases of different customers which can therefore pick up products and simply walk out from the store.

Differently to what was said earlier in the IoT section about this solution, by using artificial intelligence the smart camera not only can recognize objects, but also process payments.

The multiple authors of the paper mentioned in the previous paragraph, also agree on the importance of recommendation systems for retailers. These systems include solutions which aim at showing preferences and decisions taken by the users, based on information provided directly or indirectly by them. The output consists of personalized recommendations, that can appear at different stages of the customer journey, without the need for the intervention of the store associates.

These systems are also widely used online to provide relevant content according to data collected from customers along the decision-making process. A retailer presented in the paper operating in the furniture sector, uses recommendation systems to deliver a "more engaging, relevant, and personalized experience": the ultimate goal of the solution is to facilitate customers' purchase decisions by providing them with advice based on previously tracked preferences.

A further field of use of AI includes *scan&go solutions*, born from the combination of computer vision and smart devices equipped with a camera – proper of the client or provided by the Retailer. As explained in the paper *Customers' tolerance for validation in omnichannel Retail stores. Enabling logistics and supply chain analytics* these solutions imply a scan of the items when browsing products in store through a device and, then, the usage of the same device to make an electronic payment at an NFC – near field communication – terminal or in a self-checkout kiosk.

Returning to the paper *Shopper-Facing Retail Technology: A Retailer Adoption Decision Framework Incorporating Shopper Attitudes and Privacy Concerns* mentioned earlier in the IoT dedicated section, the

authors highlight how scan&go solutions can improve customer satisfaction thanks to reduced waiting time along with merchants' labor savings.

To conclude front end technologies and solutions section, *digital signage & digital wallpapers* and *in-store display* are analyzed; the two categories have been treated respectively in 11% and 26% of the papers examined. In particular, the article by Christophe Bèzes *What kind of in-store smart Retailing for an omnichannel real-life experience?*, which proved particularly useful for a proper analysis of front-end related aspects, provides some interesting insights about these two solutions.

Digital signage is a form of proximity communication, through which contents are shown through electronic screens or video projectors on retailers' showcases within the point of sale but also in open public spaces. On the contrary, in store display represents interactive devices that – in addition to the communication function – allow in-store customers to collect information, to check the availability of products, to access the entire online catalog and to place orders.

Great advantage brought by the first solution is registered in department stores. As Roggeveen et al. demonstrate (2016), digital displays increase both the average time customers spend in-store and sales volume. However, the same effect is not achieved in small stores, where the emphasis is placed on saving time.

Regarding in store display, also in this case the “non-shopping activities” prolong the time spent in store and make it more pleasant. A great benefit of this solution is represented by retailers' opportunity to control the information consulted by customers and to monitor their online behavior by tracking the products they search for; this is not possible when customers use their smartphones.

To conclude this section the next paragraph is dedicated to *sales channels* other than physical store. While most of them will be explained more in detail in the next sections the focus here is on the videocall sales modality.

A *videocall* is not intended as a real sales channel, since it often takes place through the website or mobile website, but it has been included in this section because it represents a way of interaction and sale between the retailer and a customer. In particular, it includes a one-to-one contact with a store employee: retailers should place particular attention to this newly introduced sales model since, as reported in article *Evolution of Retail formats: Past, present, and future*, direct assistance can generate a 10-fold increase in online sales conversion rates, as well as an increase of the average order value of 50%.

4.3 Implications

The third section to consider concerns the *implications* that omnichannel entails. More precisely, it has been further divided into three subsections: the first refers to front-end impacts, comprehending also what is visible to customers; the second concerns the implications relative to back-end factors, not visible to end customers but equally fundamental to offer them a smooth shopping experience; finally, the third one address organizational changes following the adoption of an omnichannel approach. The Excel framework for this category is represented in the Figure 4.7 below (it has been divided into different tables for clarity)

IMPLICATIONS		
FRONT END		
NEW FORMATS	PHYSICAL SPACES	PERSONNEL
Experiential store Pop up store Shop in shop Pick up point Fulfillment hub Dark store Showrooms	Smaller size Spaces where customers collect orders online (in/out) Store layout and product display Spaces where customers place online orders Dedicated (online/offline) customer services spaces	Sales assistant fulfilling online orders Remote sales activities Staff equipped with digital devices Deeper interaction with customers

IMPLICATIONS		
BACK END -DATA STRATEGY		
DATA TYPOLOGY	TECHNOLOGIES ADOPTED	INTEGRATION DEGREE
Client personal details Geographical Product preferences Customer behaviours Online actives In-store path	CRM Business intelligence Blockchain	Early usage: single function Mature usage: integration among internal functions (BE&FE) Mature usage: integration among internal functions (BE&FE)

IMPLICATIONS

BACK END -VALUE CHAIN

TECHNOLOGIES ADOPTED	PROCUREMENT / SUPPLY
ERP WMS OMS Blockchain EDI	Suppliers visibility on store inventories Suppliers visibility on store sales Collaboration with suppliers

IMPLICATIONS

BACK END -VALUE CHAIN (OPERATIONS & LOGISTICS)

ORDER PROCESSING	INVENTORY MANAGEMENT	PICKING / SHIPPING / LAST MILE DELIVERY	RETURNS
Order priority Sales forecasting	In-store WH Automated WH /DC Integrated WH for online and offline Separated WH for online and offline	Centralized WH for online/offline Decentralized WH for online/offline Single DC Multiple DC Store as distribution centre or fulfillment center Orders leaving from suppliers' WH (Dropshipping) Outsource to 3PLs (or not)	Independent from purchase channel Dependent from purchase channel

IMPLICATIONS

ORGANISATIONAL ASPECTS / CHANGES

Employee training New omnichannel roles/functions New competences Incentive systems Silos eliminations New omnichannel roles/functions

Figure 4.7 Excel framework for the implications category

4.3.1 Front end

Starting with the front-end subsection, this includes 3 categories:

- new formats: the point of sale does not change only internally with the usage of multiple technologies, but new formats can be introduced too, each one with different purposes.
- physical spaces: the activation of new models and the merge with the online channels also entail changes at the physical level of the point of sale.
- personnel: many store-related modifications, inevitably have an impact also on the sales staff which can no longer deal with traditional sales activities only.

4.3.1.1 New formats

The Figure 4.8 below illustrates the various typologies of new formats mentioned in the scientific articles.

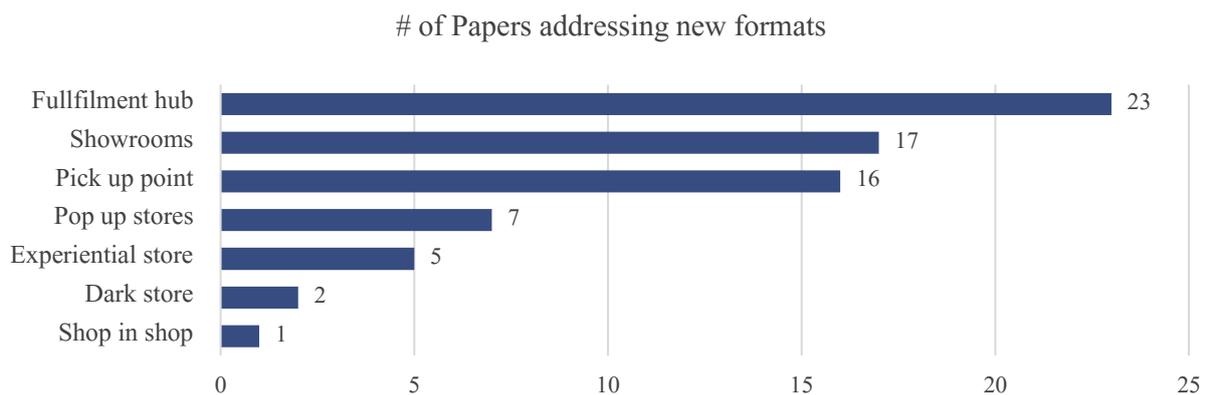


Figure 4.8 New formats tracked in the literature framework

Within this category a further distinction should be evidenced: some formats, such as experiential store, pop up store and shop in shop, are more focused on the *customer experience*; on the contrary, showroom, pick-up point, fulfilment hub and the dark store mainly support omnichannel from an *operational* point of view.

Starting from the “*customer experience*” group, particular attention should be posed to the showroom format. Treated by one third of the of papers, it represents an exhibition space where customers can view products and receive sales assistants’ advices but in which products cannot be bought. As indeed defined by Marco Melacini, Sara Perotti, Monica Rasini and Elena Tappia in the study *E-fulfilment and distribution in omnichannel Retailing: a systematic literature review*, the showroom represents a display point with no stock. Consequently,

one of the main reasons why academics place particular attention over this format is related to the possibility to reduce the store inventories and, therefore, the related inventory costs.

On the other side, even if the evidence gathered shows an increasing retailers' interest towards the showroom format, in the paper *What kind of in-store smart Retailing for an omnichannel real-life experience?* is evidenced how the store's role risks to be reduced to a simple showcase for the website offer. Christophe Bèzes, indeed, discusses how the added value usually represented by a physical point of sales over an online touchpoint – specifically, the possibility to immediately take away products after the payment phase – disappears in the showroom format, resulting in customers' disappointment.

Shifting to the second most mentioned format, *pop-up stores* – also known as temporary stores – represent, as the term suggests, point of sales which remain opened for a limited and pre-defined time window. Exactly for this reason, the products and experiences offered are often of an exclusive nature, including limited or personalized editions, which cannot be found in other Retail stores of the same brand. Here too, customers' engagement plays a fundamental role.

Continuing with the *experiential store*, the format has been encountered in the 9% of papers. The term comes from the Latin word *experientia*, derived from *experiri*, meaning to experience, to try, to experiment. It includes physical spaces where the experience is central to both the communication strategy and the buying process and in which customers are no longer spectators and passive buyers but become the protagonists and immerse themselves in the proposed activities, for discovering the brand at 360°.

Finally, the *shop in shop* format represents a brand-specific operational exhibition space located within another shop. This “mini” store represents a solution of discontinuity and exclusivity in contrast to the external environment, aiming to attract the attention of consumers and involve them in the brand offer.

An article that clearly describes experiential store spaces within omnichannel *Retail is Store of the future: Towards a (re)invention and (re)imagination of physical store space in an omnichannel context*, by Bethan Alexander and Marta Blazquez Cano. The authors, starting from a literature review, adopt an exploratory approach by interviewing 20 industry experts mainly operating in the fashion sector. All the respondents agree that formats such as pop-up stores, experiential stores, shop in shop and showroom perfectly embody the transition “*from merely transactional to multi-functional hybrid Retail spaces*”. Their adoption is considered

crucial to strengthen retailers' strategic position within omnichannel Retail, since they are best for encouraging customers to interact and forge strong emotional ties with the brand.

Shifting to the “operational” formats, fulfilment hubs, pick up points and dark stores should be considered. First, an aspect connecting the three formats should be clarified: all of them are provide support to the omnichannel models presented in the previous section.

Regarding the differences, instead, starting from the most mentioned typology, the *fulfilment hub* (42% of papers), as expressed by the multiple authors of the paper *A quantitative performance management framework for assessing omnichannel Retail supply chains* can also be referred to as “e-fulfilment centre”: the fulfilment activity of online orders starting from local stores instead of using a centralized warehouse, permits to increase responsiveness.

Particular attention is indeed posed to this format, as traditional brick and mortar stores, due to the rapid omnichannel evolution, increasingly have the possibility to modify their role into a “hub”, consequently becoming a focal point to integrate the distribution channels (*Examining Retail business model transformation: a longitudinal study of the transition to omnichannel order fulfilment*).

Specifically, as underlined in the paper - *Build touchpoints and they will come: transitioning to omnichannel Retailing* by Roy Larke, Mark Kilgour, Huw O'Connor, leveraging the stores network as a fulfilment system, results to be particularly good in case of low volumes of purchases; in the other cases, the model risks to become inefficient and to be one of the primary causes of out-of-stock issues.

Although many of the papers analyzed state that using the store as fulfilment and distribution center increases responsiveness and reduces warehouses costs, as previously introduced, many times its implementation can be challenging for retailers, as Bart L. MacCarthy, Lina Zhang and Luc Muyldermans say in the paper *Logistics outsourcing in omnichannel Retail*. In particular, the authors in the article focus on the importance of balancing picking rates to satisfy both online orders and in-store customers; indeed, merchants should be able to take the fulfilment times of online orders into account so as not to disrupt the walk-in customers' experience

With reference to *pick up points* – the second option in terms of number of papers analyzed (29%) – the main difference with respect the fulfilment hub is represented by the fact that orders aren't directly prepared using the POS' inventory. A clear distinction between the two models is evidenced in the paper above mentioned (*E-*

fulfilment and distribution in omnichannel Retailing: a systematic literature review) by Marco Melacini, Sara Perotti, Monica Rasini and Elena Tappia. While fulfilment hub option refers to an “immediate pick up in store”, thanks to which the online order is forwarded to the point of sale chosen by customer and the products bought are retrieved by the pickers directly from the store aisle, the pick-up point option represents a “*site-to-store*” model: the online order is supplied from the warehouse and sent to the store chosen by customer.

For completeness, citing the same paper, a further distinction is provided: the collection of online orders at specific location through pick up points can happen within the store, as just explained, but also outside the store perimeter. In this last case, two alternatives exist:

- parcel lockers – or locker points – representing automatic structures located in high-density shipments areas in which items can be collected 24/7;
- service points, so collection or return areas with people inside, which can be situated right outside of the store or in third party locations, as in existing outlets (convenience stores) but also in petrol and railway stations.

Finally, the *dark store* option – to date the least discussed by academics – include spaces dedicated just to the preparation and home delivery of online orders, while the typical part of the traditional store is missing.

An overview of the formats listed is provided by multiple authors in the paper *Logistics outsourcing in omnichannel Retail. State of practice and service recommendations*, a paper analysing how logistics service providers are involved in the logistics operations of omnichannel retailers.

Considering food retailers, omnichannel Retail is used to combine orders’ fulfilment in-store with fulfilment in a dedicated DC (or dark store), following a strategy of distribution centres separation. Indeed, when online volumes reach critical levels, fulfilment in-store is stopped – especially due to a lower productivity of the process – and to fulfil the demand coming from both channels retailers dispose of several distribution centres (DCs) dispersed on critical locations across the country: the strategy adopted is decentralization.

Considering instead non-food retailers, the most common order fulfilment strategy combines the usage of a centralized DC with a dark store: the centralized DC carries stock for stores replenishment and, from here, stock for online orders is shipped to the dark store. Non-food retailers can eventually open their store’s stock –

becoming consequently a fulfilment hub – in case consumers choose to pick up in store with a click&collect or click and reserve model.

4.3.1.2 Physical spaces

Referring to physical space changes, from the literature it emerged that the biggest changes – in order of diffusion between academics – concern: the introduction of areas where customers pick up or place online orders; the modification of stores' size; the introduction of spaces dedicated to sociality and services for customers; finally, the modification of the layout of the store with a focus on the arrangement of products.

In the Figure 4.9 below it can be seen how often the various changes have been mentioned by academics.

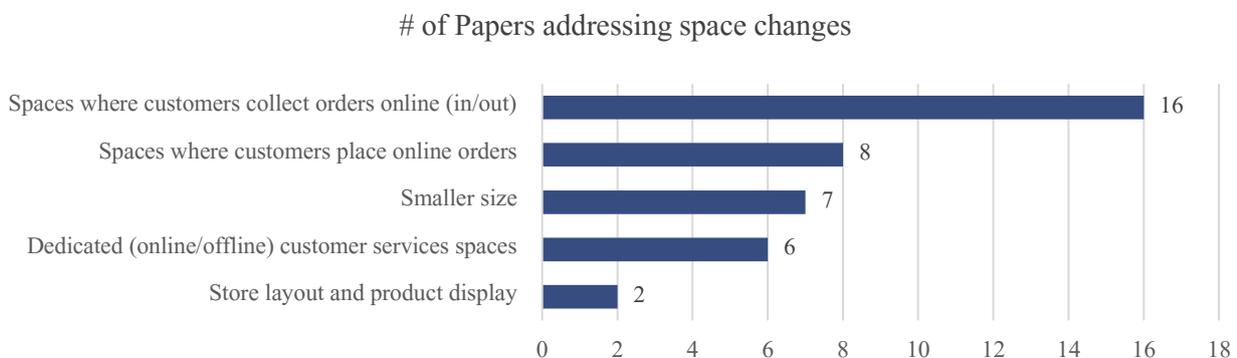


Figure 4.9 Store space changes tracked in the literature framework

These analyses represent a different facet and consequence of the models and formats seen above.

Spaces where customers can place or collect online orders – e.g., in store kiosks –, are created following the introduction of models such as online selling in store and click&collect, respectively.

Smaller size is either a consequence of the use of the store as a display point, thus reducing the space needed for the warehouse and the inventory, or it is due to retailers' willingness to become more responsive and to satisfy customers' need of immediacy and proximity.

Dedicated areas for client services are typical of experiential formats. In addition, as evidenced in the paper *Build touchpoints and they will come: transitioning to omnichannel Retailing* by Roy Larke, Mark Kilgour and Huw O'Connor, the store is increasingly seen as "customer service" touchpoint: in-store terminals and call centres are fundamental for guaranteeing pre and post purchase information services, as well as products' return support, especially in an omnichannel optic.

Finally, changes related to the store layout are mainly linked to the use of the store as a fulfilment point in case online ordered products are taken by staff directly from the shelves. In this case, indeed, retailers must make a strategic assessment of how to position the products, based on each single case: display-oriented against fulfilment-oriented (*Investigating the influential factors of return channel loyalty in omnichannel Retailing*).

4.3.1.3 Personnel

The last category of front-end implications, addressed by the 33% of paper analysed, concerns the role of store associates. As stated by D.K. Gauri et al (2021) “*sales associate is the human face of a Retailer and a key differentiator*”.

In the paper just mentioned, entitled *Evolution of Retail formats: Past, present, and future*, interesting insights can be drawn about the new roles of the personnel in store. The authors point out the necessity for employees to be properly trained to deeply entertain clients and provide an enjoyable customer experience. To this end, they can also take advantage of innovative available resources, such as tablets empowered with recommendation systems based on artificial intelligence technologies. In this way, store associates can have a complete picture of customer data and behaviours and they can provide suggestions as customized as possible.

In addition, with reference to the establishment of a stronger “sales assistant – customer” relationship, according to in the paper *An analysis of factors influencing omnichannel Retailing adoption using ISM-DEMATEL approach: an Indian perspective*, store employees which are able to educate and encourage customers in adopting omnichannel models and technologies should receive incentives. In this way sales staff will not perceive the merger of the two channels as a threat but as a goal to pursue.

The other personnel-related activities emerged are the ones concerning the preparation of online orders and remote sales activities. While the first derives from the usage of the store as a fulfilment hub as well as home delivery options, the second is a consequence of the introduction of videocalls and instant messaging platforms as new sales channels.

A direct point of contact – even remote – between the customer and the sale assistant, as reported by Salvatore Parise, Patricia J. Guinan and Ron Kafka, allows to provide immediate support to clients and to create a very strong bond with them, generating a high customer lifetime value.

4.3.2 Back end

The second subsection deals with the back-end implications of an omnichannel strategy. More precisely, the first part concerns the data strategy; the second part focuses in detail on the entire value chain from the procurement phase to the delivery and return phases.

4.3.2.1 Data strategy

"Omnichannel business generates a huge amount of data that facilitates forecasting [...] and facilitate firms to understand their customers" With this statement, reported in the paper *An analysis of factors influencing omnichannel Retailing adoption using ISM-DEMATEL approach: an Indian perspective on data*, the author Ruchi Mishra affirms how having a great amount of information about consumers and their buying habits allows companies to monitor the experience, the satisfaction degree and the loyalty of clients.

This subsection, consequently, aims to investigate which are:

- the typologies of customers' data that retailers collect or should collect;
- the software solutions adopted to process the collected data;
- the degree of integration of actors along the supply chain in terms of data management.

An article that clearly clarifies the first point above mentioned is *Blurring the Lines between Physical and Digital Spaces: Business Model Innovation in Retailing* by Milan Jucevski. The author highlights three types of customer data to which retailers should place particular attention:

- *Transactional data*: related to purchase information such as the place where the payment takes place, the billing address, and customers personal data.
- *Hardware sensor data*: these data, to be collected, require the presence of sensors such as RFID solutions inside the store which allow to monitor customers location and in store paths.
- *Interactions data*: this final category includes data directly provided by customers, for example by filling satisfaction surveys or responding to one-to-one interviews.

Mere data collection is not enough: the information gathered must then be used as input to both optimize back-end processes and to improve the customer experience. As a result, as the literature shows, solutions which allow retailers to collect data in a single platform before processing and using them are key.

Several authors have claimed the importance for retailers to centralize data wrapped in different touchpoints into a single database to optimize and facilitate the analysis phases. Larke et al., in the paper *Build touchpoints and they will come: transitioning to omnichannel Retailing*, state that, for omnichannel retailers to work at their best and ensure an increasingly efficient information exchange, a fundamental driver is the development of a database which integrates information coming from online and offline channels as well as between internal and external touchpoints.

Marina Meireles Pereira and Enzo Morosini Frazzon are of the same thought and deepen even more the degree of integration; in the paper *A data-driven approach to adaptive synchronization of demand and supply in omnichannel Retail supply chains*, the authors repeatedly state that sharing information across the entire supply chain allows to create a win-win situation for all the actors involved. Specifically, increasing end-to-end transparency leads to more efficient material handling at every node, better order control, higher levels of coordination, ultimately resulting in a reduction in total costs.

More precisely, regarding technological solutions to collect and process data:

- *CRM*: treated in 15% of the articles analyzed in the scientific literature, are software for managing customer relationships, useful to organize contact information, manage relationships, track interactions and track the entire experience online and offline with current customers, potential one and other contacts.
- *Business intelligence (BI)* tools, which emerge with a frequency of 11%, are types of application software through which companies can collect large amounts of unstructured data from internal and external systems and process them to make strategic decisions.
- Finally, systems based on *Blockchain technologies*, mentioned in the 6% of scientific papers, allow the creation and management of large databases able to manage transactions shared between multiple nodes of a network.

As for the degree of involvement in data usage of different actors along the supply chain, the trend is significant: no paper considers the use of data limited to a single business function as profitable; 11% of the papers analyses the case of data sharing between the internal functions of a company; finally, 13% of the papers - with a view

to greater integration – analyses the case in which data are shared along the entire supply chain, so that all actors can have complete visibility and could take real time data-driven decisions.

Shared use of a database among supply chain partners enables the exchange of up-to-date and accurate data on products; as reported by the paper *From ambition to action: How to achieve integration in omnichannel?* a step further involves the use of barcodes or RFID solutions to reduce the time required to update the data and possible errors related to the human factor.

4.3.2.2 Value chain

Value chain is the second subsection of the back-end implications area. To conduct an in-depth analysis, the topics included within both primary and support activities of *Porter's value chain* have been examined, with some variations to make the model most suitable for the study.

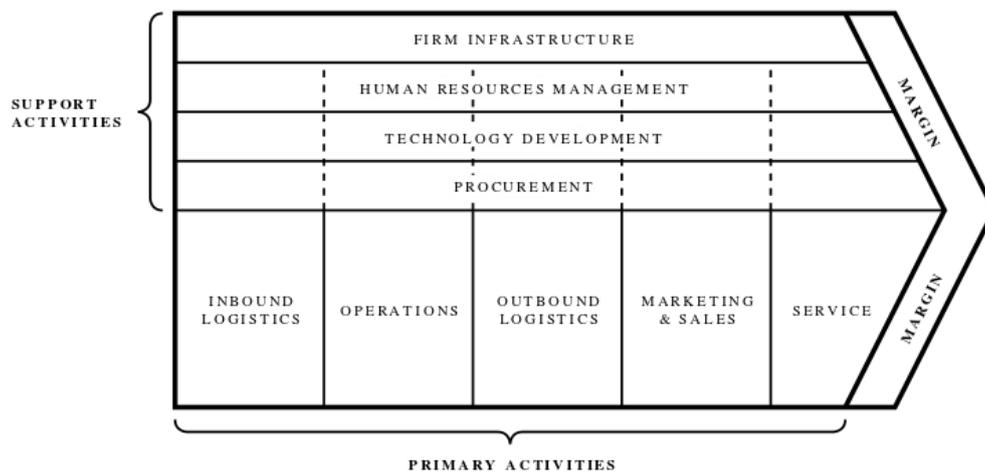


Figure 4.10 Porter value chain

Starting from the Figure 4.10 above disclosed, the *value chain area* has been divided into three main sections:

- *Technologies adopted*: including all the software solutions introduced by companies to manage efficiently and effectively the omnichannel value chain activities, which complement the category previously discussed within data section.
- *Procurement & supply*: referring to the management of procurement activities and, especially, to the cooperation levels and information disclosure with and towards suppliers, in case of a complex omnichannel supply chain.

- *Operations and logistics*: while the two previous categories are related to one specific topic each, this area incorporates multiple themes. Its structure has been built following the flow suggested by Porter's value chain model and, concurrently, reasoning in terms of *activities to fulfil* in case an "omnichannel order" is placed, taking a retailer's viewpoint. Specifically, the categories that will be investigated in the analysis are order processing, inventory management, picking/shipping/last mile delivery and returns management.

Therefore, to make an overall parallelism, these topics cover all the *primary activities* – except marketing – included within Porter's value chain: from inbound logistics to operations, as a wide-ranging topic, and from outbound logistics to services (which in this case is represented by returns.) Each one of the mentioned sections is then composed by a list of complementary or contrasting topics that retailers can choose to implement when constructing or improving their omnichannel strategy.

It is also worth specifying that – in addition to procurement and technology development above mentioned – the *support activities* concerning human resource management have already been included in previous scientific literature steps, within personnel activities analysis.

The firm's infrastructure analysis will instead be discussed in the remaining part of the work, when the organizational implications arising from the omnichannel strategy implementation will be examined.

For completeness, the same reasoning can be done for the *primary activity* of marketing, which has already indirectly been addressed when discussing promotional policies and loyalty plans management within strategy area.

Technologies adopted

As for the data subsection, papers' analysis showed the importance for retailers to have software to support back-end operational processes. Consequently, five main solutions have been identified: ERP (11% of the articles), WMS (6%), OMS (7%), Blockchain (11%), EDI (2%).

Since these solutions are useful to support *specific or multiple activities* of the value chain, they will be mentioned from time to time in the next sections to better clarify their usefulness related to the activity supported.

Procurement

Regarding the phase of procurement, scientific literature has shown that retailers should pursue upstream integration in the supply chain. Collaboration with suppliers, supported by the integration of technological platforms, enables greater transparency, increases product traceability, optimizes inventory levels by reducing the risk of out-of-stock and, finally, improves the assortment management of different channels. (*An analysis of factors influencing omnichannel Retailing adoption using ISM-DEMATEL approach: an Indian perspective*)

Operations & Logistics

A fundamental paper to investigate the remaining topics within operations and logistics category, is article *Retail logistics in the transition from multi-channel to omnichannel* by Alexander Hübner, Johannes Wollenburg and Andreas Holzapfel: the study indeed clearly addresses the shift from a multichannel to an omnichannel management of logistics activities and so, considering the Figure 4.11 below, the transition from a model characterized as the first picture (multi-channel logistics) to the second one (omnichannel logistics).

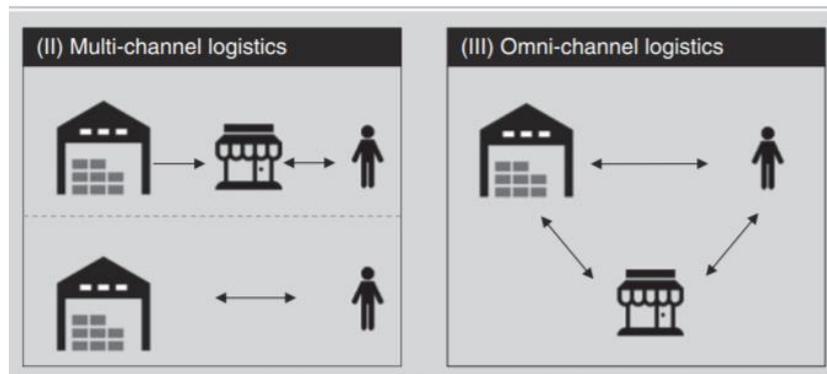


Figure 4.11 Transition from multichannel to omnichannel logistics (Source: *Retail logistics in the transition from multi-channel to omnichannel*)

The authors of the paper conducted an exploratory survey on 60 internationally active retailers and experts from Germany, addressing the following research question: *How and why retailers transit from MC to OC logistics*. What emerged from the survey has been divided into 3 macro-categories; each of them has consequently been treated in detail:

- inventory, picking and assortment;
- delivery and return;
- organization and IT systems;

Starting from the first category, the authors present 3 possible alternatives to manage the inventory and the picking phase related to online and offline channels. The Figure 4.12 below represents the alternatives.

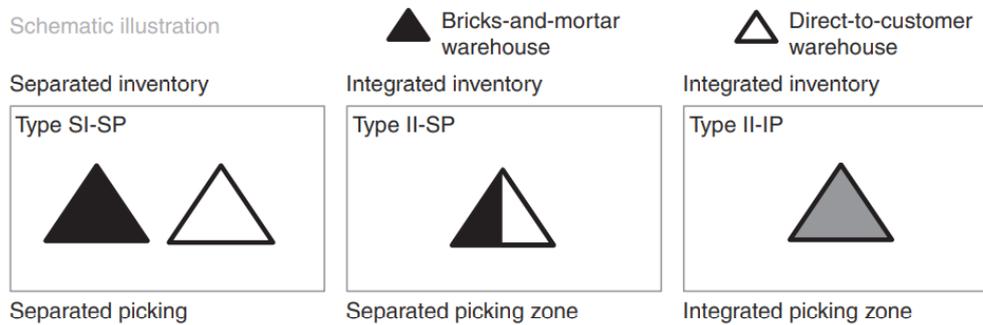


Figure 4.12 Overview of warehouse types in Retailing (Source: Retail logistics in the transition from multi-channel to omnichannel)

More than a half of the respondents to the survey claimed to adopt an *integrated management* of the online and offline channels inventory. Among the main benefits experienced there are an overall reduction of the stock levels – due to the possibility to achieve compensation effects – combined with a greater flexibility. Additionally, even retailers that have recently adopted more than one channel to sell products have expressed their willingness to move towards a more integrated management of the stock.

The 60% of the retailers that integrate stocks, do not separate the picking area by channels and, moreover, use the same personnel to pick orders of both channels. Experts too, confirm that this solution leads to greater warehouse efficiency.

The only aspect on which there is no general agreement is the *picking time*: about 75% of retailers pick for the two channels at the same time, while the remaining ones prefer to dedicate specific time slots to the different channels.

Shifting to the shipping and delivery issues, 70% of the surveyed retailers use omnichannel models to deliver orders – such as BOPS and ROPS services – allowing customers to order online and collect purchases in store; precisely, 81% of these merchants agree on the fact that these services should be offered free of charge.

A quarter of the retailers offer the book&collect service: this model, being a “reservation of items”, involves a greater integration between inventory levels in the warehouse and inventory levels in store, which consequently increase availability as more sources are used.

As concerns returns, the experts interviewed state that "*the option to return orders across channels is mandatory for OC retailers*"; on the Retailer side 77% of them offer this service. For its management, two thirds of retailers decide to add the products returned to store inventories, to avoid additional transportation and handling costs.

The last category covered in the article refer to organization and IT. Almost all retailers and experts (81% and 90% respectively) agree that when the logistics of online and offline channels is managed and controlled in an integrated manner by a single business unit, a higher level of efficiency is achieved. As a result, even the most reluctant retailers who are used to operate with channel-separated organizational units are breaking down existing silos by merging the various functions.

Considering instead IT systems to support efficient logistics from an omnichannel perspective, all retailers and experts share the idea that customers should be able to *check inventory availability* of both the online channel and the physical store. 85% of retailers offering this functionality affirm that collaboration between the *ERP systems* of the two channels, or better, a single ERP system, is essential to work properly; 70% of retailers that integrate inventory indeed also has a single ERP system with real time information for both channels.

The Figure 4.13 below, provided by the paper, is useful to summarize the outcomes of the survey. It is evident how the transaction towards an omnichannel strategy implies a greater integration in various logistics aspects.

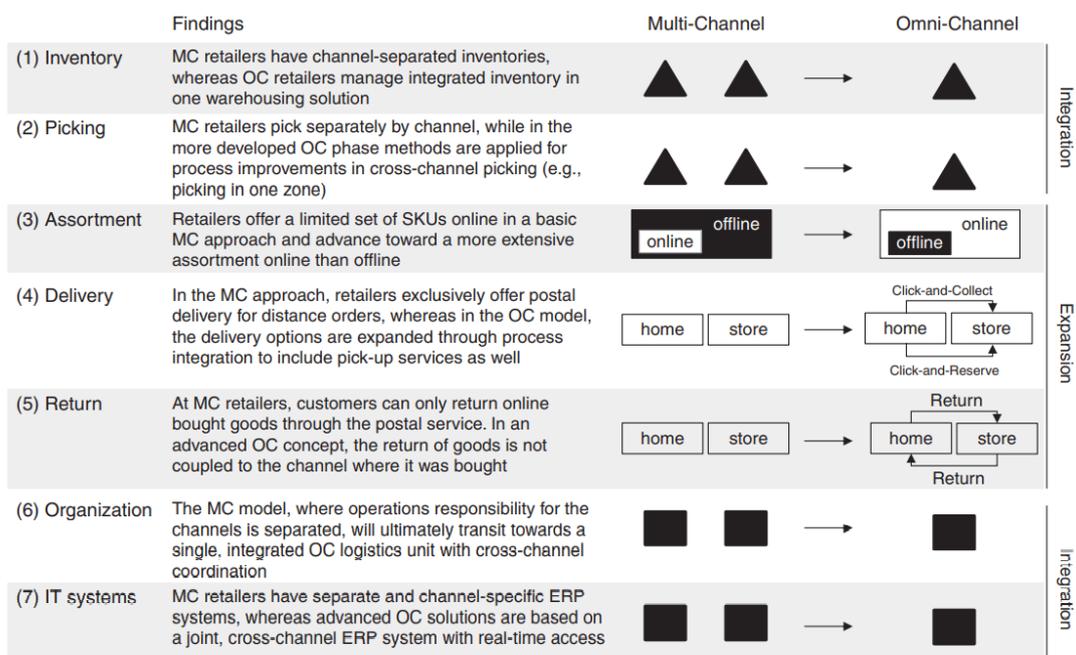


Figure 4.13 Framework of the transition from multichannel to omnichannel logistics (Source: Retail logistics in the transition from multi-channel to omnichannel)

4.3.3 Organisational aspects/changes

The last subsection analysed in the implication section regards organizational aspects. A hint of it has already been given in the previous section relative to the management of the functions tied to logistics; below the main organizational changes emerged from the analysis of the literature will be presented.

At the *micro-level*, considering the *people* inside the company, three areas of change closely linked to each other can be identified. An omnichannel strategy might lead either to the introduction of new roles (9%) or to job enlargement situations due to requests of new competences (31%). In both cases, a certain level of staff training is needed (12%).

Mentioning again the paper *An analysis of factors influencing omnichannel Retailing adoption using ISM-DEMATEL approach: an Indian perspective*, the author explains how, for a proper success of the omnichannel strategy, not only front-end activities are key to train. The paper indeed reports the case of how an Indian apparel company (named ABC in the paper) has decided to educate its staff using a “role play methodology”: as cited, “ABC gave the training to store staff on omnichannel service that has proven to be commercially rewarding through high conversion rates and net sales”.

This included additional training on technical activities, among which the process of order-fulfil-handover items to the LSPs, as well as the management of returns and a guidance about the usage of the available payment methods.

At *macro-level*, considering the *functions* within an organization, the main changes concern: the creation of incentive systems to avoid internal conflicts between different channels (4%), the breaking of the existing silos within the organization to work in a more a fluid and integrated manner (26%) and the introduction of mechanisms to allow cross-functional collaboration between the different business units (2%).

Omnichannel models in which several channels are used to complete the purchase, such as click&collect, can give rise to internal conflicts between the two channels, since it is not always clearly defined if the sale should be assigned to the online or offline channel. Gao and Su (2017), for example, finds that in case of click&collect or book&collect, sales must be distributed fairly between the two channels, as both play an important role in the purchase process.

In the article *The future of omnichannel Retail: A four-stage Delphi study* is stated that, in order to integrate the available channels, it is necessary to breakdown organizational silos; indeed, one of the main obstacles highlighted by the experts in omnichannel transaction lies in the integration of “*all organizational functions through cross-departmental collaboration*”.

Eliminations of silos is not limited to existing barriers within an organization, but the concept must be extended to the entire supply chain. Won-jun Lee, in the paper *Unravelling Consumer Responses to Omnichannel Approach*, states that to improve the service level and to create a competitive advantage, retailers should increase end-to-end transparency in the supply chain by breaking existing organizational silos with suppliers.

4.4 Barriers

After having described all the dimensions of the literature analysis framework, the last section provides an investigation of the main barriers emerging in the shift towards an omnichannel approach. The Excel framework corresponding to this part is reported in the Figure 4.14 below.

LIMITS	
CUSTOMER SIDE	RETAILER SIDE
<ul style="list-style-type: none"> Privacy and security issues Segmentation perception between (online/offline) channels Virtual vs physical experience Customers skepticism (of digital devices) Customers preference change in time Customers service compliants 	<ul style="list-style-type: none"> Cannibalization among channels Attitude barriers Internal skills barriers Lack of incentives Conflicts among employees / functions Technological barriers High investments needed

Figure 4.14 Excel framework for the limits part

The barriers are divided into two sections: first, the main drawbacks on the consumer side are analysed; then the focus is placed on the barriers experienced by retailers.

Starting from the customer side, barriers often encountered in the analysed papers are related to privacy and the use of personal data; moreover, sometimes customers may be reluctant to pursue an hybrid shopping journey because of the less involving experience of online channels or the no complete integration of these with offline

ones. Finally, clients' scepticism towards new digital technologies is another issue mentioned in the papers. The Figure 4.15 below reports the barriers from a customer point of view.

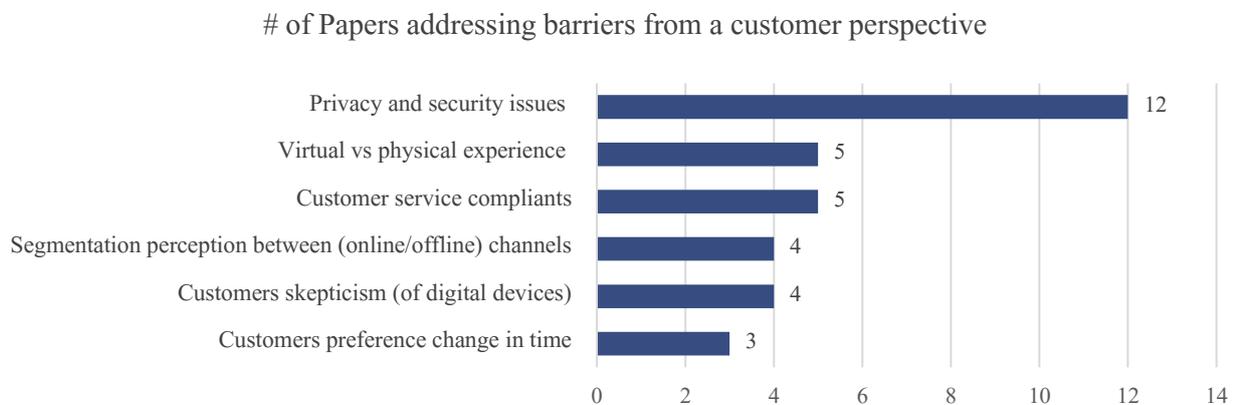


Figure 4.15 Barriers emerged from the scientific literature from a customer point of view

Together with the analysis of in-store technologies, the article *Shopper-Facing Retail Technology: A Retailer Adoption Decision Framework Incorporating Shopper Attitudes and Privacy Concerns*, provides also interesting information on the privacy issue, which is also the most frequently covered in the scientific articles reviewed. Using new technological solutions in-store brings many positive results but risks threatening the privacy of customers who are increasingly concerned about their personal data.

The authors in the article state that customers' privacy concern is linked to three main factors:

- the collection of personal data;
- the use of personal data;
- the knowledge on how personal data and privacy practices are managed by companies;

The study conducted in the article showed that consumers tend to be less concerned about their privacy when the benefits deriving from using the technologies that exploit their personal information become significant.

Since companies considered safe and reliable in terms of data collection gain greater competitive advantage, retailers should seriously consider this issue and evaluate the trade-off between collecting customer data and maintain a high degree of customer satisfaction not invading their privacy.

Another important factor of customers dissatisfaction is tied to the different purchase experiences that characterize the two channels. What is most affected is the lack of physical experience of the online channel,

which also has an important impact for retailers. As reported in the paper *Investigating the influential factors of return channel loyalty in omnichannel Retailing*, the inability to touch or try the products while shopping online is a primary factor for higher returns. Indeed, in the United States, returns totalling \$100 billion are made each year due to customer dissatisfaction with the order.

The analysis of the barriers that hinder omnichannel is the final section of the framework. The main obstacles that can arise are:

- the risk of cannibalization between the two sales channels;
- the internal conflicts that may arise between different employees or functions;
- staff in existing channels perceiving the new channel as a threat to their sales and income;
- the aversion to change that affects companies;
- the lack of internal skills;
- technological barriers;
- economic barriers, since large investments are required.

In the Figure 4.16 below is highlighted the number of articles that have dealt with these factors.

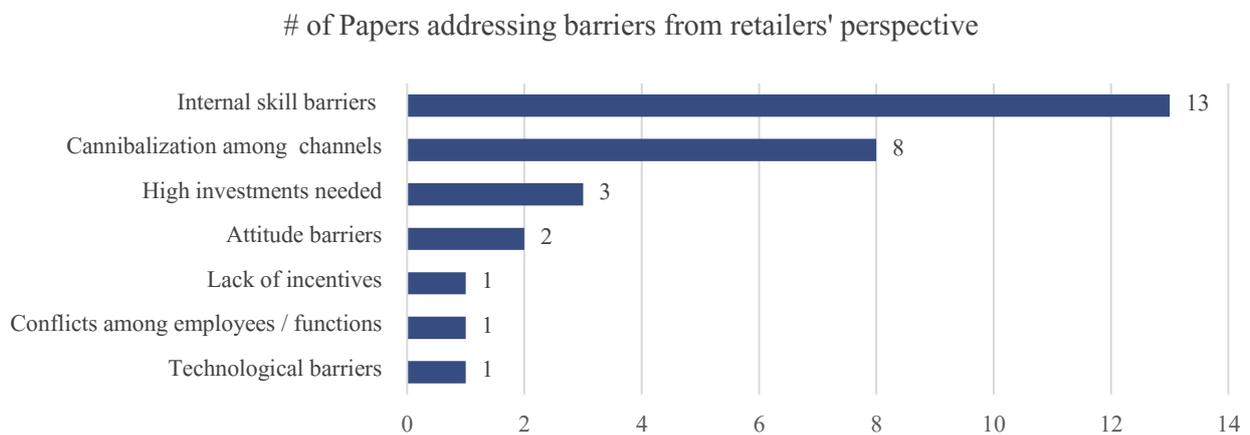


Figure 4.16 Barriers emerged from the scientific literature from a Retailer point of view

About the first factors, important evidence is found in the paper *Drivers and barriers of omnichannel Retailing in China: A case study of the fashion and apparel industry*. The authors Kwok Hung Lau and Leon Kok Yang Teo have conducted a case study investigating the omnichannel transition of two established Chinese retailers operating in the fashion industry. One of the two companies examined reported significant conflicts between

different channels: in particular what use to exacerbate the conflicts was that sales campaigns in the online channel tend to offer greater discounts and more convenient promotions for customers, consequently affecting the profitability of offline channels. This creates conflict between employees, as sellers in existing stores see the new channel as a threat to their sales, increasing associates aversion to omnichannel.

Finally, although the adoption of an omnichannel strategy allows to provide a pleasing shopping experience, this requires important investments from retailers' side. Often it is necessary to allocate more resources, and logistic and administrative costs increase to ensure services such as same day delivery or free returns (*From ambition to action: How to achieve integration in omnichannel?*). Finally, the introduction of new technologies in store and integrated systems to support operations represent extra costs for the company, too.

5. NON-SCIENTIFIC LITERATURE

After having analyzed in detail the papers coming from the scientific literature and investigated the outcomes of the single areas of interest, in this section the focus of the analysis moves to the non-scientific literature. The process followed for the selection and classification of articles is identical to the one explained before for academic papers. The articles considered in this chapter mainly come from the major consulting companies such as *McKinsey*, *Bain & Co*, *KPMG*, *Deloitte*, *Boston Consulting Group*, *Accenture* and *PwC*. These sources, compared to the scientific literature, are able to provide an overview of the current state of the Retail context and on the main trends.

In total have been analyzed 27 articles. Considering the methodology adopted, they generally take a more qualitative and descriptive perspective as compared to papers coming from the scientific literature; the few studies addressing topics from a quantitative point of view are mainly surveys conducted on end-customers or on merchants. The Figure 5.1 clearly highlights the disparity between the methodologies used.

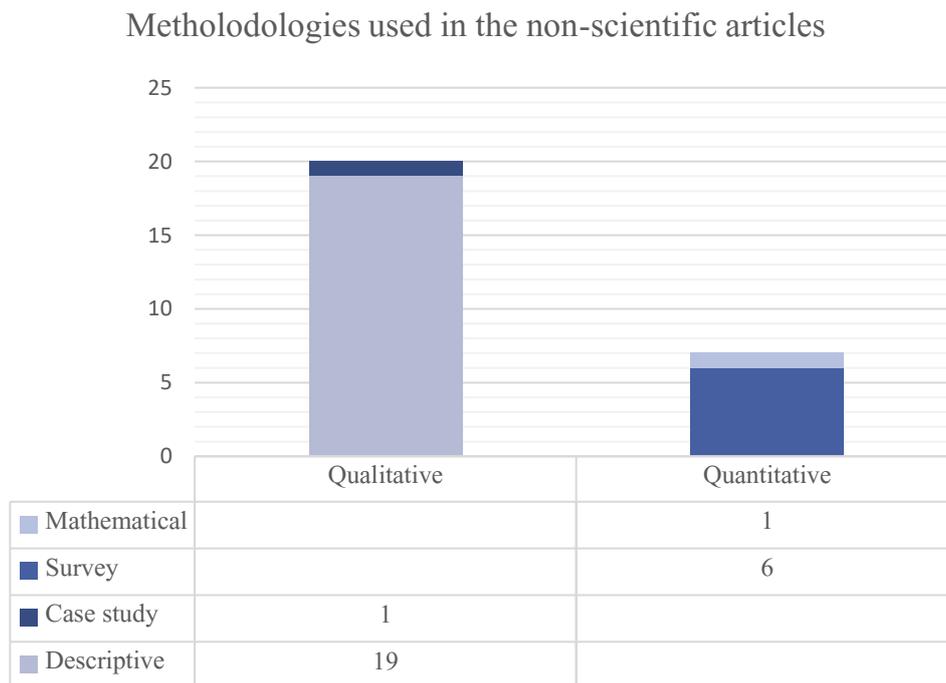


Figure 5.1 qualitative and quantitative non-scientific articles

Since the framework is the same, even in this case it is possible to note how the various papers analyzed are distributed and cover the three focuses of analysis: *strategic decisions*, *implementation*, and *implications*.

In particular, as can be seen in the figure below, just 4 articles (15%) refer to one specific topic: specifically 1 article is about strategic decisions, 2 about implementation and 1 about implications. The majority of the articles, instead, covers two or three areas: more precisely, 9 articles cover all the topics of analysis; the remaining 13 combine two out of three areas - 3 combine strategic decisions and implementation, 7 combine strategic decisions and implications and 3 implementation and implications. This confirms again how the subjects covered and the areas of investigation are strongly linked and essential to each other. The Figure 5.2 represent graphically what just said.

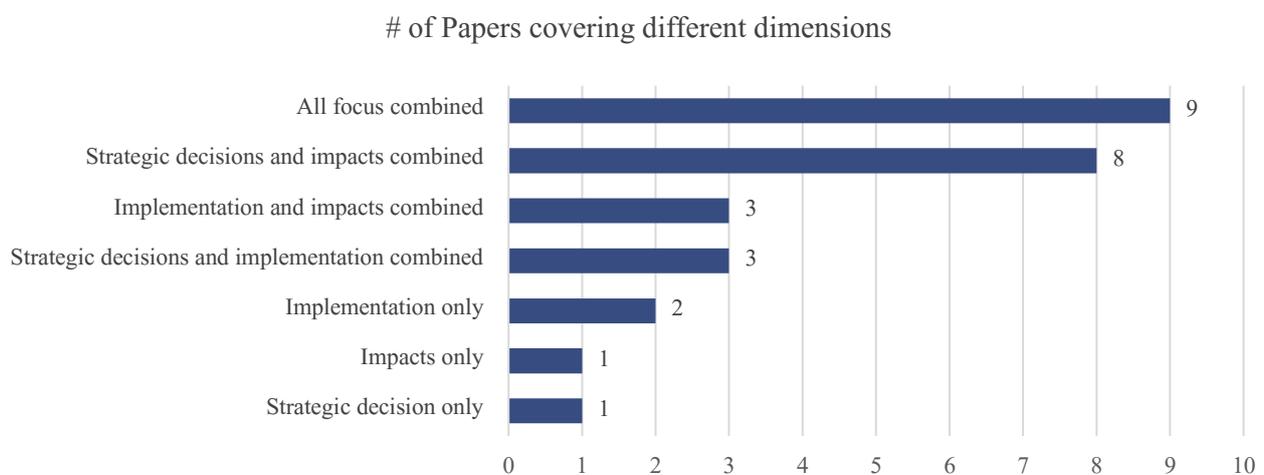


Figure 5.2 Articles classification according to macro-categories addressed

As for the industry on which the articles focus, all 26 papers analysed do not refer to a specific industry but investigate the Retail world in general; consequently, a distinction concerning sectors will not be done.

Proceeding with the study of the non-scientific literature, the main aspects that the application of an omnichannel strategy influences will be presented and for each of them the most representative and exhaustive articles will be mentioned.

More precisely, the main arguments that will be examined in detail are:

- Data strategy aspects
- Operations and organizational aspects
- Impacts on the point of sale
- Barriers to omnichannel

5.1 Data strategy

As the number of distribution channels increases, so does the amount of consumer data that retailers can collect. The biggest challenge for managers of Retail companies is understanding what data to collect and how best to integrate, process and use them. Customers are more and more demanding, and expect to be recognized when entering a store or while browsing an online channel, as they increasingly ask for individual experiences and recommendations. Therefore, it is imperative that retailers leverage customer data to improve Retail activities, to better position themselves in the new Retail landscape, to gain a competitive advantage, and achieve sustainable growth.

A sentence that well summarizes the centrality of data within an omnichannel strategy is reported by PwC in the report *Customers are calling the shots: It's time for retailers to get fit for the digital age* presenting the results of the survey conducted with SAP in 2016; the Big 4 company presents data as "the new value asset that when interpreted properly it can deliver the right experience as well as bring new consumers through retailers' doors".

To learn more about this data section, it is interesting to mention *Digital transformation through data*, a study commissioned by Google conducted by Deloitte in 2019.

The report exhibits a *Data Activation* framework (Figure 5.3) that summarizes the steps a retailer must take before achieving optimal levels of data maturity that will benefit the business.

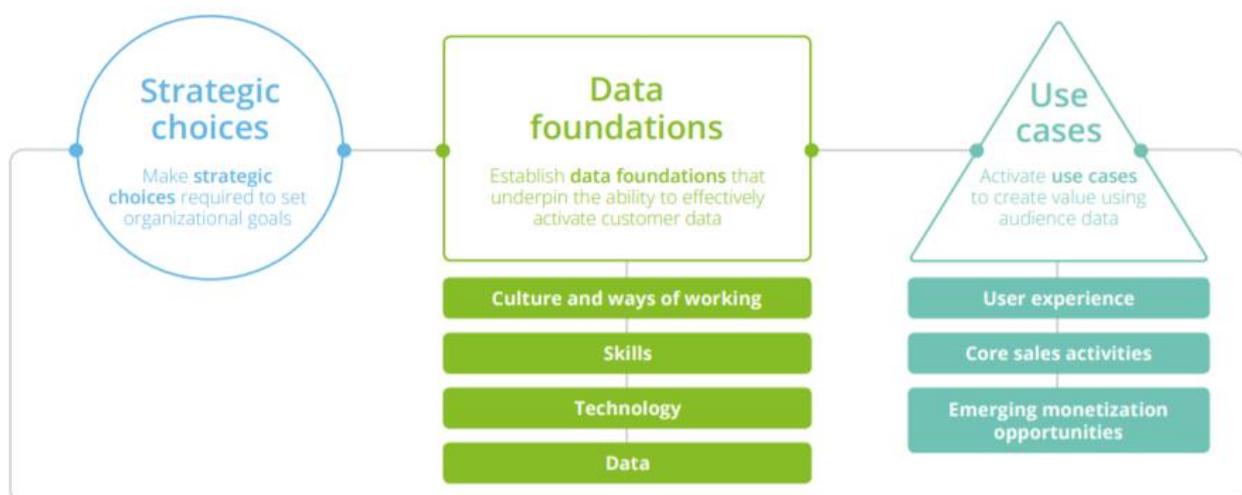


Figure 5.3 Data Activation Framework; Source: *Digital transformation through data* (Deloitte)

First, retailers must define in advance the objectives they want to achieve in order to prioritize investments and plan the subsequent activities.

After an initial phase of selecting the data strategy, the next step includes the definition of the necessary foundations for implementation. According to Deloitte, there are 4 main points to consider:

- *Culture and ways of working*: a company must create an environment conducive to data-driven decision-making, that encourages cross-functional work and collaboration; up to this point, it is necessary to establish goals related to KPIs shared by multiple teams and to create mechanisms that require the intervention of more than one business function.
- *Skills*: data-driven way of working requires “*unique skill sets, including some highly technical skills*”. So, organizations need to recruit and grow individuals who specialize in data management. It is anyhow key that these people do not work independently: on the opposite, the “data team” must be integrated with the rest of the company.
- *Technology*: to collect data from multiple touchpoints online and offline and to turn raw data into actionable insights, it is necessary to use technological solutions that can collect and process them in an integrated way and make them accessible to everyone within the organization. The most widespread Retail solutions include, on the one hand, collection and organization systems – from data warehouse, CRM, data management platform – up to the most complex reporting and analytics tools; on the other side, there are artificial intelligence and machine learning solutions, capable of extracting the most useful insights from the input data provided.
- *Data*: the last important point to consider are data itself. Understanding what kinds of data are available to retailers is critical: these can be first-party data, collected directly from customers – such as historical purchases – or third-party data, not coming directly from customers but collected or bought from external sources. Regardless of the source, data can be classified into four categories: account, location, browsing data (customer behaviour on the website and on the mobile app) and profile data (data from additional sources that help to better define the profile of the customer).

The last step consists to “*drive value through more effective application of customer data*” and the top three main operational goals are:

- *Improve the user experience*: retailers can leverage customer browsing and purchasing data to tailor user interface and therefore improve the browsing experience.
- *Enhance core sales activities*: retailers can identify and elaborate customer historical preferences and behaviour with the ultimate goal of increasing conversion rate, basket size and purchase frequency. This can be done by optimizing the product assortment, providing product recommendations, targeting customers with the best advertising for them and finally introducing incentives to improve loyalty.
- *Engage in emerging monetization opportunities*: based on the data collected, retailers can optimize investments in media assets, both to guide in-store purchasing decisions and to drive to store those customers who are more reluctant to buy online.

5.2 Operational and organizational aspects

Operations can be defined as the set of processes that, from an integrated supply chain perspective, contribute to realize and deliver value to the customer. Therefore, are considered part of the operations the functions that take care of: procurement and supply – since also suppliers are an active part of the value chain – production, logistics and post-sale.

To analyse this section, it is significant the article *Into the fast lane: How to master the omnichannel supply chain* written by Claudia Graf, Tim Lange, Andreas Seyfert, and Noortje van der Wijden in July 2021 and published by McKinsey. The paper summarizes in seven building blocks – represented in the Figure 5.4 – the main characteristics than make an omnichannel supply chain efficient.

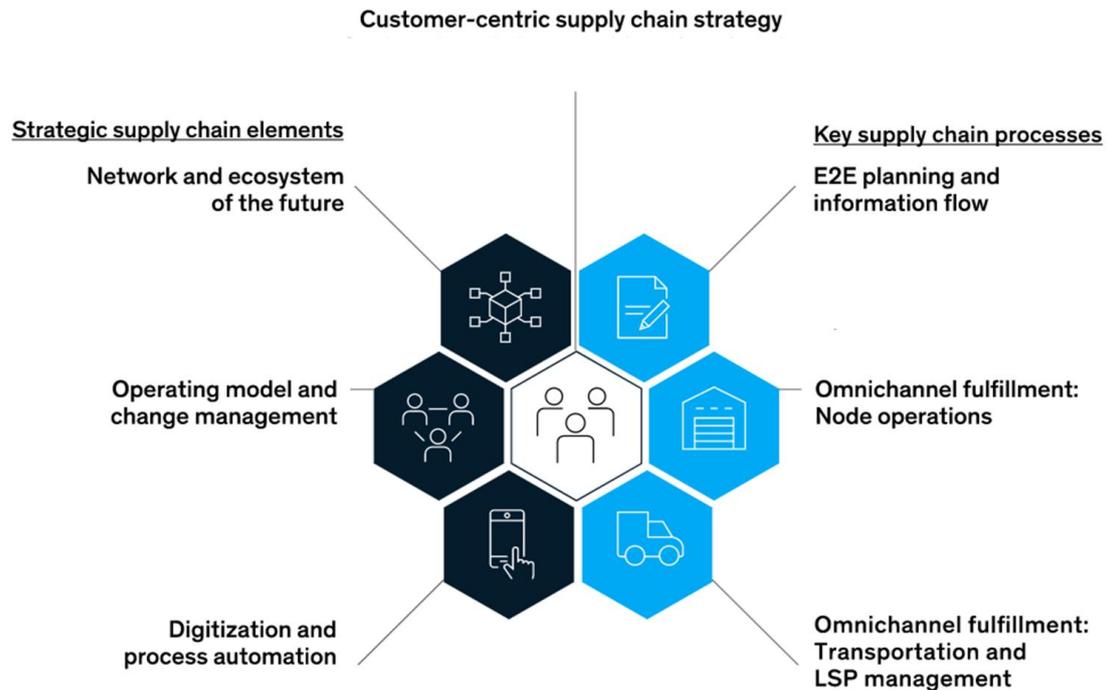


Figure 5.4 seven essential building blocks for the omnichannel supply chain of the future; Source: *Into the fast lane: How to master the omnichannel supply chain* (McKinsey)

Customer-centricity is one of the cornerstones of the omnichannel strategy: the entire supply chain must constantly evolve so that its customers can have an equally satisfying shopping experience, regardless of the purchasing channel.

To align with what has been previously stated, it is essential that the company first develops a detailed understanding of customers by leveraging data, then builds various customer segments based on the collected preferences and finally addresses specific needs providing a personalized customer experience.

To support this important objective, it is necessary to analyze three *strategic* supply chain elements and three key supply chain *processes*.

Starting from the strategic part, the first point highlights the importance of creating “*a network and an ecosystem of the future*”. This means that retailers should collaborate with all the players throughout the supply chain, from suppliers to customers, not only for the variety of capabilities that the network can provide but also as a driver for innovation. An example of cooperation from a logistical point of view - cited by McKinsey - is that of Adidas and Zalando: the two retailers share a pool of inventories to increase products availability on different channels and to raise the level of efficiency.

Second, it highlights the importance of *involving the entire organization in omnichannel transformation*. To break down existing silos it is necessary to form cross-functional teams within the company and encourage all the actors to proactively engage in the needed changes.

It is clear that collecting and using customer data, but also creating collaboration within the company and throughout the entire value chain, requires *advanced and integrated technologies and systems* able to provide real-time information and facilitate management and decision making.

Moving towards the part related to processes, the shift to omnichannel involves an increase in the level of difficulty in operational management

The increase in the number of channels from which clients' orders can come, and the higher expectations of customers who want to have products available everywhere and anytime, requires an *end-to-end planning and information flow*. Both forecasting and inventory planning should be managed uniquely, without taking into account channels. According to the forecast, an optimal level of stock should be defined at each node of the value chain and it should cover both channels' needs maximizing cross-channel availability.

Omnichannel players should consider also the fulfillment network (*node operations*) to handle complexity and keep cost competitive while maintaining a high level of service. In the management of the physical flow, however, the differences characterizing the channels should not be ignored: for example, the eCommerce channel generally requires smaller quantities and shorter delivery times compared to the store. To address this additional difficulty, retailers can turn to automated warehouses, which are a good option to improve speed and efficiency.

A direct consequence of what has just been explained is the increasing difficulty in the management of *transportation and logistics-service providers (LSP)*. This, once again, requires efficient IT systems and a reliable partnership with third-party logistics actors, able to deliver orders quickly and in small quantities, using often points of sales as fulfillment network to benefit of their capillarity.

5.3 Point of sales

The analysis should also take into account how the role of the Retail store changes when the strategies of the different sales channels are integrated. To fully benefit from omnichannel shift, it is necessary to consider the channels in a complementary way and exploit the potentialities that each of them can bring: therefore, while the

offline channel is the winner in terms of speed, the physical store remains a fundamental location relative to the physical experience. In any case, it is clear that the store is subject to changes when different touchpoints are integrated.

First of all, the store becomes both more “digitalized” and therefore an important point for the management of cross-channel orders. The BCG's report *"Four digital enablers: bringing technology into Retail store"*, which presents the result of a survey on 25 fashion retailers based in Europe and North America, states that digital leaders – retailers who have fully integrated digital technologies into in-store experience and who have transformed the store into a physical point for omnichannel management – have experienced stronger growth in EBIT compared to digital followers (retailers who have lagged the furthest from this point of view). The relationship between in-store digital activity level and yearly average EBIT growth is reported in the Figure 5.5 below.

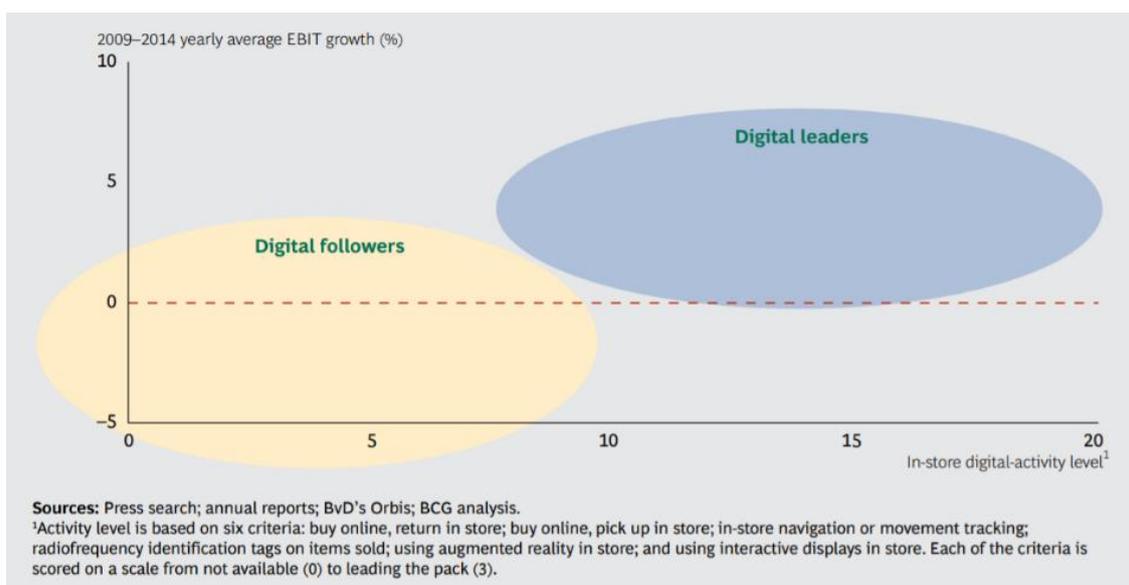


Figure 5.5 In store digital activity correlated with EBIT growth

An interesting focus is presented once again by BCG, in the article *Scaling the Store of the Future*. According to this, it is possible to divide digital technologies into three main groups based on the role they cover along the in-store purchase journey (Figure. 5.6).

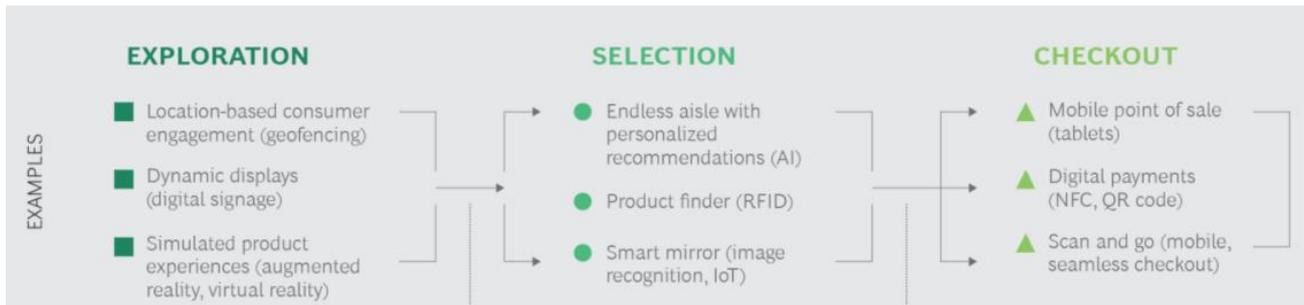


Figure 5.6 In-store technologies divided into three phases: exploration, selection, and checkout

It is worth noting that the three phases reflect the three sections used for the technological solutions' area classification of both scientific and non-scientific literature.

- *Exploration*: this category includes technologies that make searching and selecting products more enjoyable and pleasant for customers; these include solutions based on augmented reality that allow clients to interact more actively with articles of their interest.
- *Selection*: this includes solutions that allow to expand the assortment in store, such as the "endless aisle". This option, through kiosks, allows customers to browse and possibly buy online products not physically available in the point of sale. Other solutions used in this phase are based on artificial intelligence technologies with the aim of offering customers the most suitable products; this feature is particularly used in the clothing industry.
- *Checkout*: to make shopping easier and faster, retailers can use sensors or computer vision solutions to make clients autonomous in the payment phase; alternatively, they may include scan&go solutions that allow customers to use their smartphone or dedicated devices to select products and directly proceed with payment.

Another major change related to stores affects the sales force. Nearly a quarter of non-scientific literature articles analyse changes involving human capital. As reported in the Deloitte report *A road map for omnichannel fulfilment: Assessing your omnichannel Retail strategy* and the McKinsey article *Reimagining stores for Retail's next normal* the role of store staff must be redefined from an omnichannel perspective: sales staff should deal with the preparation and fulfilment of orders coming from the online channel and intended for click&collect services, curbside pick-ups and home delivery from the point of sale. Furthermore, in particular after the Covid-19 pandemic, sales associates began to take care of customers even remotely. Additionally, both reports focus

on the importance of running employee training programs and introducing metrics, incentives, and compensation plans to motivate shop assistants, since they are traditionally incentivized to satisfy in-store customers without caring about online-users.

5.4 Barriers

It has become a common perception that the Retail world is no longer divided into online and offline, but that the future is omnichannel. It is also true that the path to achieving complete omnichannel maturity is far from simple and the barriers within companies to put omnichannel into practice are still numerous. These may include technological, organisational, economic or governance barriers (lack of a common vision). In the survey conducted by PwC and SAP, more than 300 retailers were asked what are the main reasons that hinder or delay the full implementation of an omnichannel strategy. Looking at the results reported in the Figure 5.7 below, 40% of respondents highlighted challenges related to the company vision or to a non-complete understanding of the benefits related to the strategy. 40% of respondents also reported technological barriers related to both IT resources and data management. Regarding the latter, another relevant issue refers to the risks associated with data; the increase in the number of touchpoints available to customers leads to an increase in the number of data to be managed and protected and unfortunately the survey found that around a third of retailers are unaware of the impacts of the EU General Data Protection Regulation (GDPR). The Figure 5.7 reports the answers (base of 312 respondents) that emerged from the survey as a result to the question: *We want to understand what challenges you face in getting new omnichannel business technology solutions to the top of the agenda for your business area or organisation. To what extent do you agree/disagree with the following statement.*



Figure 5.7 Answer to the survey about the main barriers to omnichannelity

6. CENSUS ON TOP ITALIAN RETAILERS

6.1 Census introduction

In collaboration with *Osservatorio Innovazione Digitale nel Retail (School of Management – Politecnico di Milano)* Top 300 Italian retailers' Census – developed since 2006 - has been updated to the state of the art.

The Census represents a useful tool to map the omnichannel maturity in Italy. Specifically, through different variables it assesses the adoption level of sales channels and the diffusion of the main omnichannel models. This analysis allows to understand the trends and their evolution over years and to extract valuable insights comparing different sectors.

The sample of companies included in the Excel file used for the mapping process, refers to the 300 Top Italian retailers in terms of turnover in 2021. Retailers have been selected following only this logic and, consequently, regardless of the type of sector in which they operate. By definition, to be included in the Census, they need to have at least one physical point of sale, directly or indirectly managed.

From this classification, the 300 Top retailers result to be divided by sectors as shown in Figure 6.1. It is evident that the predominant sectors are clothing and footwear covering the 53% of the sample, followed by Food and large-scale distribution covering the 23%.

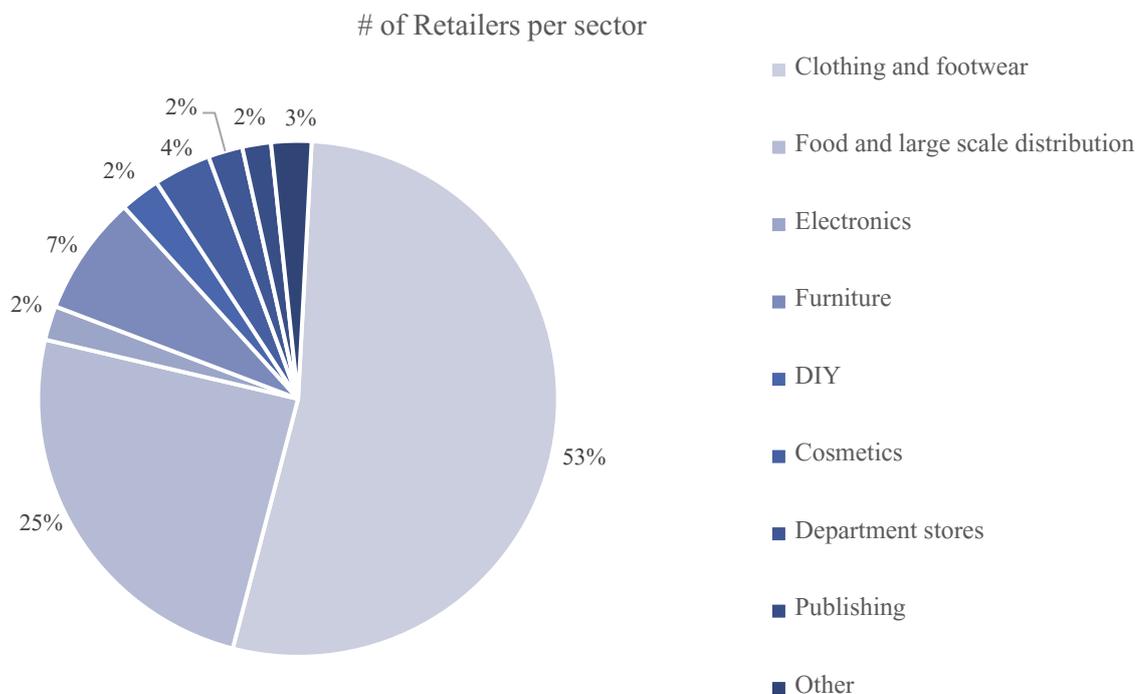


Figure 6.1 Retailers per sector (sample Top 300 Italian retailers)

Shifting to the categories included in the analysis, the Census is composed by 4 main sections:

Website typology is the first point to mention. Each retailer has been categorized according to 3 alternatives: the availability of an *eCommerce* website, with the option to put the product within a cart to complete the purchase; the availability of an *institutional* website, just for relational purposes, therefore without the previously mentioned feature; to conclude, the situation of no website availability.

Three other macro-areas have then been included in the Census. The final aim is indeed tracking with how many different options each retailer in analysis is present in the online channels: therefore, the *mobile app*, the *mobile optimized website* and the most common *desktop website* have been considered.

Some of the elements traced are common to the three categories, others are specifically thought for each channel option. In general terms, the situation can be summarized as follows:

- from one side, the analysis permits to gather information about *which shopping journey phases are covered by the channel considered*, from pre-sales activities to post-sale support.
- concurrently, an omnichannel study is conducted. Through each retailers' website and app, the *omnichannel models and functionalities* implemented by the selected brands are explored.

This is done to both assess retailer's completeness of the implemented activities and to provide an overall picture of channels' complementarity.

In addition to what just explained regarding the typology of information tracked, to go into more detail compared to what has been tracked in past years – also for Covid-19 related reasons – in 2021, two extra considerations have been done:

- First, "*other innovative services*" column has been added within both App and Website sections in order to track any additional omnichannel models or emerging services introduced by retailers and not included in the previously listed categories.
- Additionally, to highlight the growing importance of *indirectly managed digital channels*, the percentages of retailers' which decided to implement third-party platforms – specifically marketplace, eTailer and flash sales – have been mapped.

In the Figure 6.2 are summarized, section by section, the above-mentioned areas; results will be disclosed later in the study.

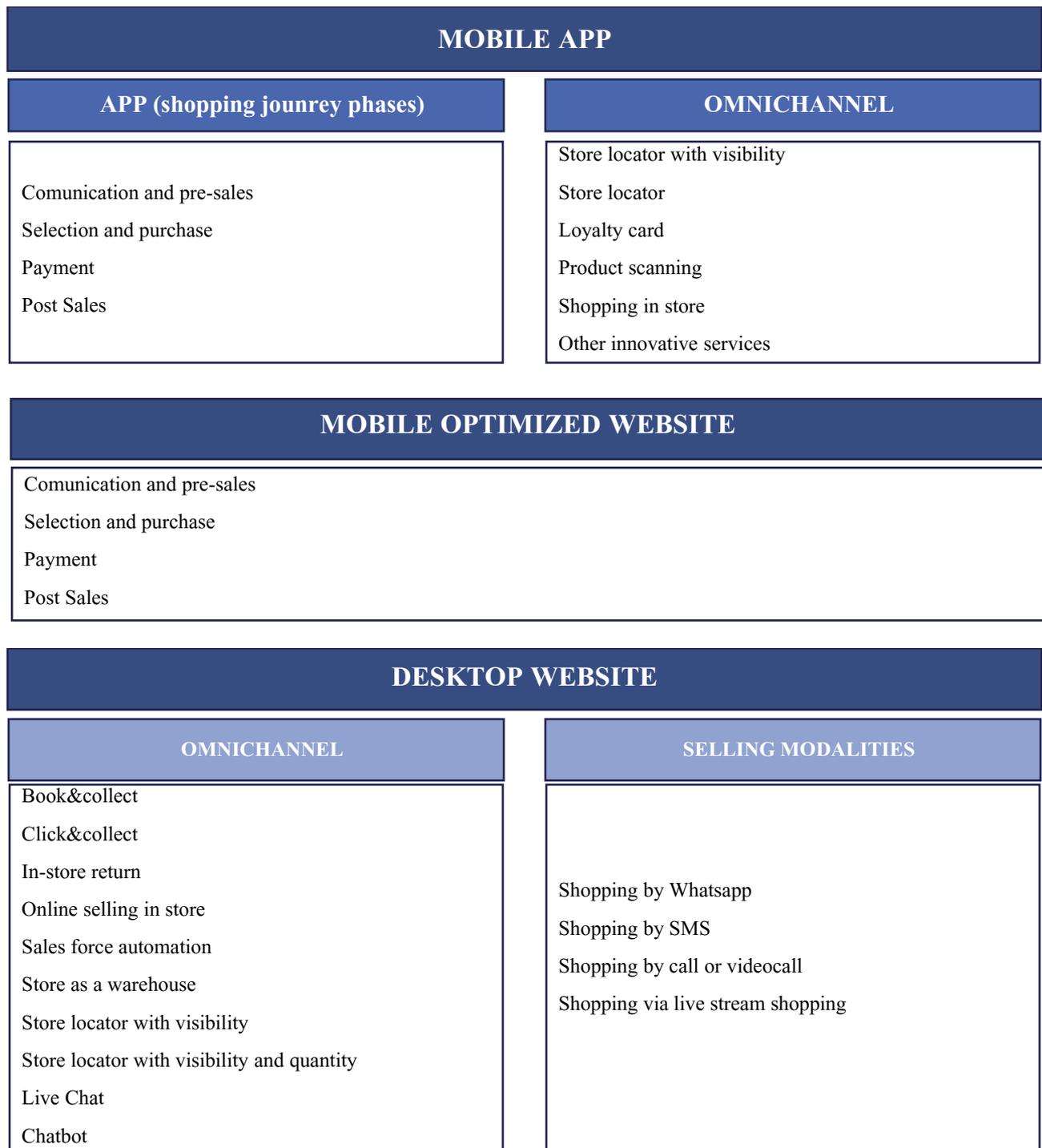


Figure 6.2 Census framework

6.2 Census results

This section presents the Census results to provide an overview of the progress made by omnichannel in Italy. First the focus is on how the 300 leading Italian retailers use direct online management channels in 2021.

As can be seen from the data in Figure 6.3 below, the majority of Italian retailers uses the website, be it the desktop or mobile version, for transactional purposes; on the opposite, for the mobile application the majority is made up of retailers using it for relational purposes, for example for pre and post-sales communication or to provide information about the brand and the products to the customers.

Specifically, considering the desktop website, 86.4% of retailers operating in Italy has an eCommerce website (for transactional purpose), the remaining 13.6% instead rely on institutional websites (for relational purpose). As concerns the mobile optimized website, 98.6% of retailers adjusts the website to make it easily accessible also from mobile: 85.9% of them adopts it for transactional purposes while 14.1% adopts it just with informational intention. Finally, 44% of retailers also has a mobile app; as before the majority (56%) includes also eCommerce functionalities while 44% use the mobile app only for relational purposes.

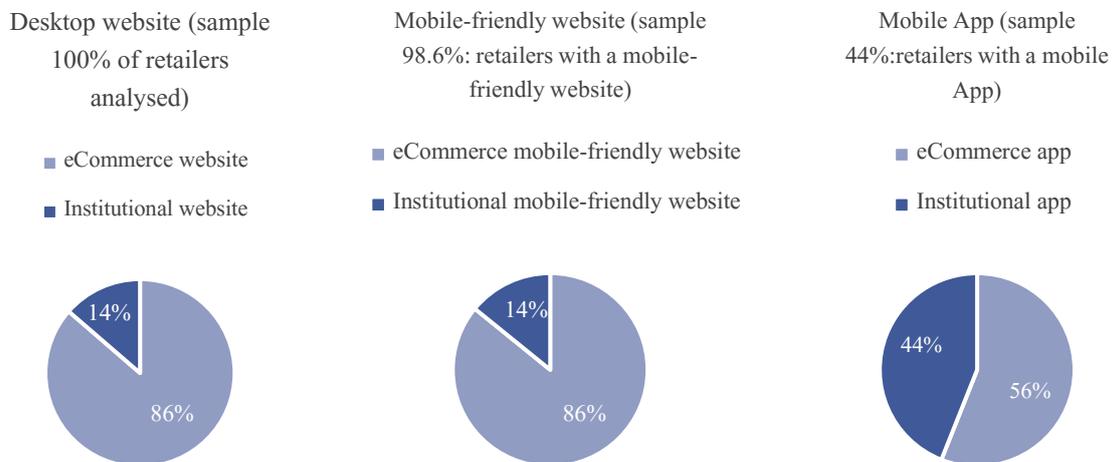


Figure 6.3 Adoption level of different directly managed online channels (2021), sample: Top 300 Italian retailer

By doing a deeper analysis of the channels, innovative functionalities to improve customer service can be first analysed. These can include live chat and chatbots, which allow customers to collect information and ask questions to an assistant in the first case or, in the second case, to automated software. Other useful functions for customers are the ability to locate the point of sale and check product availability, as well as check available quantities in the selected point of sales. Finally, some of the innovative services, especially introduced after the

pandemic, include: the ability to schedule an appointment to visit the store or receive a personal consultation and finally the possibility to check the status of the queue at the store.

The results of the most used functions and their degree of adoption are represented by Figure 6.4 below.

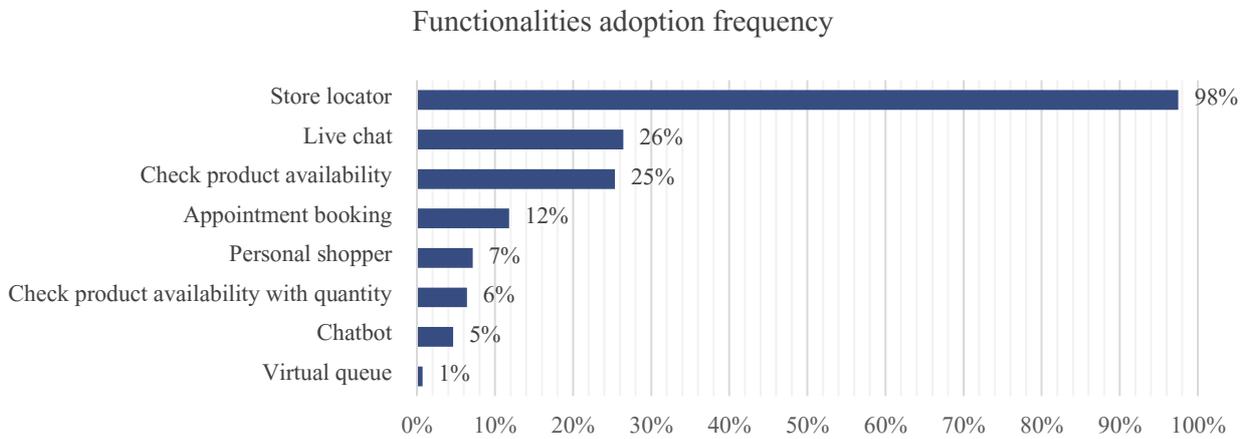


Figure 6.4 Innovative functionalities accessible through the website (Sample: 300 Top Italian retailers)

Finally, thanks to the Census conducted it is possible to carry out a more in-depth analysis of the omnichannel models mainly adopted in Italy. The data, already mentioned in the introductory chapter, are reported in Figure 6.5 below. Click&collect is the most popular model in almost all sectors except furniture and electronics. Then 32% of retailers offer customers the possibility to return their orders in-store regardless of the channel used for the purchase; this model is clearly not widespread in the food industry as it is confined to non-food products. The less common models are the ability to buy online from the store and sales force automation systems, similar to the previous one but with the order placed by the staff in the store.

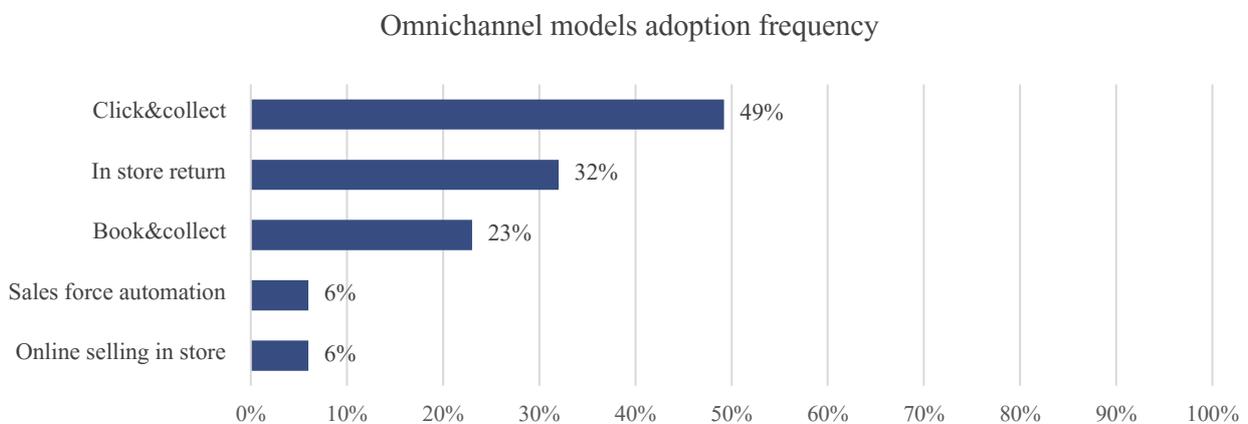


Figure 6.5 Omnichannel models adoption in 2021 (sample: 300 Top Italian retailers)

In general, the degree of adoption of different models, the use of eCommerce sites or apps and the introduction of new functionalities within the website or the app, recorded an increase in 2021 compared to the data collected in 2020.

Indeed, as shown in the Figure 6.6 below, in 2020 the percentage of retailers with an eCommerce desktop site was 82% (-4% compared to 2021). As for the mobile-friendly site, this was used by 98.2% of retailers: more precisely, 84% included eCommerce functionality while 16% adopted it only for purposes of customer relations. Finally, 43% of retailers offered a mobile application, of which 52.8% also included eCommerce functionalities, while 47.2% used the app for informational purposes only.

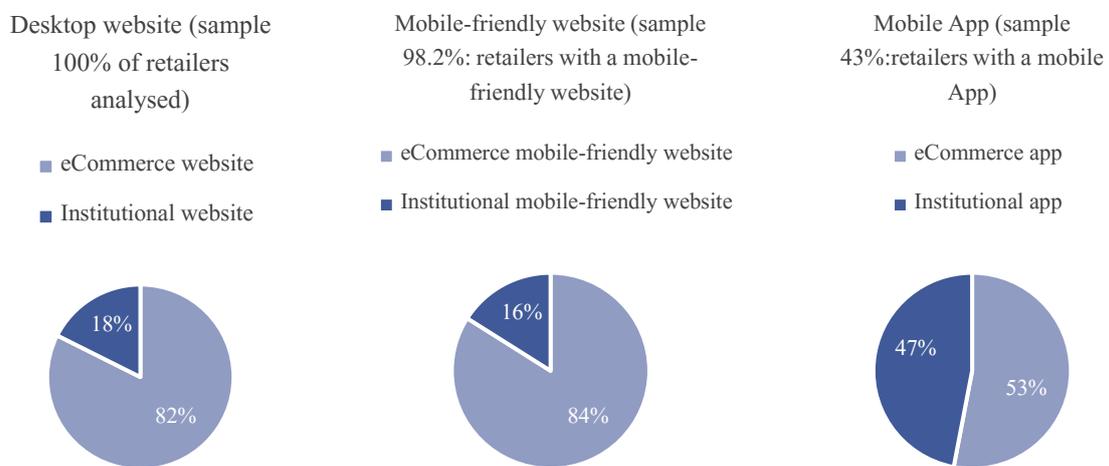


Figure 6.6 Adoption level of different directly managed online channels (2020), sample: Top 300 Italian retailer

The average adoption of omnichannel models used by the Top 300 retailers also increased from the previous year. Graph 6.7 compares the adoption rate of the 5 different models drawn in 2021 (light blue) and 2020 (dark blue). It is evident that with the exception of online selling in store all the other models have registered a growth.

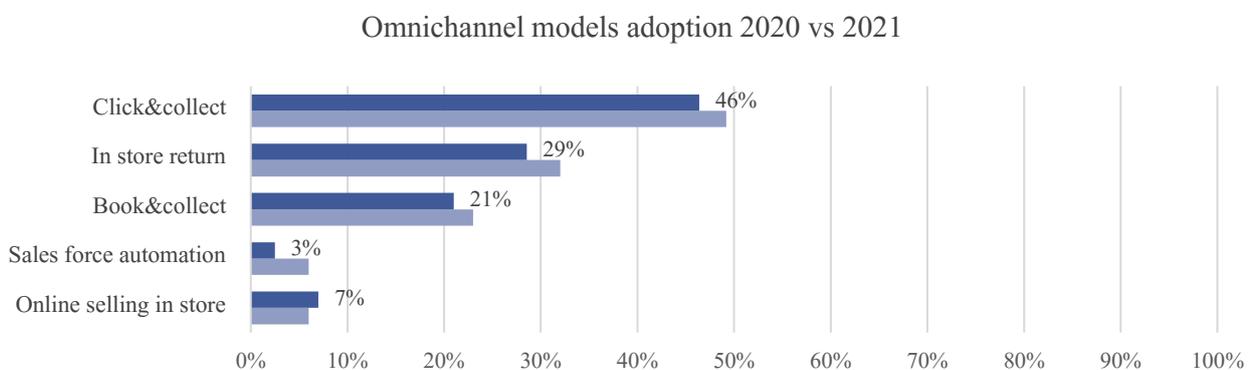


Figure 6.7 Omnichannel models adoption: comparison 2020-2021 (sample: 300 Top Italian retailers)

The analysis therefore allows not only to deeply understand the state of the art in Italy but it also provides an overview of the trend characterizing the omnicanality in Italy. Specifically, observing the results it can be affirmed that many Italian companies are evolving in this direction.

Finally, the analysis introduced this year concerning the degree of adoption of third-party websites reported that 21% of retailers offer their products through marketplaces, 43% through flash sales websites and finally 38% rely on eTailers website.

This last chapter concludes the analysis part, composed by three sections: an academic part, a section including data and information coming from the largest consulting firms and, finally, a more analytical part focusing on an existing retailers' sample.

To contextualize the topics emerged and place them in a current context, also in the following chapters some evidence emerged from *Osservatorio Innovazione Digitale nel Retail (School of Management – Politecnico di Milano)* workshops will be used as well as some news related to the Retail world of the last year will be mentioned.

In particular, the source of these news is a repository, updated in collaboration with the *Osservatorio Innovazione Digitale nel Retail (School of Management – Politecnico di Milano)*, where it is kept track of the main projects and trends that characterize the Retail world. This archive, in addition to classifying the more generic information about news, such as the time period and the geographical position, also traces the state of progress of the projects and the main strands of Research covered. In particular, it keeps track of:

- context and Retail infrastructure;
- innovation within the point of sale;
- back-end digital innovations;
- eCommerce/Mobile commerce and new selling modalities;
- omnicanality;
- open innovation;
- technological trends.

The next section will present the gap that emerged from the analysis part; subsequently, a solution to fill it will be provided.

7. GAP IDENTIFICATION

As it has been noted in scientific and non-scientific literature analysis, many papers – in addition to qualitative themes – deal with “best practices” issues in several areas. To summarize the previously disclosed percentages, precisely:

- considering the scientific literature, especially the “*back-end implications*” section, among the most important areas to cite, 57% of papers deal with *data strategy* topics. Considering instead the *value chain* theme (76%), 30% of the papers deals with the technologies adopted for guaranteeing a proper execution of the omnichannel strategy. Moreover, within operations and logistics area, 55%, 52% and 39% of papers refer – respectively – to inventory management, shipping & last mile distribution and, finally, returns management. The figure 7.1 below shows the number of paper dealing with each of the aforementioned topics;

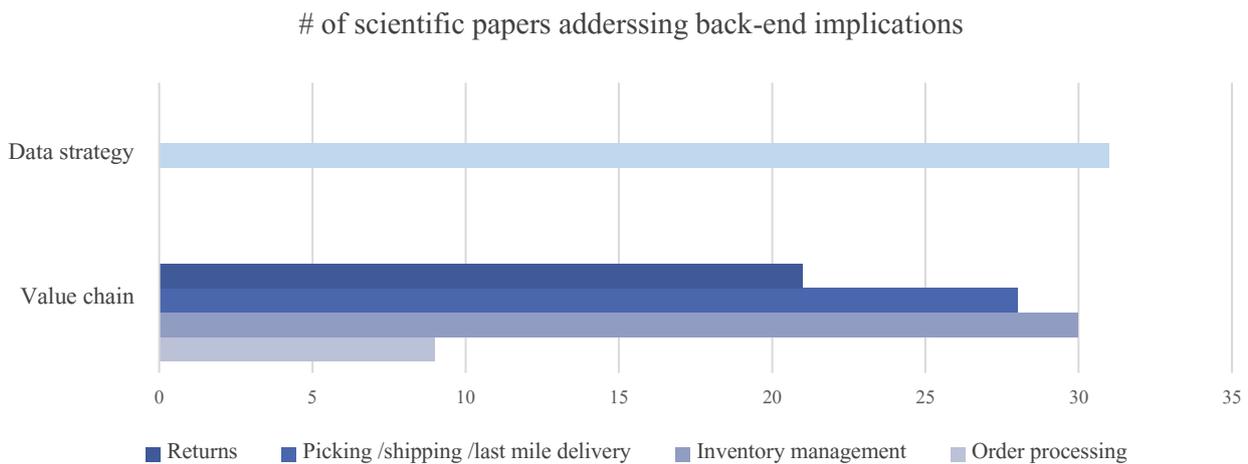


Figure 7.1 Back-end implications

- with reference to non-scientific literature, instead, consistent percentages of the analyzed reports – 33% and 41% respectively – provide information related to the implementation of *omnichannel models* as well as the *habilitating solutions* behind them. Therefore, thanks to non-scientific literature it has also been possible to collect important findings over the “*front-end*” areas of study. The number of articles dealing with those topics is shown in the Figure 7.2 below.

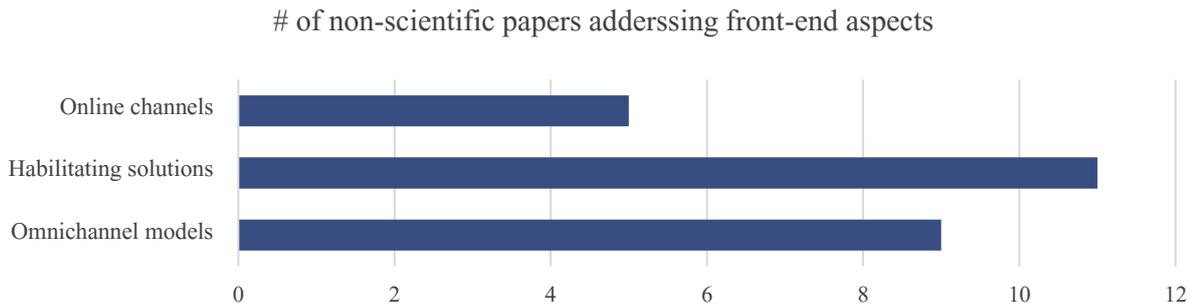


Figure 7.2 Front-end areas of study

Despite the high percentages tracked along this two-step analysis, highlighting a great interest in the topics above mentioned, what is missing is a unique methodology to measure how much a company is developed in an omnichannel perspective.

This is also confirmed by the scientific literature, which highlighted the increasing need of introducing metrics to assess companies' current omnichannel status.

Retailers are moving in this direction by adopting some KPIs - key performance indicators. As stated by PwC report "Guide to key performance indicators", KPIs are indeed defined as "*factors by reference to which the development, performance or position of the business of the company can be measured effectively*".

Among the most popular KPIs adopted to assess omnichannel effectiveness there are:

- % online orders placed from the store;
- % orders withdrawn at POS (different modes: in store, drive, locker, etc.);
- % in-store staff time dedicated to online activities;
- conversion rate cross channel;
- sell through omnichannel;

These, however, are useful just in part as they analyze only some aspects of omnichannel strategy such as the physical store, the staff, the omnichannel models etc. Consequently, they fail to provide a clear overview and risk, on the contrary, to return a fragmented picture of the organization.

The Census presented in the analysis phase can also be considered an adequate tool to allow researchers to evaluate retailers' omnichannel status and evolution. However, it provides just a partial picture of omnichannel

from a "front-end" viewpoint, considering the major changes introduced annually by retailers (as concerns omnichannel models and sales channels) and, therefore, it results mainly useful to make year-by-year comparisons.

Considering that a comprehensive omnichannel assessment requires a combination of front-end and back-end factors, both the KPI actually used and the Census are, therefore, not enough accurate to provide retailers concrete indications on how to potentially improve their omnichannel development and precise data to researchers about the current state of the art in omnichannel terms.

As a result, it became clear how the *gap* of the current study matched the need to provide an *objective and complete metric of all omnichannel related aspects*, starting from the strategy, proceeding with front-end solutions and back-end processes and concluding with organizational implications. Therefore, only through the path of an “**Omnichannel Index**” construction, it would be possible to complement all areas and sections not mapped yet by other methods.

Indeed, the Omnichannel Index will be able, from one side, to provide retailers a 360° situation of their omnichannel status considering both back-end and front-end aspects, in addition to the already measured KPIs; concurrently, it would represent an important tool for researches to conduct deeper analysis about sectors differences in omnichannel terms and to underline the distinct approaches adopted by single companies.

The next phases of the study, therefore, will be:

- a step-by-step description of the Omnichannel Index construction path, explaining in detail the choices made to build each section and category, and the criteria followed in the scoring process;
- the conclusive part of the work including the Index application, in which an analysis by sector based on a significant sample of respondents to the Retail Survey 2021 will be carried out. This last step will be particularly significant to assess the overall omnichannel situation in the Italian scenario and to check at 360° the most adopted trends by companies in the last year.

8. EMPIRICAL PART

8.1 Empirical part: introduction

This chapter focuses on explaining how the Omnicanality Index has been created.

At the beginning, evidence emerged from scientific and non-scientific literature has been used. These made it possible to identify the macro categories of interest and all the elements to include within each of them. After mapping the various entries, the next step was to transform the collected qualitative evidence into numbers that would allow indexing.

As it has not been possible to translate such qualitative evidence in an objective and numerical measure, more analytical methods of investigation have to be introduced.

Specifically, a survey was conducted in order to collect information on the relevance, in relative terms, of the factors included in the Index.

To construct the survey's statistical population, a group of Retail companies from different product sectors was first identified. Then, through LinkedIn, 1 or 2 people for each company have been selected. The “filter” used to choose the right respondents for the analysis, has been to contact people performing tasks related to omnichannel activities or belonging to the Retail, eCommerce, or marketing functions.

The total statistical population that received the questionnaire comprehends 104 people. In particular, for each sector, heterogeneous firms of different sizes have been included; in this way, the responses obtained resulted to be balanced since they did not take into account only the viewpoint of the major international organizations. This allowed the creation of a broad-based Index, which can therefore be potentially used by various Retail companies.

The response rate of the survey has been 24%; so, the significant sample used to extract and process data includes 25 respondents among which Dior and F.lli Campagnolo for the clothing and footwear sector, Guzzini for the furniture and home improvement sector, Rigoni di Asiago for food and large-scale distribution, Bucherer AG for the jewellery industry, included in the other group etc.

The survey was composed of 5 sections, corresponding to the 5 Index' areas as will be explained below. Each of them included one or more questions asking retailers to rank the factors listed in order of importance or utility for the implementation of an omnichannel strategy. The total number of questions developed is 8.

Shifting to the weighting system, the use of ratings has been preferred over numerical scales – e.g., 1 to 5 – to avoid obtaining responses with equal importance to all the factors and, therefore, to understand their relevance in relative and not absolute terms. As a premise at the base of the survey, it was indeed recognized that all the factors emerging from the literature are important to enable the transition to an increasingly omnichannel business model.

Gathering data from a real context allowed to realize which are the areas to prioritize and therefore the ones that will assume greater weight in numerical terms along the Index construction path.

Indeed, the results obtained from the rankings were then elaborated and weighted. Specifically, the following steps have been performed:

1. Survey answers have been analysed one by one, taking one question at a time.
2. The rank obtained from each question has been converted to a number. For example, if a question included 4 factors to order from highest to lowest importance or utility, the most important topic from a specific retailer's viewpoint has taken 4 points, while the last one got 1 point.
3. Once scores have been assigned to each factor (so, to each option of each question), they have been averaged considering all the questionnaire's responses.
4. Finally, each score obtained from the average has been compared to 1 proportionally and has then been used to progressively weight the different categories and sections.

Figure 8.1 below graphically represents the process used for the construction of the Index.

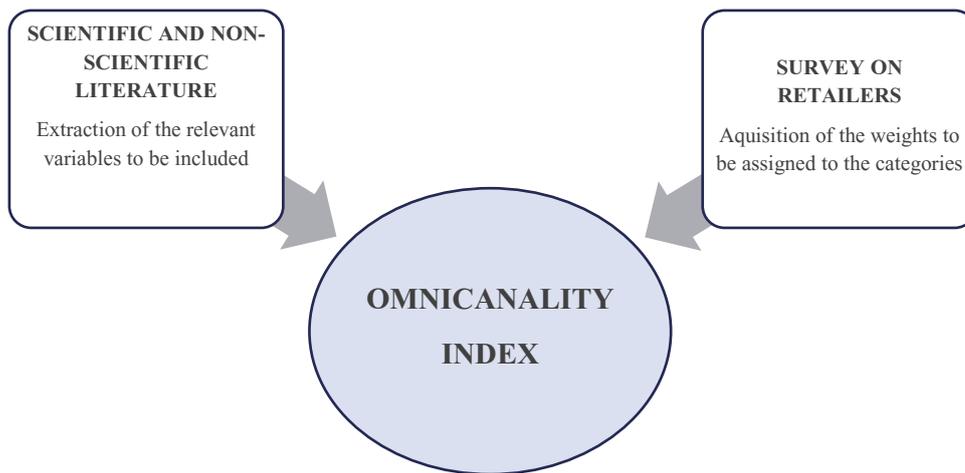


Figure 8.1 Process and components for the Index construction

In the next section, devoted to a detailed explanation of what constitutes the Index, numerical results of this procedure are presented for each category considering also different sectors.

Then, the chapter 9 will be dedicated to the application of the Index. For this purpose, another survey conducted by the *Osservatorio Innovazione Digitale nel Retail (School of Management – Politecnico di Milano* in May and June, will be used.

The survey entitled "*Retail between online and offline: omnichannel integration*", through 21 questions aimed at deepening, from multiple points of view, the level of omnichannel development of Italian retailers and to investigate how they manage the main drivers.

The survey consisted of 5 sections, each one addressing different facets of omnichannel within a retail organization:

- omnichannel strategy;
- omnichannel data strategy;
- omnichannel operations management;
- impact of omnichannel on the point of sale;
- impacts of omnichannel integration on the organization.

Finally, it has been investigated which are the main barriers that retailers have encountered in the implementation of an omnichannel strategy.

For the sake of simplicity, the first survey above presented will be referred to as “*survey for weighting process*”, while the second one will be mentioned as the “*survey for application*”.

The two surveys are different one from the other: the survey for the weighting process aims at understanding which factors are considered a priority by each company so questions were asked in an almost abstract way, considering to have at disposal “*unlimited resources*”. On the opposite, the survey for application is about studying which are the activities and actions retailers have introduced to support their omnichannel strategy and how they manage it, so respondents completed the questionnaire by referring to the actual way of working within their organization.

The survey for application collected 112 responses. Almost half of them was found to be incomplete and was therefore excluded from the analysis. In conclusion, the significant sample used included 60 respondents and the Index has been calculated for 51 firms; 9 of them have indeed not been considered due to double company’s answer or missing fields.

The results of the survey for application will then be inserted into the Index model. For each of the retailers surveyed, a numerical result showing *organizations’ omnichannel level* will be obtained.

With the Indexes elaborated, analyses to investigate the omnichannel maturity in Italy will be then carried out. Deeper consideration will be done considering which are the most developed and the least developed sections and making comparisons between different sectors.

8.2 Empirical part: Omnicanality Index

The Index construction path will follow the scientific literature structure, with some additional changes in sections' development, needed to properly weight each category.

More specifically, the index has 5 main sections - Strategy, Data Strategy, Operations, Organization, Point of Sale – covering all the different omnichannel aspects. Each section, then, contains from two to four categories, which allow a more detailed analysis of each area considered.



Figure 8.2 Index sections and categories

Therefore, the first step in building the Index has been to identify, respectively, categories and sections. Consequently, through the survey previously introduced – conducted on a sample of 25 retailers active in 6 sectors – weights and scores have been progressively assigned to the different tables composing each section and, within these, to the individual components. Finally, sections have been merged to obtain the overall value of the Omnicanality Index. Survey's answers will be the determinant to assign the right values to each of the tables included.

Before explaining how weights have been given to the categories in study, a premise is needed.

Considering data gathered from scientific literature and survey responses, the sectors analyzed while developing the Omnicanality Index are the following: food and large-scale distribution, clothing and footwear, electronics, furniture and home improvement, cosmetics and perfumery, others. Obviously, not all of them behave in the same way and could have diversified needs to put in place a proper omnichannel strategy.

Consequently, for the areas of study in which it has been possible to make global considerations, differences among sectors have not been considered; where, instead, this procedure wasn't enough accurate for conducting the analysis, the weighting system has been adapted to each specific sector, considering possible similarities and parallelisms among businesses.

As it will be seen the framework for the Index is created as a form to fill. Many of the categories that will be explained will have “yes” and “no” as possible answers, eventually adapted with additional information based on the section in analysis – i.e., “yes, online” or “yes, offline”. In many cases, anyway, “no, but interested” column could be found: being omnichannel a complex and long path to work on, it is worth including also this option. It's needed to specify that this case doesn't need to be thought as companies' “subjective interest” of the topic in study, but as an implementation area already discussed within the organization and as a direction towards which companies will surely move in the next future, even if they are still trying to understand how to get there, due to reasons as funds' needs, implementation timings and resources involved.

8.2.1 Strategy

Starting from the *strategy* section, the first category to analyze has been *channels'* one.

8.2.1.1 Channels

Offline channels, as explained in the introductory chapter, can be directly or indirectly managed. retailers, by definition, should have at least a physical point of sale to be included in this business category. Consequently, the current classification has been covered for completeness, but no specific points have been assigned to it. Indeed, independently from the type of store operated by the retailer, but with the constraint that at least one of the two must be manned, the category has been included in the Index to filter retailers against other businesses that, not having any kind of physical store, will not be part of the analysis.

OFFLINE CHANNELS	YES	NO
Store managed directly		
Store managed indirectly		

Figure 8.3 Offline channels

Online channels too can be directly or indirectly managed. According to this distinction, it is reasonable to suppose a greater value should be assigned to directly managed online channels – both in terms of app and website: indeed, being brand's property, costs and timing of implementation are much higher in comparison to third-party channels, already available and easily implementable. Anyway, since not directly managed channels pose a higher risk to firms because “*part of the customer journey is outside firm control*” as stated by Robert P. Rooderkerk and A. Gürhan Kök, companies should deeply value pros and cons before implementing them.

The following paragraphs will provide evidence on these themes and will explain both the analysis done for each type of online channel and the weighting process.

Directly managed online channels

Support to the previously introduced assumption of assigning greater value to this category has been found in the data gathered from 2021 Census conducted in collaboration with *Osservatorio Innovazione Digitale nel Retail* and *Osservatorio eCommerce B2C*(School of Management – Politecnico di Milano), as explained in the dedicated chapter. Considering directly managed online channels, it is evident how, among the Top 300 Italian retailers, eCommerce – so the use of website for *transactional* purposes through desktop – and mobile commerce

– with apps and mobile optimized website – are almost at the same level of diffusion, with very high rates of adoption, respectively of 85% and 86%. It is anyway necessary to specify how, within mobile commerce, the optimized website is much more widespread than the app – respectively with 85% and 25% of adoption.

Additionally, thanks to data coming from *Osservatorio eCommerce B2c (School of Management – Politecnico di Milano)*, it has been noticed how in Italy, in 2020, the 51% of eCommerce purchases have been concluded through smartphones, trend that confirms how mobile and desktop are almost equal in terms of adoption for purchasing.

At a *relational* level instead, the adoption of both institutional website and mobile for relational purposes – considering again optimized website and app – is evidently lower than the previous category. Even in this case is worth noticing that categories behave in the same way: retailers who have adopted a website for relational purposes (desktop version) correspond to 15% of the sample while retailers that have introduced optimized mobile sites and apps for the same purposes are respectively 15% and 19%. Considering – for an overall consideration of the category – those that have at least one between app and optimized website, the number increases up to 28%: within this are included, for example, those retailers that offer the possibility to purchase from the mobile site while the app has only informational or after-sales purposes, or vice versa.

Confirmation to this trend results from the survey for construction: even if the 24% of retailers evaluates eCommerce and institutional websites equally important, significant data comes from the 60% of retailers analyzed. This percentage states indeed that the usage of online channels for transactional purposes is much more valuable and useful than their usage for relational purposes, which is considered particularly important only by the 16% of retailers. In addition, except the 2% of retailers considering equally important mobile and desktop independently from their final purpose, 24% of the sample assumes especially important being present on desktop websites, while the majority - the 68% - values more the development of mobile apps.

In addition to the typology of channel used and its purpose, since creating a new website or application from scratch allows full personalization of *functionalities*, is important to notice that different retailers can decide to invest on different features according to their strategy and business models.

As just proved by the survey and the collected data, the main purpose of websites and applications is mainly transactional rather than relational. Consequently, according to the full list of functionalities that an online

touchpoint could offer to its customers, a greater value has been assigned to the ones enabling purchase – called *eCommerce functionalities* – while a lower value has been assigned to the *relational* ones, both basic and omnichannel. This last category includes indeed - ordered from lower to higher customer value added - all the functionalities which habilitates omnichannel aspects.

It should be specified that even if the index construction has the aim to value firms' "omnicanalinity", it has been decided to include in the analysis functionalities that can be defined as "basic" for two reasons:

- from one side, being implemented and available, they allow retailers to improve online customer experience – even if not in omnichannel terms.
- on the other side, in some cases they could represent the trigger for introducing or developing other omnichannel functionalities, models and activities that, for being implemented need them as a starting point (i.e., *loyalty card registration* results to be necessary for proper data tracking and usage in a seamless way offline and online).

The following step has been to choose functionalities' weighting system:

- $1/X$ points to each of the relational functionalities, where X = maximum number of omnichannel enabling functionalities (both basic and omnichannel). This reasoning has been done according to the impossibility to assume one functionality as more important than another, but also taking into consideration that – as will be better explained later – the maximum number of functionalities implementable varies by sector.
- $1/Y$ points to each of the transactional functionalities, where Y = maximum number of eCommerce functionalities. For this analysis, the number eCommerce functionalities is three.

Each of the two sub-sections in the table will then be weighted for to the relative result of *eCommerce or institutional website preference* coming from the survey.

Proceeding with a weighted sum, retailers in analysis will get the total weight according to *how many* functionalities they decided to implement – the more functionalities the better – but, most important, based on the *typology* chosen.

In the following paragraphs, both the functionalities explanation and the weighting process' results coming from the percentages previously presented will be disclosed. Overall ranking evaluations will be done to precisely assign points to each of the 4 above mentioned areas – eCommerce vs. institutional website; mobile app vs. desktop – and, consequently, to the different typologies of functionalities.

Below Table 8.2 represents all the “desktop website functionalities”.

DESKTOP			
Weight	INSTITUTIONAL WEBSITE		
	FUNCTIONALITIES	YES	NO
1/10=0.1	Digital flyer		
0.1	Newsletter subscription		
0.1	Store locator		
0.1	Loyalty card registration		
0.1	Live chat /Chatbot		
0.1	AR/VR to visualize products		
0.1	Virtual tour of the store		
0.1	Remote booking for in-store visiting		
0.1	Check availability		
0.1	Check availability with quantity		
Weight	ECOMMERCE WEBSITE		
	FUNCTIONALITIES	YES	NO
1/3=0.33	Selection and purchase		
0.33	Cross-channel pick up/payment		
0.33	Order monitoring		

Table 8.1 Desktop website functionalities

The case of “mobile commerce functionalities” is instead reported below in Table 8.3. It is possible to notice how the majority of functionalities is the same, but some of them are mobile-specific, particularly *Information collection in store (I.e.: QR code)* and *Functionalities allowing in-store purchases*.

MOBILE			
Weight	INSTITUTIONAL		
	FUNCTIONALITIES	YES	NO
1/12=0.083	Digital flyer		
0.083	Newsletter subscription		
0.083	Store locator		
0.083	Loyalty card registration		

0.083	Live chat /Chatbot		
0.083	AR/VR to visualize products		
0.083	Virtual tour of the store		
0.083	Remote booking for in-store visiting		
0.083	Information collection in store (I.e.: QR code)		
0.083	Check availability		
0.083	Check availability with quantity		
0.083	Functionalities allowing in-store purchases		
Weight	ECOMMERCE		
	FUNCTIONALITIES	YES	NO
1/3=0.333	Selection and purchase		
0.333	Cross-channel pick up/payment	x	x
0.333	Order monitoring	x	

Table 8.2 Mobile website or app functionalities

As mentioned above, to date, in both cases eCommerce functionalities are considered fixed. In this category are included features, emerged from the literature, that, if present, turn a website or an app from relational to transactional: therefore, they include *selection and purchase* – with the possibility to insert products within a cart –, *cross-channel pick up and payment options* – e.g., *BOPS and ROPS models* – and *order monitoring functionality*.

Instead, as already introduced, not all sectors have the same omnichannel habilitating functionalities. Consequently, the previous tables have been adapted to sectors analyzing which functionalities should be included and excluded and adapting scores ex post since their individual weights will change.

To understand which are the predominant features and which are rare or non-existent ones by comparing different sectors, top Italian retailers Census has been used. In addition, the main news of the last two years concerning Retail sector were considered.

Starting from the first 5 functionalities listed in the table, it is important to say that all of them are implementable by all considered sectors. The total percentages of adoption, using Census 2021 data, shift from 25% of *loyalty card registration*, to 56% of *live chat and chatbot* options, and reach 98% for the *store locator option*. Is therefore evident how these functionalities are widely adopted independently from the sector considered. The only peculiarities to highlight refer to the *digital flyer*:

- Within clothing and footwear sector it isn't a particularly common practice to use flyers; anyway, many retailers such as Bershka, Massimo Dutti, Nero Giardini are increasingly using digital catalogues to present the latest trends and new collections.
- As concerns the furniture and home improvement sector, retailers as Mondo Convenienza and IKEA not only present virtual catalogue to show products, but they also include digital flyer within websites to present the ongoing deals.

Continuing with the other functionalities:

- *In-store appointment booking* is a feature that 12% of Census retailers offer: almost all of them operate in the clothing sector with the only exceptions of a Retailer operating in the publishing sector and two in the eyewear world. Analysing the main news that have involved the Retail world, after Covid-19 pandemic, many stores in food, large-scale distributor, furniture and do-it-yourself sector and electronic sectors introduced this feature to avoid gatherings of people in store.

Consequently, this functionality can be adopted by all sectors even if with different purposes: for example, for the clothing industry, appointments also involve personal shopper's advices, while for food retailers it is mainly an initiative to skip the line.

- The use of *augmented and virtual reality* is frequent in those sectors in which the customer should have the opportunity to understand if a certain product fits in a specific context. These solutions are well suited in the clothing and cosmetics sectors, since customers can virtually try the garments and products on their own person, but also in the furniture and home improvement and electronics ones, to be able to see if the chosen product is suitable for their house.

Consequently, AR and VR features are just excluded from food and large-scale distribution.

- The next functionality to consider is *virtual tour*: while AR and VR are mainly linked to products, virtual tour concerns the store visualization. Consequently, the formers are mostly used just in some sectors, while the virtual tour is a widespread function allowing customers to explore store environment at 360°. Therefore, this functionality is implemented by all sectors with no exceptions.

- As for the *online availability check for in-store products*, according to the Census, 25% of retailers offer this functionality: it can be noted that, there is at least one retailer per sector having implemented this functionality within last year. Consequently, the current functionality will be considered for every sector.
- Regarding *information collection in store and functionalities allowing in-store purchases* – it can be affirmed that all sectors have the potentiality to implement them since, for both categories, no constraints exist in their application.

At this point, a first step about weightings' explanation is needed.

The perceived relative importance of directly managed online channels in comparison to their management and to indirectly managed channels will be disclosed at the end of the three areas' description.

For now, it is worth understanding how – within directly managed channels – retailers belonging to different sectors perceive the usage of *desktop websites compared to mobile-based touchpoints* and, in addition, how they value *eCommerce and institutional websites*.

Starting with the first category, summing values deriving from survey responses – in the form of 1 to 5 points assignment – and comparing the outcomes' average to the total table's value, 1, it results that within *clothing sector* mobile touchpoints assume greater importance withing retailers' business, either in the form of app or optimized websites.

On the opposite, considering desktop websites, the average obtained, in relation to 1, assumes lower importance than the previous category.

The same reasonings can be done for *food, furniture, cosmetics, and electronics sectors*. Even if with different numerical values of the two categories in analysis due to business specificities, the results have the same trend of before: mobile presence is considered more valuable compared to desktop one.

The opposite happens considering *other* sector: within this, with reference to jewelry business in particular, prevalence is assumed by desktop websites over mobile apps.

The resulting weights for each sector are summarized in the Figure 8.4 below.

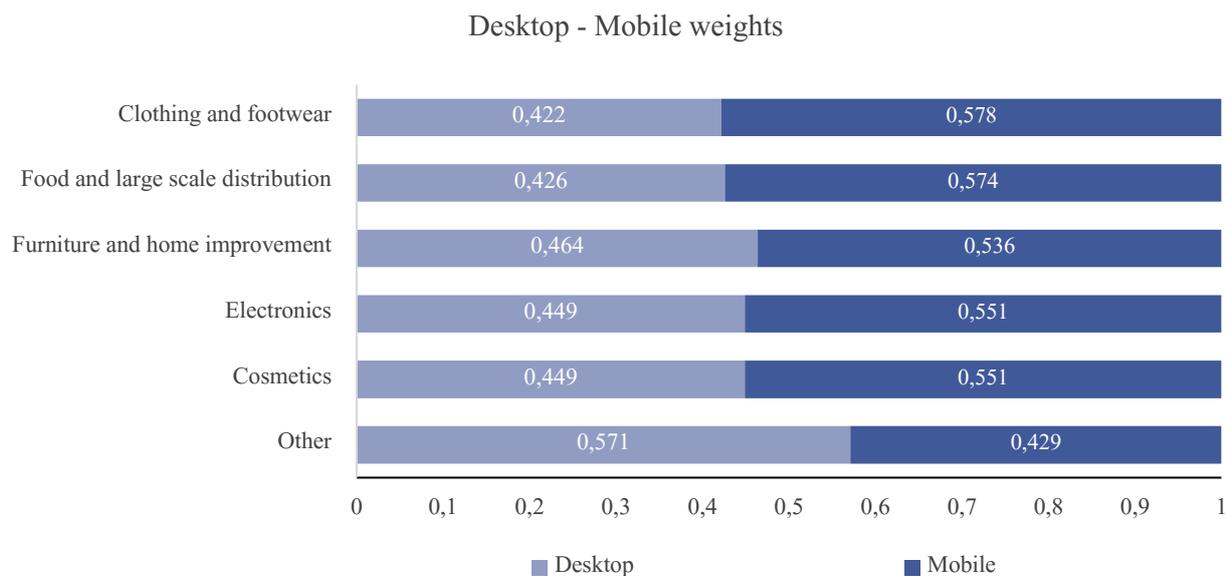


Figure 8.4 Desktop - Mobile weights

Therefore, in assigning weights to the two typologies of directly managed online channels – *desktop and mobile* – the precise values disclosed in the table above will be assigned to each specific sector.

Shifting to the second area in analysis, similar reasonings have been done for understanding *eCommerce or institutional* website prevalence: the weighting system asked in the survey is indeed based on 1 to 5 scale for this area too.

In this case, the trend is the same for all sectors considered: the implementation of an eCommerce platform is judged particularly important and useful for the business with respect the institutional option.

As can be seen in the following table, the industry showing a lower gap between the two alternatives is represented by *other*, fact probably due to the heterogeneity of businesses included in the category.

The one presenting a wider difference among the two options is, instead, the furniture and home improvement sector.

As before, the resulting weights for each sector are summarized in the Figure 8.5 below and they represent the precise values that will be assigned to each of the *two functionalities' categories* in the index construction process.

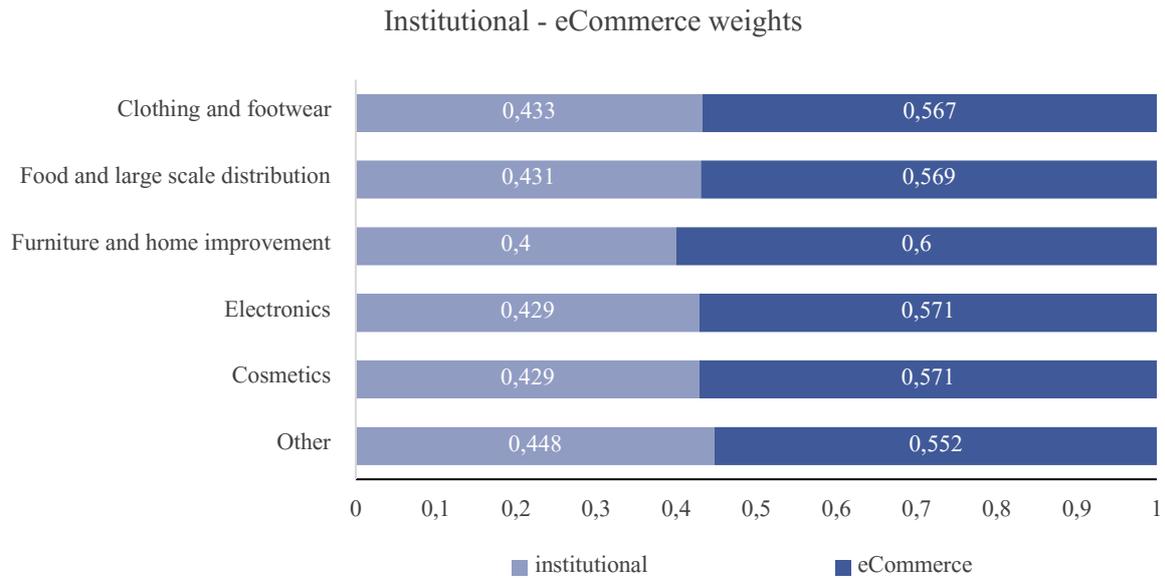


Figure 8.5 Institutional - eCommerce weights

Indeed, considering how index structure is built, within each of the two *Desktop channel* and *Mobile channel* tables, are included both *relational and transactional* functionalities referring respectively to institutional and eCommerce websites.

Therefore, an overall evaluation of the eCommerce vs. institutional preference will be obtained by combining the weighting process previously disclosed for functionalities – $1/X$ and $1/Y$, respectively for institutional and eCommerce ones – and the values of websites' typology coming from the survey, according to the sector to which the retailer in analysis pertains.

In addition, combining the results of eCommerce vs. institutional options within both desktop and mobile tables through values multiplication, the results will change and will be automatically adapted according to the sector considered.

An example is provided below to fully understand how the weighting process works.

Considering 2 companies belonging to clothing (black) and furniture and home improvement (blue) sectors, and assuming the same number of institutional and eCommerce functionalities for the desktop option – respectively 4 and 2 - and the same number of institutional and eCommerce functionalities for the mobile option – respectively 3 and 2 – the situation is the following (reported in Tables 8.4 and 8.5).

Clothing = 0.422 Furniture = 0.444	DESKTOP CHANNEL		
Clothing = 0.433 Furniture = 0.4	INSTITUTIONAL WEBSITE		
	FUNCTIONALITIES	YES	NO
1/10 = 0.1	Digital flyer	X X	
0.1	Newsletter subscription		X
0.1	Store locator	X X	
0.1	Loyalty card registration	X X	
0.1	Live chat /Chatbot		X
0.1	AR/VR to visualize products	X	X
0.1	Virtual tour of the store		X
0.1	Remote booking for in-store visiting		X
0.1	Check availability	X	X
0.1	Check availability with quantity		X
Clothing = 0.567 Furniture = 0.6	ECOMMERCE WEBSITE		
	FUNCTIONALITIES	YES	NO
1/3=0.33	Selection and purchase	X X	
0.33	Cross-channel pick up/payment		X
0.33	Order monitoring	X X	

Table 8.3 Desktop website functionalities example

Clothing = 0.578 Furniture = 0.556	MOBILE CHANNEL		
Clothing = 0.433 Furniture = 0.4	INSTITUTIONAL WEBSITE		
	FUNCTIONALITIES	YES	NO
1/12=0.083	Digital flyer		X
0.083	Newsletter subscription		X
0.083	Store locator	X X	
0.083	Loyalty card registration	X X	
0.083	Live chat /Chatbot		X
0.083	AR/VR to visualize products		X
0.083	Virtual tour of the store		X
0.083	Remote booking for in-store visiting	X	X
0.083	Information collection in store (I.e.: QR code)		
0.083	Check availability	X	X
0.083	Check availability with quantity		X
0.083	Functionalities allowing in-store purchases		X
Clothing = 0.567 Furniture = 0.6	ECOMMERCE WEBSITE		
	FUNCTIONALITIES	YES	NO

1/3=0.333	Selection and purchase	X X	
0.333	Cross-channel pick up/payment		X
0.333	Order monitoring	X X	

Table 8.4 Mobile website or app functionalities example

The weighting process will be the following for the two cases.

Clothing company:

$$\begin{aligned}
 & \left(\begin{array}{c} \text{Sum of desktop} \\ \text{institutional} \\ \text{functionalities} \end{array} \right) \left(\begin{array}{c} \text{Institutional} \\ \text{weight} \end{array} \right) \left(\begin{array}{c} \text{Functionalities} \\ \text{weight} \end{array} \right) \left(\begin{array}{c} \text{Desktop} \\ \text{weight} \end{array} \right) + \left(\begin{array}{c} \text{Sum of mobile} \\ \text{institutional} \\ \text{functionalities} \end{array} \right) \left(\begin{array}{c} \text{Institutional} \\ \text{weight} \end{array} \right) \left(\begin{array}{c} \text{Functionalities} \\ \text{weight} \end{array} \right) \left(\begin{array}{c} \text{Mobile} \\ \text{weight} \end{array} \right) = \\
 & (4 * 0,1 * 0,433 + 2 * 0,333 * 0,567) * 0,422 + (3 * 0,1 * 0,433 + 2 * 0,333 * 0,567) * 0,578 = \\
 & (0,173 + 0,378) * 0,422 + (0,129 + 0,378) * 0,578 = \\
 & 0,233 + 0,293 = \mathbf{0,526}
 \end{aligned}$$

Furniture and home improvement company:

$$\begin{aligned}
 & \left(\begin{array}{c} \text{Sum of desktop} \\ \text{institutional} \\ \text{functionalities} \end{array} \right) \left(\begin{array}{c} \text{Institutional} \\ \text{weight} \end{array} \right) \left(\begin{array}{c} \text{Functionalities} \\ \text{weight} \end{array} \right) \left(\begin{array}{c} \text{Desktop} \\ \text{weight} \end{array} \right) + \left(\begin{array}{c} \text{Sum of mobile} \\ \text{institutional} \\ \text{functionalities} \end{array} \right) \left(\begin{array}{c} \text{Institutional} \\ \text{weight} \end{array} \right) \left(\begin{array}{c} \text{Functionalities} \\ \text{weight} \end{array} \right) \left(\begin{array}{c} \text{Mobile} \\ \text{weight} \end{array} \right) = \\
 & (4 * 0,1 * 0,4 + 2 * 0,333 * 0,6) * 0,444 + (3 * 0,1 * 0,4 + 2 * 0,333 * 0,6) * 0,556 = \\
 & (0,16 + 0,399) * 0,444 + (0,12 + 0,399) * 0,556 = \\
 & 0,248 + 0,289 = \mathbf{0,537}
 \end{aligned}$$

The previous example describes therefore a series of weighted sums which permits to obtain the total weight of the two tables in analysis. As it can be seen, even if minimum part, these differ among sectors due to survey responses.

There is anyway one last step to complete: weighting the *total sum of desktop and mobile functionalities* for the value assumed – within each sector – by the *directly managed online channels* with respect to the other two

areas included in the strategy sector. This final consideration, as previously introduced, will be done after their explanation.

Indirectly managed online channels and alternative selling modalities

Shifting to indirectly managed online channels and alternative selling modalities, from non-scientific literature it has emerged that marketplace is a highly interesting channel for retailers – independently from the sector they operate in – thanks to its growing success and the reduced implementation costs.

Additionally, according to the *Digital Commerce 360* the top 100 online marketplace at a global level in 2020 recorded a growth of Gross Merchandise value (GMV) equal to 29% – 10% higher than the growth recorded in 2019 – and reached a value of \$2.68 trillion; focusing on the American market, the number of online retailers selling on marketplaces grew up to 59% in 2021 from less than 50% in 2017. Consequently, from a *transactional* perspective, marketplace but also flash sales and eTailers – since their “structure” is quite the same – seems to be the touchpoints prevalently appreciated by retailers.

From a *relational* perspective instead, social commerce emerges as dominant. Social channels are spreading a lot in last years, but their usage is mainly confined to a way for customers to get in touch with the brand. As reported by the data processed by *Market Force*, from a survey conducted on more than 12.000 consumers in the US and UK, 78% of them are influenced by the posts they see on social media during the decision process; also, the marketing agency *ODM Group* found out that 74% of customers rely on social media before making purchase choices. These two data prove the central role of social media to get suggestions about brands’ proposals and offerings, but not yet to make purchases.

Regarding couponing websites, as reported in a lecture by professor Mangiaracina, *Research Manager of Osservatorio eCommerce B2c (School of Management – Politecnico di Milano)*, to date they should be considered as pure communication channels whose main objective is to bring traffic to the retailers’ website or point of sales; as well as social media, they are not intended as transactional channels yet. Additionally, couponing websites are not particularly convenient for retailers since brands, to offer products on those platforms, need to apply very high discounts and doing great “marketing investments” eroding their margins: consequently, they can't be thought as channels to increase turnover.

Instant messaging channels, videocall and live stream shopping platforms are new ways for interacting with customers. Born with the introduction of WhatsApp and other messaging platforms, their adoption registered a rapid increase during pandemic period. Since they are still a “work in progress” option for shopping, their usage can be considered a *hybrid* among relational and transactional purposes.

In the Table 8.6 are highlighted the % of adoption among the 300 Top Italian retailers in 2021:

FIRST GROUP	Marketplace	21%
	Flash sales	43%
	eTailers	38%
SECOND GROUP	Couponsing	7%
	Social commerce transactional	47%
	Social channel relational	86%
THIRD GROUP	Instant messaging relational	1,7%
	Instant messaging transactional	6,25%
	Videocall relational	2,5%
	Videocall transactional	4,6%
	Live stream shopping relational	0%
	Live stream shopping transactional	0,4%

Table 8.5 Indirectly managed online channels emerged from the Census

Consequently, the weighting process for this category has been built as follows.

From the previous table, it can be noted how the 3 “groups” in analysis have percentages of adoption becoming consistently lower when shifting from the first to the last one, with the only exception of social channel. Anyway, being difficult to consider one typology as prevalent on others in terms of benefits due to diversified business’ needs – and, so, different purposes – it has been chosen to assign the same value to each channel typology: $1/8$, where eight is the maximum number of channels activable.

Further explanations behind these reasonings will be highlighted below. It is necessary to specify that while the term “groups” is kept for reference, the weighting process will be referred to the single channels.

Consequently, considering the columns, a fixed weight of 0.5 to each transactional and relational purposes has been given; in case of no adoption the weight will instead be 0. Different analysis has been done for each of the three “groups”:

- If retailers use *marketplace, flash sales websites or e-tailer platforms*, the situation is as follows: a channel for relational purposes does not allow customer to buy products, and since it isn't the main aim of this channel typology will obtain half points, 0.5. On the contrary, a sales channel with transactional purposes already "includes" relational intent.

Consequently, for the current typology of channels, a retailer can obtain the maximum score just adopting them with a transactional purpose, meaning that the two ratings aren't mutually exclusive: category's maximum weight will be represented by the sum of 0.5 points of transactional usage and 0.5 points of the relational purpose, indirectly included.

The choice has been done to respect the main aim for which channels are though, assuming that few retailers use marketplaces, flash sales and eTailers for relational purposes only and that the majority, summing both contributes, will get 1 point.

- Considering *social touchpoints* within the second group, the weightings are due to the fact that, to date, this type of channel is more useful for informational purposes rather than for sales. If a retailer creates an Instagram account to show its product and to communicate with customers, it will gain half points; then, if the same retailer adds the purchase function to its account, it will gain the missing half. The relational purpose does not include the purchase function, but in this case gains half score since it is the main end of the channel. On the opposite, the transactional aspect gains low score because - in addition to not being the focus of the channel – the "transaction" aspect is simply represented by a link redirecting the potential customer to the eCommerce website.

Shifting to *couponing websites*, the reasoning is similar: even if this type of channel was born for transactional purposes, it is not profitable for retailers yet. At the same time, retailers can't get the maximum score even for relational either, as this is not the main end of the channel.

Consequently, a retailer can get the maximum value only using social and couponing channels for both purposes. Therefore, even in this case, the score will be assigned by addition.

- Finally, if retailers have implemented *instant messaging channels, videocalls and live stream shopping platforms*, they will get 0.5 points for both transactional and relational purposes, otherwise they will get 0. In this "group" too, channels aren't mutually exclusive and summing the contributions is allowed, but it is worth saying that, due to the specificity of channels' purpose, adopting them for transactional

purposes doesn't necessary include informational one. For example, in June 2021, M&S company introduced *Video Expert*, a service which allows online customers to connect with store employees for personalized advices, therefore mainly for transactional purposes; different is the other initiative introduced, "*Storestream*", which allows a limited number of customers to access live stream sessions held by salespeople and deepen their product knowledge for informational reasons.

Regarding this type of channels, the choice is related to two reasons: the newness and the non-complete clarity of their final aim. Consequently, if retailers are able to use them for both activities they will get the maximum value – $0.5 + 0.5$ – while if they employ one of the *hybrid* channels for just relational or transactional purposes, they will get half of the total value.

Mentioning again the lecture of Professor Mangiaracina, it can be affirmed that since transactional, relational and "hybrid" channels are not exclusive but complete themselves, retailers should pursue differentiation for the establishment of a proper omnichannel strategy: considering the three divisions and assuming the situation in which a retailer hasn't the possibility to introduce all the previously listed channels, it would be better to be present on different typologies with one touchpoint each, rather than on just one "group" with many touchpoints. Different channels imply different customers' targets, and this is the reason why it is important to use them in a complementary manner.

Additionally, in this way it would be possible to cover the various needs and characteristics of different sectors: for example, it is more likely that a retailer operating in the clothing industry will be present on a flash sales website, while a food retailer will prefer to work on a marketplace.

In the Table 8.7 are summarized the 3 "groups" with the relative weights both in columns and by rows: the total value for the category will be a weighted sum of each typology a Retailer has for the reason why it is used.

INDIRECTLY MANAGED ONLINE CHANNELS AND NEW SELLING MODALITIES				
	CHANNELS & SELLING MODALITIES	YES FOR TRANSACTIONAL PURPOSES = 0.5	YES FOR RELATIONAL PURPOSES = 0.5	NO = 0
1/8=0.125	Markeplace			
0.125	Flash Sales			
0.125	e-tailer			
0.125	Couponing			

0.125	Social commerce			
0.125	Instant messaging			
0.125	Call/Videocall			
0.125	Live stream shopping			

Table 8.6 Indirectly managed online channels

One point of attention is related to *Flash sales*” websites. Indeed, while for all other sectors are considered platforms as VeePee, Privalia, Zalando Privè and others, companies belonging to food and large-scale distribution sector can’t offer products on the previously cited websites.

Therefore, for food products, the category will still be included in the analysis, but as alternative to lash sales channel will be considered platforms such as *TooGoodToGo*: a mobile application connecting customers to restaurants and shops that have unsold food surpluses. The principle behind, indeed, is the same: while this latter alternative is thought for reducing food surpluses with limited time deals, traditional flash sales websites include brands offering discounts and promotions for a short period of time, many times over end-of-season products.

Another peculiarity concerns *live stream shopping*: even if it isn’t yet a common practice in food and large-scale distribution sector, Walmart has put in place an initiative based on it. The American giant has launched a live stream shopping service in partnership with Facebook and Pinterest, which permits customers to add products to their cart while assisting to the shows broadcast. Therefore, the current category remains included within food sector too.

8.2.1.2 Channels management

This category refers to the 4 factors previously analyzed in literature: *assortment, pricing, promotions, and services*. Since retailers are progressively understanding their importance and impact on a successful omnichannel strategy, it is important to study them according to the following division: “aligned”, “partially aligned”, “not aligned” between offline and online channels.

Weight	CHANNEL MANAGEMENT	ALIGNED	PARTIALLY ALIGNED	NOT ALIGNED
1/4=0,25	Assortment			
0,25	Pricing			
0,25	Promotional policies			
0,25	Services			

Table 8.7 Channel management

The first step is an explanation of the 4 variables above disclosed reasoning according to the 3 possible column alternatives.

Starting from *assortment management*, as stated by Robert P. Rooderkerk and A. Gürhan Kök in the scientific paper *Omnichannel assortment planning* - summarizing the possible types of integration through the figure 8.6 reported below, - the best situation on a theoretical level should be having the *same assortment* available both online and offline. On a practical level, this is difficult to achieve, as in the majority of cases it results almost impossible to keep in stock the entire assortment within stores.

On the other side, it can be affirmed that the *no integration* case could only make sense when a firm has very different customers segments to satisfy with distinct preferences between channels.

Considering instead the *partial (or asymmetric) alignment* are presented three different configurations:

- situation (a) is typical of those retailers who are approaching the online world for the first time and therefore intend to limit its complexity, but it is also frequent in those cases where the physical in-store experience is fundamental to guide the purchase decision;
- as far as the (b) configuration is concerned, the drivers are mainly linked to physical spaces constraints, regarding both shelves and warehouse spaces shortage in store;
- (c) alternative, finally, is related to subjective Retailer's choices according to which some products are intended for online-only while some others for offline-only.

To conclude, there may be several reasons for which retailers could prefer partial over full integration, or vice versa. In general terms, anyway, moving towards these two strategies – with different settings depending on *sectors* – should be beneficial since it allows to avoid confusion and limits channels' cannibalization.

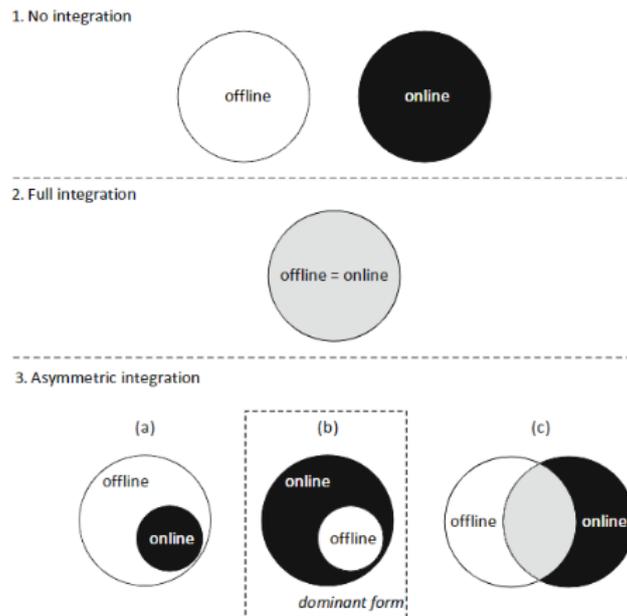


Figure 8.6 Types of assortment integration (Omnichannel assortment planning, Robert P. Rooderkerk and A. Gürhan Kök)

Regarding *price management*, the three existing options are well summarized in an article from *Prisync*, a business offering a software focused on price monitoring:

- *Channel specific pricing*: in this first case, the in-store price proposed to customers, is different – usually higher – than the one set on the online website or in the social media pages. This strategy only works if the customer journey is linear and involves the adoption of a single channel: since in the majority of cases it is not anymore like this, it is likely for customers to become frustrated and to develop a negative attitude towards the brand, when price inconsistencies between channels will be noticed.
- *Combination*: this solution, according to which retailers can offer markdowns over some products in a specific channel, result to be better than the previous category; the main constraint in this case is to provide coherent and unique customer experience according to the channel.
- *Omnichannel pricing*: this last category, providing a coherent pricing among channels, is key in case of businesses looking for customers loyalty and retention. Furthermore, according to *McKinsey*, price alignment represents a great help in avoiding showrooming behaviors.

Figure 8.7 reports different pricing options

Pricing approach	Defined	Tips
Omnichannel price	The same price on every channel	Removes barrier to purchase by using the same price across all channels
Channel-specific price	Pricing varies depending on channel	Optimize price and margin in each of the channels you use
Combination	The same omnichannel price with some exceptions	Provides and all round unified buying experience

Figure 8.7 Three types of omnichannel pricing strategies (Omnichannel Pricing: A Comparison of 3 Different Strategies, Jordie Black)

Therefore, the most successful solution for retailers should be characterized by partial or complete alignment of prices. Eventually, "channel-specific" promotions can be used: from one side, they allow to attract new customers; from the other side, they permit to improve current customers satisfaction.

Anyway, shifting to the two remaining factors, the important findings are summarized as follows:

- according to the above-mentioned article from Prisync, even with regard to *promotional policies* a total misalignment is not the best solution for omnichannel retailers: too many promotions on a single channel “might alienate those who use a different channel to purchase”.
- moreover, according to survey data reported in the paper *Service integration in omnichannel Retailing and its impact on customer experience*, retailers should guarantee a certain degree of consistency and transparency of *services* across different channels in order to improve customer experience and increase retention.

According to the % of papers dealing with each of the 4 categories, it is possible to notice how *assortment and pricing* topics in scientific literature are slightly more common – with 44% and 43% respectively – than *promotional policies and services* – with 26% and 37%.

The first two can be considered as the “enablers” of an omnichannel strategy implementation: indeed, variety and range of available assortment determines *where* – online or offline – and *how* – eventually using specific

omnichannel models proper of each channel – a purchase will be made; pricing instead determines *if* the purchase will be concluded, depending on the convenience for the customers.

On the other side, promotions and services are considered the “consequence” of the omnichannel strategy adopted.

Bearing in mind this prevalence and the fact that all four factors should be taken into consideration since the first phases of an effective omnichannel program implementation, weights won't be differentiated: to reach the maximum value, *0.25 points are assigned to each of the four topics.*

Regarding columns' weights, it could be affirmed that *alignment* is what retailers should be working on in terms of omnichannel strategy, and so it should take the maximum value – *1* – since from the majority of analyzed papers stems this result. On the other side, for some sectors, it could happen that retailers do not need to be in a situation of complete alignment, but that a *partial alignment* is enough for managing the business. Being only partial information available on this, and being too subjective, for this reason, it could be affirmed that partial alignment should get the maximum weight too: it will be firms' job to then understand if the level at which they are now is the maximum achievable or if space for improvement is left.

To conclude the analysis, the *no alignment* case is the only one whose value can be considered fixed: independently from the sector under analysis, managing a business in a no aligned way seems to be against an omnichannel strategy: it has therefore been decided to assign to this category 0 points. Anyway, since “no alignment” in some cases could be preferable – i.e., for simplifying some business areas, especially at the beginning of strategy implementation – the only constraint to this is represented by the fact that retailers, to be considered “omnichannel”, should have at least 1 out of the 4 factors (*assortment, pricing, promotions, services*) in a situation of partial or total alignment. If, indeed, every aspect is managed in a no aligned way, the Retailer cannot yet be considered omnichannel and therefore, whole section's weight will be 0. The reasons behind what just affirmed rely on the fact that that having one or more factors totally or partially aligned but not all of them can demonstrate the evolution process of a company towards a greater alignment in an omnichannel perspective.

To conclude *strategy's section* the final step is to combine the three described areas.

To implement an omnichannel program it is certainly necessary to be present on different typologies of online channels but sometimes, especially for the directly managed ones, their management – fully or partially integrated – could result equally or more important.

As emerged from the answers collected from the survey, 3 *different combinations* can be identified depending on sectors:

- *Clothing, cosmetics, electronics, and other categories'* answers follow the same path: the majority of interviewed retailers included in these sectors evaluates particularly important the online presence on direct channels, followed by their integrated management and, just to conclude, by the presence on indirect channels.
- *Food* sector represents instead a particular case, in which directly managed channels and their management assumes the same weight, higher than the presence on indirectly managed ones.
- Opposite situation is finally represented by *furniture and home improvement* retailers, for which the management of direct channels assumes fundamental importance, followed by indirect and direct presence respectively.

These 3 trends confirm what was assumed in the introductory part of the section: retailers' own website or mobile app should receive, in almost all cases, greater weight than indirectly managed channels.

Also, the *top or central position* of the management category, underlines how having directly managed touchpoints and being good in managing them is fundamental: indeed, independently from points' distribution and from the sectors, *direct channels and integrated management* weightings assume, together, over 0.65 points over 1.

In the Table 8.9 are summarized the results coming from survey responses, that precisely represent tables' weights according to sectors.

	DIRECT CHANNELS	INDIRECT CHANNELS	INTEGRATED MANAGEMENT
Clothing	0.438	0.229	0.333
Food	0.364	0.273	0.364
Furniture and home improvement	0.25	0.333	0.417
Cosmetics	0.39	0.26	0.36

Electronics		0.39	0.26	0.36
Other		0.478	0.174	0.348
High	Medium	Low	Sum of weights by row = 1	

Table 8.8 Strategy's categories weights per sector (sample 25 retailers, values range 0-1)

The total weight for the *channels' typology* category will therefore be:

- “Total weighted sum of desktop and mobile functionalities” explained before, multiplied by the *direct channels weight*.
- *Weighted sum of the indirect channels adopted, combining institutional and transactional purposes, multiplied by the indirect channels weight.*

The total weight for the *channels management* category will consequently be a weighted average of each category's value – *assortment, price, promotional policies, services* – and the way in which each of these factors is managed (*aligned, partially aligned, or not aligned*), multiplied by the *integrated management weight*.

According to Accenture's *High Performance Delivered 2018* study, 69% of customers want omnichannel services and multi-channel customers are generally 15% more profitable only-digital ones. They are also 25% more profitable than customers who only have just "human experiences", and therefore those who make purchases in the traditional way. Consequently it can be affirmed that the more channels are manned, the better for the firm.

Consequently, for the whole section's weight, it has been reasonable to consider assigning the maximum total value only if a retailer is present, with different levels of progress/advancements, on all the previously described channels' categories: stores (for completeness), online directly managed and online indirectly managed. In this way, the maximum score reachable combining “*channel*” area and “*channel management*” area will be 1. Indeed, if for example a Retailer doesn't include indirect online channels in his strategy, it won't have the possibility to obtain the maximum section's value.

8.2.2 Data strategy

Shifting to the data strategy, this section is composed by two main parts to build a complete overview on how omnichannel retailers treat and manage data coming from different sources.

The first part refers to customer identification. More precisely, it will be explained through which data retailers can decide to identify customers in both online and offline channels. Then, the integration degree of collected data will be taken into consideration in the analysis.

The second part will focus on clients' data that retailers can collect both from owned or third parties online and offline touchpoint for profiling purposes and comprehends two different categories: the first one analyzes the collection step and, unlike the previous part which includes data collected just for customers' identification intent, data in in this category will be useful for different purposes – from data aggregation to data integration and execution; the second one focuses instead on data usage.

8.2.2.1 Data for the identification in directly managed stores & online channels and how to manage them

Customer recognition for identification purposes in an omnichannel environment should have, as emerged from scientific literature, the following objective: the construction of a “unique vision on the customer”.

Considering this as the premise over which conducting further reasonings according to data collected from survey responses, a two-step process has been followed, to concurrently assign the weights of the following tables (8.10, 8.11)

CUSTOMER IDENTIFICATION IN DIRECTLY MANAGED STORES AND ONLINE CHANNELS				
Weight	DATA COLLECTED	YES IN STORE = 0,5	YES ONLINE = 0,5	NO = 0
1/6=0,167	Name and surname			
0,167	Codice fiscale			
0,167	Phone number			
0,167	Mail address			
0,167	Fidelity card			
0,167	Social channel			

Table 8.9 Data collection for customer identification

DATA INTEGRATION FOR CUSTOMER IDENTIFICATION		
INTEGRATED = 1	NOT INTEGRATED BUT WORKING AT IT = 0.5	NOT INTEGRATED = 0

Table 8.10 Data integration for customer identification

In the first table, “yes, online” and “yes, offline” columns assume the same value, 0.5 points each; to “no” column has instead been assigned 0 points. As can be seen, considering the typology of touchpoints on which data are gathered – online and offline – a retailer could reach as maximum 1.

Anyway, further reasonings must be done considering then if data is tracked on both channels and integrated – as will be explained – 1 point will be gathered; in the other cases, weightings decrease progressively in case of “no integration but working at it” – 0.5 – and “no integration” – 0.

Consequently, considering the two tables in an overall evaluation, a retailer can get:

- A low/medium score if it is able to recognize its customers with, respectively, few/many data – following an additional logic – gathering them in one or in both channels but not integrating them (“no integration” in the second table).

Therefore, assuming to give the same weight to each data – $1/6$, considering the total amount of data in the table – the maximum score achievable collecting all data in one channel is 0.5 while collecting them on both channels but keeping them separated results to be 1.

The explanation behind this reasoning is linked to the necessity of being able to uniquely identify customers in a “cross-channel” way: indeed, if a Retailer is able to fully recognize a customer through the full list of data gathered in the offline channel, when that customer will use an online touchpoint, for the Retailer it will result as a completely new client if data aren’t shared between touchpoints.

Consequently, if a retailer collects data only through one channel, these can’t be integrated, and no additional points will be gathered (0).

- A medium/high score if it’s able to recognize its customers with some/many data – reasoning in “addition”, the more you have, the better – gathering them through both channels, so online *and* offline and integrating them (“integration” and “no integration but working at it” cases).

Assuming, as before, to give the same weight to each data – $1/6$ – only integrating them a Retailer can have the possibility to get a very high value. More precisely, starting from the “best case” described also in the previous section, a Retailer will obtain from the second table:

- 1 in case of “integration”

- 0.5 in case of “no integration but working at it”

Thanks to data integration, if a customer shopping in a point of sale will provide his email address or phone number, the retailer will be able to track if, for example, that client is registered on its website or if he has already purchased some products online in the past.

It is worth specifying how the weighting system works. Indeed, even if the reasonings of the two previous tables have been done concurrently for a major clarity, the values coming out from each of the two tables will be multiplied by the relative weight obtained by analyzing survey responses, before proceeding with the sum. The points assigned to each table will be disclosed at the end of the section comparing them to other tables’ values.

To better understand the mechanism for assigning scores in this category, an example is presented.

A retailer operating in the food and large-scale distribution sector requires name and surname, email and telephone number to identify customers on the website; in the store the customer is recognized through name and surname plus loyalty card (data reported in the table 8.12 below). The Retailer is able to integrate the collected data and thus create a unique view of the customer.

Data collected	YES IN STORE	YES ONLINE	NO
Name and surname	x	x	
Codice fiscale		x	
Phone number		x	
Mail address			x
Fidelity card	x		
Social channel			x

Table 8.11 Example of data collection for customer identification

*The score the Retailer obtains from the data collection step is $= 2/6*0.5 + 3/6*0.5 = 0.4167$.*

Since the data is also integrated, to the previous score it should be added 1 point coming from the second table.

*Thus, summing the two contributes by previously weighting them according to the tables’ scores from survey data, the total score that the Retailer gets in this category is: $0.33*X + 1*Y = Z$.*

X and Y represent tables’ weights; Z is the result it would be obtained.

To summarize, retailers' focus should be to *collect the most information* to identify the customer on *both channels and to integrate them*: it is worth specifying that the “typology” of information collected is not determinant, since it is company's choice based on subjective factors.

A very high score will be reached only if the Retailer in analysis will be able to identify the customer with a range of complete data on the two channels and integrate the two views; the lower the number of data collected, the lower the final value of the first table. Indeed, while first table's overall value diminishes as less data are collected, second table's values remain the same also considering a lower number of data gathered.

It is consequently clear that the key role in this case is played both by the *quantity* of data collected and, even more, by the *integration efforts* done.

8.2.2.2 Data collection for profiling purposes

Weight	DATA COLLECTED	ONLINE	IN-STORE	THIRD PARTIES	NO BUT INTERESTED	NO
1/8=0.125	Personal data (name, surname)					
0.125	Contact information (email, mobile, ...)					
0.125	Data related to advertising campaigns on traditional and online media					
0.125	Information generated by one-to-one contact with customer (chat, call center, email, ...)					
0.125	Satisfaction data					
0.125	Data related to the use of the loyalty card					
0.125	Purchase history					
0.125	Analytics data on proprietary channels (behavior on website, in-store, on Apps, ...)					

Table 8.12 Data collected for marketing purposes

As already seen in literature, the more data is collected, the better it is for retailers. Having the possibility to create unified customers view thanks to online and offline data gathered, is key for understanding customers' behaviors first, and then to target promotions and offers in a personal way. In addition, it gives retailers the possibility to build “segments” views of clients and to understand with much more security if a specific product release or marketing campaign will appeal them or not since the beginning, according to “segments” behaviors.

To summarize, having the possibility to explore customers' data and habits brings measurable benefits such as:

- the improvement of internal processes to achieve specific business goals and define new product development;
- the improvement of customer service in a more personalized perspective;
- finally, the consolidation of the relationship with the customer leading to greater long-term loyalty.

It can be concluded that, for this category, weights should be given to get maximum 1 summing all rows, to which is given the same weight of 1/8.

Searching for confirmation in scientific and non-scientific literature, data can be divided classified as "*basic*" and "*complex*" information.

Specifically, structured and complex data are defined as *information that can give greater value added in the interpretation of customers' needs and requirements*, that then allow to provide an experience as personalized as possible.

On the contrary, the simplest data allow mainly to identify him better, but give little information about purchasing habits and preferences: consequently, it is difficult to use them since their *usefulness for marketing and personalization purposes is evidently lower*.

The presentation of the following factors, will therefore be done with the aim of understanding which are the most useful data for retailers and why, reasoning concurrently on the difficulty to gather them:

- *Personal data (name, surname)*: easy to gather both offline – through subscription forms – and online – through self-registration on website or app. Their utility is mainly related to recognition factors.
- *Contact information (e-mail, mobile phone, ...)*: risk of no complete information in case of “non-compulsory fields” to fill-in; anyway, since many times it is enough to have just one between – for example – e-mail and phone number, it could be considered easy to collect as the previous category. The utility, for this category too, is mainly related to recognition factors.
- *Data related to advertising campaigns on traditional and online media*: these data can be intended as sales increases consequent to specific marketing campaigns. This category is among the most difficult

to track since the measurement of specific products' interest it is not always straightforward and not always a consequence of the introduction of marketing campaigns.

The collection of this data, to be useful and rewarding, will need an additional level of analysis. Splitting the online and offline possibilities to collect information, while for online sales tracking could be adopted some systems for establishing a parallelism marketing-purchases, for what regards offline shopping the situation is more complex. Customers indeed many times enter stores to buy something different and eventually do additional purchases at random or, on the contrary, they decide to enter the store to buy effectively the item promoted: this uncertainty is difficult to prove.

- *Information generated by direct contact with the customer (chat, call center, email, ...):* mostly trackable online, since it refers to the usage of additional channels to answer specific requests or complaints.

The usefulness of these data is mainly linked to the ability to understand what the most frequent requests of customers are and consequently be able to meet them in a preventive manner; the main issue is linked to the frequency with which they are collected, since many times it happens occasionally.

- *Satisfaction data:* similarly to the previous category, satisfaction is easier to track online with respect to offline. Many times, indeed, to online customers are proposed quick surveys or questionnaires to track their satisfaction with the shopping experience; on the offline channels, instead, the situation of proposing paper questionnaires is not particularly common or not appreciated except in exchange of something (i.e., coupons, discounts).

This data allows retailers to understand how they are meeting or not customers' expectations in the various channels, also highlighting eventual discrepancies between them. For instance, if it emerges that a customer is more satisfied with the in-store experience rather than the online one, retailers can understand where to intervene and concentrate their efforts: in this case, it would be necessary to improve the online experience.

In addition to the difficulty related to in-store data collection as previously mentioned, the main flaw related to this type of data - as reported by McKinsey in the article *How to capture what the customer wants* - regards the difficulty to understand precisely where, along the customer journey, customers are

encountering problems. Consequently, to identify patterns and to then undertake specific actions, data collection must be sufficiently frequent.

Another type of satisfaction data that can be collected - especially in the clothing industry – is related to single products, such as item reviews. These data provide important information on the products of greatest customers' interest but, as before, it is difficult to collect them offline: they are significant only if tracked frequently and from a significant number of customers since it is worth noting that not all clients review purchased products.

- *Data related to the use of the loyalty card*: slightly more difficult to gather for two reasons: from one side, not all customers are willing to sign for the loyalty card; from the other side clients don't always use it in case of cross-channels purchases. Consequently, retailers risk to have partial or complete information on them. Anyway, this data represents the first step towards a detailed profiling of customers: each time a client makes a purchase and uses the loyalty card, the transaction is recorded and associated with the user's account. This allows retailers to create a profile of their shopping "paths" with respect to the purchased products, the value of the average receipt, the method of payment used, etc.
- *Purchase history*: easy to track online, once registration is completed, being a characteristic of many websites; slightly more complex to track in store. Many times, the possibility of tracking offline purchases depend on the typology of sector in analysis – i.e., luxury brands vs. common brands – or, in case a brand is already partially omnichannel, it could be intertwined with the online purchase history.

This data allows retailers to know customers' shopping preferences and to consequently propose ad hoc offers and recommendation about the most suitable products for them, with the final aim to implement up and cross selling actions. A constraint linked to them is that they are "collectible": therefore, they are very useful for historical and usual customers but almost unusable – at the beginning – with new ones. This category can be considered more complex to track but also increasingly useful.

- *Analytical data on proprietary channels (behavior on the website, in the store, on the apps, ...)*: according to the paper "Omnichannel Assortment Planning": "the physical store can be considered as a "great quality laboratory"; a website and an app can provide a lot of quantitative data on product

research and evaluation". Assuming that data coming from both channels are key for retailers to improve their way of working, it is also needed to say how creating a pattern for them is difficult. Clearly, unlike the offline channels, in the online touchpoints the process is simpler and more immediate: through eCommerce websites it is possible not only to track the products bought but also to understand which device has been used for the purchase, how the customer moves around the website, how he filters and sorts products and if he has viewed other items before choosing.

Therefore, tracking how customers behave generates important insights into their preferences but it also allows to enhance assortment management, adjust products positioning within stores and suggest new items to customers.

Looking at the columns, 5 options are considered: the collection of data online and offline, the collection of data from third party sources, a situation of interest in data collection even if the process is not yet in place and, finally, the absence of interest in data collection.

Since, considering the importance of the category in analysis, it is key to gather both online and offline data for guaranteeing a seamless customer experience and to build a complete and integrated customers' view, the weightings have been the following:

- 1/3 each to "yes, online", "yes, in store" and "yes, from third party" columns; in this case a retailer could get the maximum weight only if it collects all the previously listed data in all three channels.
- 1/6 each to "no but interested" column; this value weights half of "yes" column, since it represents an actual interest in adopting a collection method or process for a specific category of data in analysis.
- 0 points to column "no", since it represents evidence of scarce or null interest over a specific category of data in analysis and, concurrently, results to be negative from an omnichannel perspective.

According to this division for rows and columns:

- A Retailer collecting all data both online and offline and from third party sources independently from the typology of touchpoint, will take the highest value – both in line and in total.

For example, if a retailer with reference to a specific data, *collects it in all three touchpoints*, it will take: $1/8 * 0.33 + 1/8 * 0.33 + 1/8 * 0.33$. Therefore, considering the case of higher number of data collected in this way, it's clear since here that this case will be a scenario for few players.

Anyway, considering the great value that data are assuming in today's "phygital" world, grading this section as previously explained has been thought to make retailers aware that there is huge space for improvements. As reported by many research "*data are many times collected, but not really used*" and for guaranteeing a proper usage the "collection" step is the basis.

- If, in reference to a specific data, anything is collected but the Retailer is *interested in doing so*, it will take $1/8 * 0.167$; it is worth noting that in this column there won't be any division for online, offline and third party.
- If a Retailer does not collect *any data*, in one or both channels, the result will be 0.

8.2.2.3 Data usage for profiling purposes

In the data usage section, the objective is to analyze if and how retailers use the collected data.

Weight	DATA USAGE	ADOPTION
0	Data collection without any processing	
0.2	Data collection and processing in a disaggregated manner	
0.4	Data aggregation to create customer clusters	
0.6	Data integration to create a single customer view	
0.8	Data integration and aggregation	
1	Data collection, aggregation and integration + execution	

Table 8.13 Data usage for profiling purposes

As can be first noted from the table 8.14, the classification follows an incremental logic.

Data usage, indeed, evolves from the basic level – in which information are just collected without any processing – till the highest level – in which data are not only collected, aggregated and integrated but also used to activate communication and marketing initiatives both at an individual and cluster level.

With respect to other sections, in this case it's not necessary to distinguish between "yes" and "no" columns: a Retailer can find itself in just one level of the "path". Additionally, it can be assumed and affirmed that when a

Retailer uses data in a certain way, he should have already “accomplished” the previous steps and, eventually, it should be willing to work towards next ones.

For assigning weights it has been necessary to reason in terms of complexity, since data usage can be compared to a pyramid: being 6 levels of evolution, starting from 0 as basic step (*Data collection without any processing*) and considering 1 as the maximum reachable value (*Data collection, aggregation and integration + execution*), each level’s weight increases of 0.2 points compared to the previous one.

- At the basis there are *Data collection without any processing* and *Data collection and processing in a disaggregated manner*. These two categories refer to basic data usage: retailers should work towards greater level of usage evolution and considering that efforts to be implemented are low, the assigned weights are respectively 0 and 0.2 points.

The inability to act on the available data risks to create “impersonal” experiences that risk frustrating buyers and damage a potential conversion. Unfortunately, this practice is not uncommon/rare: according to research by the *Osservatorio Omnichannel Customer Experience (School of Management – Politecnico di Milano)* research, in Italy almost one out of five companies – 18% of cases – doesn’t have yet any technology capable of integrating customer’s data and information.

- In the middle, going towards *Data aggregation to create clusters* and *Data integration to have single customer view*, data usage can be defined as intermediate or WIP towards highly unified levels: being able to manage data in this way requires more organizational efforts and timing. The weights assigned are, respectively, 0.4 and 0.6.
- On top, *Data integration and aggregation but even more Data integration, aggregation and execution* are the toughest steps in the data usage process: the weights assigned are 0.8 and 1 respectively. As reported in the paper *The future of omnichannel Retail: A four-stage Delphi study*, being able to identify customers and their in-store purchasing preferences is essential for retailers to create an “*holistic view of their customers to tailor in-store offerings and seamlessly integrate stores into the omnichannel experience*”.

According to a survey by Mckinsey, indeed, organizations able to collect and process data for creating a 360° customer view and generate insights are able to "outperform peers by 85 percent in sales growth and by more than 25 percent in gross margin".

To conclude *data strategy* section, the final step concerns the combination of the subcategories just explained.

	DATA FOR IDENTIFICATION		DATA INTEGRATION DEGREE	DATA FOR PROFILING PURPOSES	DATA USAGE LEVEL
Clothing	0.3		0.3	0.2	0.2
Food	0.292		0.27	0.225	0.213
Furniture and home improvement	0.25		0.25	0.225	0.275
Cosmetics	0.29		0.27	0.23	0.22
Electronics	0.29		0.27	0.23	0.22
Other	0.275		0.225	0.275	0.225
High	Medium-high	Medium-low	Low	Sum of weights by row = 1	

Table 8.14 Data sections' categories weight per sector (sample, 25 retailers, values range 0-1)

Considering the four topics previously disclosed, 2 macro-areas have been identified:

- The first regards data collection for customer identification purposes and their integration degree among channels to create a unified client's profile overview;
- The other regards data collection for profiling purposes, which can evolve along different usage steps, from aggregation to integration to profiling initiatives.

This two-by-two trend is evidenced also from survey responses: being able to uniquely identify the customer between the different sales channels is considered more important than collecting and using data to personalize marketing initiatives; the only exception is represented by *furniture* and *other* sectors, for which the respective results are equally split (0.5 each).

In addition, it is also possible to notice how, in both areas, the category linked to *data collection* assumes slightly higher importance than the *integration or usage* steps, as it can be thought as the "preparatory" phase necessary to put in place the further steps.

One peculiarity can be anyway noticed within *clothing sector*, in which collection and integration steps assume same values. Within *furniture* sector instead, in the area related to profiling purposes, a contrasting trend arises: the data usage level is assumed more important than the collection phase.

Anyhow, collecting a lot of data about customers – regardless of their final aim – is useful only if the retailer is also able to then use them in a proper way. This is the reason why the gap between the components of the two macro-areas isn't wide and, in some cases, is null.

8.2.3 *Omnichannel models and operations*

The third section of the index focuses on omnichannel models and operations. To allow the end customer to live the same experience regardless of the purchasing channel it is necessary that:

- internal back-end processes are integrated with each other;
- technological solutions and systems that can support such integration are available;
- finally, models that allow customers to move seamlessly between the two channels such as click&collect, return in store etc. are put in place.

Exactly for these reasons, the three above mentioned factors represent the subsections that make up operations section.

8.2.3.1 *Omnichannel models*

Considering the omnichannel models, starting from Census data and evidence coming from Retail and eCommerce news, it has been noticed that retailers belonging to different sectors choose to include in their omnichannel strategy just some of the models listed below, mainly depending on the types of products sold and according to customers' needs: for these reasons, the weighting process has been conducted considering business differences since the beginning.

Being inaccurate to give a greater value to a model over another in absolute terms basing the reasonings on the % of adoption, they will be weighted in the same way - $1/X$ – where X is the maximum number of models. The weighting system therefore focuses on the *number* of models adopted: retailers using a greater number of models will obviously score higher.

The omnichannel models considered are:

- purchase and pick-up at the physical store;
- online purchase and home delivery;
- in-store purchase and home delivery;

- online purchase and in-store pickup – click&collect;
- online purchase and in-store pickup – drive&collect;
- online reservation and in-store payment and pickup – book&collect;
- online selling in store (from smartphone or in-store device);
- return in the store regardless of the channel used during purchase.

As for previous categories, a premise should be made on the first two models: purchase and pick up at the physical store and online purchase and home delivery. These models, indeed, are not considered omnichannel but are linked to the basic definition of “retailer” and “pure online player”, respectively. Therefore, they have been considered for sake of completeness and to better frame the analyzed actors, but since they exploit just one typology of channel, they will not gain any points. Consequently, the other models will get 1/6 since that 6 is the number of omnichannel models included.

As concerns the others omnichannel model listed, the remaining part of the section will analyze, *sector by sector*, the models included in the analysis, and which are the most adopted by each one.

As first reference, data from 2021 Census was used, specifically sampling 239 retailers which corresponds to the ones having an eCommerce initiative either through a website or a mobile app. The following table shows the results for the different sectors.

To have a more detailed analysis of the trends characterizing different models, news about the omnichannel strategy implementation for the current year were considered.

Consequently, while the table 8.16 is kept for reference, some additional comments will be made considering the table 8.17.

	retailers with eCommerce	Click & collect	Book and collect	Drive and collect	Online selling in store	Return in the store
Clothing and footwear	59%	50%	11%	1%	15%	41%
Food and large-scale distr.	20%	71%	67%	15%	4%	21%
Electronics	3%	17%	67%	0%	17%	50%
Furniture	5%	54%	15%	0%	8%	23%
DIY	3%	67%	17%	0%	17%	50%

Cosmetics	4%	80%	40%	0%	10%	50%
Other	7%	75%	31%	6%	0%	44%
Total	100%	57%	27%	4%	11%	37%

Table 8.15 Omnichannel models traced in the Census

	retailers with eCommerce	Click & collect	Book & collect	Drive & collect	Online selling in store	Return in the store
Clothing and footwear	26%	53%	21%	5%	16%	21%
Food and large scale distr.	51%	63%	13%	39%	8%	3%
Electronics	5%	50%	0%	0%	100%	0%
Furniture	3%	100%	0%	50%	0%	0%
DIY	4%	67%	33%	33%	0%	0%
Cosmetics	0%	0%	0%	0%	0%	0%
Other	11%	88%	0%	13%	13%	0%
Total	100%	64%	14%	26%	15%	7%

Table 8.16 Omnichannel models emerging from the news

Going on with the sector-by-sector analysis, according to *apparel and footwear industry* data, *click and collect* and *in-store returns* results to be the most widespread models, followed by *book and collect* and *online selling in store*.

Some data confirming the importance of click-and-collect in the sector in analysis come from a *GlobalData's* investigation of the UK market: models which include the purchase of products online followed by in-store collection are constantly growing and may show an increase of 48.5% over the next 5 years. In particular, the clothing and footwear industry is at the top of the ranking: in 2018, indeed, 59.9% of Retail spending came from click and collect.⁸

Moving on to the returns aspect, in general terms the rate of returned products from online orders is equal to 30%; for orders placed in store it is about 8-10%. This gap is particularly pronounced in the apparel and footwear industry, with a returns rate of online orders reaching 50% in some cases (data from Shopify's Fashion Industry Report).

⁸ <https://fashionunited.uk/news/Retail/click-and-collect-to-grow-to-9-8-billion-pounds-by-2023/2019021141483>

Retailers can leverage on technology to address returns by introducing Augmented Reality and Internet of Things solutions, both on the website and in the app. In this way customers can virtually try on clothes and receive tailored recommendations about the most suitable sizes.

Another possible solution to the problem of returns is related to experience. This option is not intended to reduce returns rate, but rather to improve and facilitate the process by allowing customers to return products regardless of the channel items were purchased from. According to a survey of 1.000 customers from Return Magic, Shopify's return management software, 72% of customers say they are willing to spend more and buy more often if the return experience is simple.⁹

Moving with *groceries and mass distribution sector*, as results of the 2021 Census, the most used models include online purchase or reservations and in store collections – in the form of *click & collect*, *book & collect* or *drive & collect* – that recorded a significant growth, especially after Covid-19.

As for the other two remaining models, *online selling in store* has become quite frequent lately since customers can shop at the store and receive grocery at home without carrying heavy loads. An example of this model application is Al Volo, a new store in Pavia where customers can place the order in the store through some kiosks and receive groceries at home within few hours.

Another example of the same model which also include the usage of smartphone is represented by Esselunga's "Presto Spesa" service. That allows customers to scan products directly from their smartphone or device in store and proceed with the payment independently in the store kiosks.

Finally, the *in-store return* is relatively widespread especially for non-food products.

Focusing on the *electronics sector*, the small sample considered does not cover all models listed, so some data is not significant. As a consequence, news was taken into account too. It turned out that many electronics stores such as Mediaworld and Unieuro have introduced *click & collect*, *book & collect* and *in-store return* services as part of their omnichannel strategy, which is based on full integration of sales channels.

The *furniture and home improvement industries* turns out to be quite similar, so a clear line of argument can be established. According to Census data, *drive & collect* model results to have null value for both sectors, so news

⁹ https://www.returnmagic.com/online-returns/?_ga=2.228320733.1943386455.1632753110-161408521.1632753110

data is taken into account for this aspect. From this it emerged that some retailers have recently introduced this typology of service to make it easier to return large orders without having to leave the car. Regarding the other models, the *click & collect*, *book & collect* and *in-store return* service are more frequently used.

The last specific sector in analysis is the *cosmetics* one. Considering data from the Census, the most popular models are *click&collect*, *book&collect* and *in-store return*. Integrating those data with information coming from news it emerged that also *online selling in store* model is spreading. One example is Sephora, which launched a mobile app that allows customers to collect information and shop in-store without necessarily having to speak to a sales representative. Finally *drive&collect* services are mostly never used for this type of product.

To complete the analysis, considering that "other" category includes heterogeneous sectors – as jewelry, accessories, publishing, pet stores etc.– for which it is difficult to identify a trend due to little data available, all models are included too.

8.2.3.2 Operations management

Once the key omnichannel models have been presented, it is necessary to continue with the analysis of *how to manage operations* to implement them and to ensure a smooth customer experience.

One of the 9 Omnichannel Pillars identified by 4 Bocconi University's teachers – Bettucci, D'Amato, Perego and Pozzoli – and collected in the text *Omnicanalità: assicurare continuità all'esperienza del cliente* concerns the processes of supply chain management related to preparation and delivery of orders. Indeed, the text considers essential to properly manage these two back-end processes for guaranteeing customers a transparent experience, regardless of the channel chosen for the purchase and the delivery method.

The relevance of properly managing operations is also reported in the article *A data-driven approach to adaptive synchronization of demand and supply in omni-channel Retail supply chains*. The authors Marina Meireles Pereira and Enzo Morosini Frazzon state that "*Due to the growing complexity that the operations management of omni-channel Retail supply chains faces, caused by the increasing number of involved participants and the growing service level expectations, the application of coordinated and integrated approaches is essential*".

Consequently, from an omnichannel perspective, retailers need to *review the logistics structure* and manage the processes of *inventory planning, order management and preparation, delivery to the customer and returns* in an integrated manner.

Weight	OPERATIONS MANAGEMENT	INTEGRATED =1	NOT INTEGRATED BUT INTERESTED =0,5	NOT INTEGRATED =0
1/5=0,2	Stock management			
0,2	Fulfilment structures management			
0,2	Order management			
0,2	Order preparation management			
0,2	Return Management			

Table 8.17 Operations management variables and weight

Since the current category has been divided into integrated / not integrated but interested / not integrated, a score was determined in advance for each column: 1, 0.5 and 0 respectively.

Scores assignment process – deriving from what has just been explained – is also confirmed by the fact that each Retailer, regardless of the industry, may decide to conduct its omnichannel business and manage its omnichannel operations in distinct ways due to reasons such as company size, markets served, and service level guaranteed. Therefore, since it would be inaccurate to establish a defined pattern for a specific sector, columns' weights will remain fixed, considering the integrated management of activities the better option.

Additionally, although there is some evidence coming from both scientific literature and non-scientific articles on the increasing importance of certain topics with reference to the “operations area”, rows weights will be kept fixed too regardless of the sector and equally split among the 5 areas considered, 1/5 each.

In the following paragraphs, for each topic an explanation and some evidences are reported.

Scientific literature shows the importance of integrating resources to manage both in-store and eCommerce orders. In particular, the integration of inventory systems and the shared use of warehouse spaces and safety stocks enable higher service level through inventory pooling practices, as outlined in the article *Adapting warehouse operations and design to omni-channel logistics*.

This is also confirmed in paper *Best Performance Frontiers for Buy-Online-Pickup-in Store order fulfilment*, where the authors Bart MacCarthy, Lina Zhang and Luc Muyldermans talk about “synergy effects” in the case of Retail distribution assets, such as stores, that are exploited to integrate sales channels.

An example is represented by the Belgian supermarket Colruyt, which centralize stock using the in store warehouse as a fulfillment point for both channels. The retailers affirms that sharing the inventory space and preparing online orders directly from the point of sale – making sales' staff responsible for taking over new tasks – results particularly efficient.

In addition to stock fulfilment structures management, order preparation is also more efficient if it is integrated; as noted in article *Drivers and barriers of omnichannel Retailing in China: A case study of the fashion and apparel industry*, integrating preparation and fulfilment processes significantly optimizes order delivery.

Finally with the growing diffusion of online shopping experiences and with the consequent risk of returns rates increase, reverse logistics is taking on an increasingly important role. Returns, therefore, must be controlled by optimizing their management. According to the survey Pulse of the Online Shopper by UPS, carried out in 2016 over 5000 American e-shoppers, 60% of the surveyed population prefers to return products bought online to the physical store rather than to the courier, since 70% of them – for a total of 42% on the total – makes additional purchases while visiting the store. To make available to customers a simple and cross-channel return process it is therefore essential for retailers to focus on managing the returns of the two channels in an integrated manner.

8.2.3.3 Solutions to support operations management

In order to run operations in a smoother way, many retailers rely on modern management systems that can integrate different business processes and support operations in each of the previously introduced areas: inventory, order, fulfillment structures, order preparation, and returns management. Therefore, this conclusive category assesses solutions to support operations and retailers' level of interest towards them.

Below it is reported a list of the solutions adopted by retailers:

- WMS: to coordinate the flow of products and ensure better inventory control;
- OMS: to allow a centralized management of orders from different sales channels;
- Inventory management system solutions: to optimize stock visibility among fulfillment structures;
- RFID: to track products in real time along the supply chain;
- PIM: to collect, manage and integrate product information ;
- ERP: to ensure a flow of verified, updated and accessible data from every point of the network;

- Delivery optimization system: to track and control order delivery in real time and to ensure more speed and efficiency while reducing costs.

Given the importance of each of these solutions, it is not possible to define a priori which of them is more useful for a retailer since – as for the operations management area – different sectors have different needs and therefore can adopt distinct software. Therefore, it is worth assigning an equal weight to each of the previously listed options – 1/7 – and to reason by addition: greater is the number of solutions adopted, more simplified and fluid will be the management of back-end processes. This reasoning stems from the fact that having one or few solutions clearly simplifies the management of operations, but the greatest improvement occurs if a greater number of solutions are adopted.

Once rows' score is decided, it is necessary to consider the columns which concerns the degree of interest and the implementation level of the solutions. It should be noted that a further distinction with respect to previous categories is needed. As the introduction of these types of software involves huge investments and a major change in the current way of doing business, with risks of entering discontinuity phases, retailers should be accountable for being in both a “work in progress” situation and in an “evaluation” phase, as this shows their interest and necessity to implement a particular solution while considering the possible obstacles. Consequently, since the 4 options can be considered an increasing level of development:

- if a retailer has already adopted the solution, it will take the highest grade: “yes” column weights 1;
- if a retailer has not yet adopted the solution but has already undertaken some actions to implement it, the score will be equal to 2/3 of the total weight.
- if a retailer has not yet adopted the solution but he is interested in it, the score will be equal to 1/3 of the total weight.
- To conclude, in case of no adoption the score will be 0.

To better understand the assignment of scores just explained, an example is proposed. Consider a retailer (black option in the table) operating in the fashion sector and offering click and collect services, online selling in store, purchase in store and home delivery in addition to the more traditional online purchase and home delivery. To optimize the management of back-end processes, it takes the first steps towards the adoption of a system to

optimize deliveries, that will be added to the ERP system that the company has already had for several years and to the OMS system that it is finishing to implement. The table below summarize the situation.

Weight	SOLUTION TO SUPPORT OPERATIONS MANAGEMENT	YES	EVALUATED AND WIP TO ADOPT	IN EVALUATION	NO
1/7=0.143	WMS for integrated warehouse management				X
0.143	OMS for integrated order/demand management	X	X		
0.143	Integrated inventory management systems between the different fulfillment structures				X
0.143	Delivery optimization systems		X	X	
0.143	ERP	X X			
0.143	RFID to track products in real time along the SC				X
0.143	Integrated product information management systems (PIM)				X

Table 8.18 Example of solution to support operations

The score that the Retailer obtains is: $1/7*1 + 1/7*2/3 + 1/7 *1/3 = 0.2857$.

If, instead, another Retailer in the fashion sector (blue option in the table) has already fully included ERP and OMS in its management and it is a step further in the evaluation of adopting delivery optimization systems with the first phases already in place, the situation will be the following: $1/7*1 + 1/7 *1 + 1/7 *2/3 = 0.3809$.

The very last step to conclude omnichannel models and operations' section is to combine the three categories in an overall evaluation: omnichannel models, operations management and software to support operations.

	OMNICHANNEL MODELS	OPERATIONS MANAGEMENT	SOFTWARE TO SUPPORT OPERATIONS
Clothing	0.375	0.396	0.229
Food	0.389	0.333	0.278
Furniture and home improvement	0.417	0.292	0.292
Cosmetics	0.393	0.347	0.260
Electronics	0.393	0.347	0.260
Other	0.417	0.333	0.250
High	Medium	Low	Sum of weights by row = 1

Table 8.19 Operations section's categories weight per sector (sample 25 retailers, values range 0-1)

The models can be thought as the omnichannel foundation, as they are the "front-end" side which allow customers to experience a purchase journey by switching easily between different sales channels: this

assumption is confirmed by the results obtained which – in all sectors except clothing – indicate this category as the first fundamental area.

Concurrently, as mentioned earlier, a company must adapt its processes to such a strategy. Results deriving from the survey confirm that managing operations in an integrated manner is the second cornerstone in terms of importance. The only opposing trend is represented by clothing sector for which this represents the most important area.

To conclude, the introduction of software to support operations is evaluated by all sectors less crucial than the previous two areas, except for the furniture sector in which management and technological solutions adopted assume equal importance.

For almost all industries, even if with different numerical values, the reasoning is therefore cascading: to become omnichannel it is necessary to implement models that permit it; to support the models it is necessary a good management of the operations; finally, to optimize the way in which operations are manned it is necessary to adopt suitable software.

8.2.4 Organization

Shifting to the *organization* section, two topics have been studied. First, it will be performed an examination on which among company's functions are involved in omnichannel activities. After that, an overview of the options available to retailers for managing omnichannel businesses, in terms of teams and functions' organization will be provided.

8.2.4.1 Omnichannel involvement

Considering the typologies of functions involved, thanks to evidence gathered from non-scientific literature reports and additional data, it turns out that the functions primarily involved in the implementation of an omnichannel strategy are, respectively: Retail, eCommerce, marketing, operations and digital.

The first two functions – Retail and eCommerce – should be involved as it is crucial that the management of the online and offline channels is aligned in terms of omnichannel actions implemented.

The marketing function, on the other hand, has a key role in overseeing the relationship with the customer, increasingly central in case of an omnichannel strategy. Moreover, it has significant impact in all issues related to the omnichannel shopping experience.

The function in charge of managing operations is important too since, as highlighted in the dedicated section, all the supply chain activities need to be aligned and ready to support the implementation of new omnichannel models.

Finally, the digital function plays a fundamental role. This may result as a novelty compared to traditional management, but evidence can be found in the Salesforce *State of the Connected Consumer* research report. In the fourth edition, published in 2020 – a survey conducted on 12.000 customers – it emerged that 88% of customers expect businesses to accelerate digital initiatives after the Covid-19 pandemic. Consequently, it can be affirmed that digital solutions play a fundamental role in the implementation of omnichannel, whether in case of back-end solutions for process optimization or front-end activities to meet growing customer requirements and improve the shopping experience.

To give appropriate weights to functions involved in the omnichannel program, made X the total number of functions within a company and considering 1 as maximum assignable value summing all contributions, it can be said that will be assigned an equal weight, depending on the total number of functions within the company: $1/X$.

This will allow each retailer to earn the maximum score regardless of the total number of BU their business has: it does not matter how many functions the company has but, to reach a high value, it is of fundamental importance that a good number of BUs over the total participate in omnichannel activities.

An example helps to clarify what just said.

Two companies A and B are considered: both are active in the clothing sector, but they differ in size.

- *A is a large company with more than 250 employees and an annual turnover of more than 50 million euros. There are 12 functions within the company, but not all of them are involved in omnichannel management, as it can be seen in the following table.*

Weight	FUNCTIONS	INVOLVED	NOT INVOLVED
1/12=0.083	Marketing		X
0.083	Sales	X	
0.083	IT	X	
0.083	eCommerce	X	
0.083	Retail	X	
0.083	Logistics		
0.083	Operations		X
0.083	Sourcing		X
0.083	Digital		X
0.083	Finance	X	
0.083	R&D	X	
0.083	HR		X
0.083	Accounting		X

Table 8.20 Example of functions involvement case 1

- *B is a small family business with less than 100 employees and a turnover of no more than 10 million per year. The functions are 6 in total, but the company is very innovative and focused on implementing an omnichannel strategy, so many functions are involved, as can be seen in the table.*

Weight	FUNCTIONS	INVOLVED	NOT INVOLVED
1/6=0.167	Marketing & Sales	X	
0.167	eCommerce	X	
0.167	Retail	X	
0.167	Operations		X
0.167	IT	X	
0.167	Finance		X

Table 8.21 Example of functions involvement case 2

Starting with the first case, 13 functions are present within company A; each of them will therefore obtain weight of 1/13. Considering that 6 functions are involved in omnichannel activities, the total score for company A is therefore: $6/13 = 46.15\%$

Moving to Company B, 6 functions are present; 4 out of 6 are involved in omnichannel strategy aspects, therefore the total score for company B will be $4/6 = 66.7\%$

With this allocation method, as can also be clearly seen in the example, emphasis is placed on the number of functions involved in the omnichannel process within the company with the peculiarity that the size of the company does not affect the result: potentially, even a small but very omnichannel company can achieve a greater score than a larger company with many more functions.

8.2.4.2 Omnichannel management

This section includes 4 levels of evolution in terms of organization’s structure and presence or absence of focused teams of people and functions involved in omnichannel activities. Being an incremental table (Table 8.23), the weighting system has been organized as follows.

Weight	OMNICHANNEL MANAGEMENT	YES	NO
0	Separate management for different channels		
0.5	Separate management for different channels but with coordination mechanisms such as dedicated teams		
1	Cross-functional manager with an ad hoc team for the management and coordination of the different channels		
1	Business function completely dedicated to omnichannel		

Table 8.22 Omnichannel management components

The first level to be considered is the situation of "separate management for different channels". This could be the case of retailers having already implemented a multi-channel approach to sell their products or services, but whose management is still limited to a silos attitude for each channel. Anyway, since channel management is necessary within companies even in case of totally independent touchpoints, the category must be included in the analysis. It represents the basic organizational level and doesn’t enable an omnichannel work structure within the company, the current category will get 0 points.

Most large consulting firms agree that managing different channels separately is an obstacle to the competitiveness and success of the company. McKinsey specifically notes that managing channels separately creates internal conflicts and increases their isolation, as each channel tends to optimize its performance and results. Consequently, as quoted in the article *More than digital plus traditional: A truly omnichannel customer experience*, “competition becomes even more brutal internally than with the outside world”.

“Separate management for the different channels, but with coordination mechanisms such as dedicated teams” represents a situation in which a Retailer is willing to implement some intertwined activities between channels, to facilitate collaboration, coordination and sharing of information. Coordination mechanisms – as dedicated teams but also or cross-functional teams working together only on specific projects – results to be a good starting point for both companies at the initial/middle phases of the omnichannel journey and for companies going

through functions' restructuring in order to advance to higher level of integration. Since, anyway, it is still at an embryonic level, the current category gets 0.5 points, half than the maximum.

The last two categories are analyzed concurrently.

From one side there is the case of *cross-functional manager with an ad hoc team for the management and coordination of the different channels*. In this case, companies have already gone through an omnichannel process and can be considered mature in the way of managing omnichannel businesses between touchpoints. Since for companies it is not always necessary to have a specific function fully dedicated to omnichannel – as it will be presented in the following level – this category should take a very high weight, due to the presence of an omni/cross-channel figure working seamlessly on both channels.

From the other side, the last case refers to the presence of a *business function completely dedicated to omnichannel*: even if this seems to be the best possible situation, it is still not a common case in today's businesses for three main reasons. First, as said before, not all sectors consider necessary to put in place an omnichannel function within their business and sometimes prefer the presence of an omnichannel manager with his cross-functional team; furthermore, since the establishment of an omnichannel function requires many efforts to be realized, companies many times decide not to go through this change due to high costs, long implementation timing and risk of business stops. Finally, having a single omnichannel function that provides an overview over the various channels can pose risks in terms of loss of expertise. Said that, business' efforts for developing the omnichannel function will allow the company the company to better manage the two channels in an integrated way and, consequently, should be rewarded with an high weight.

Consequently, the reasoning for weighting the last 2 categories has been the following.

- As found in non-scientific literature, especially in Deloitte report *Digital transformation through data*, cross-functional teams are proved to be one of the best solutions in terms of organizational restructuring for breaking existing silos within business functions. As confirmed also by the report *Building your omni-channel journey* by Deloitte, being able to guarantee a high level of cross-functional decision making and collaboration between functions is what most distinguishes successful omnichannel organizations. An example of this organizational approach is the case of LVMH. The French company

introduced the role of Chief Omnichannel officer, responsible for leading a team dedicated to the management of digital projects and to the integration of the two sales channels.

- Not many references can instead be found regarding the need of setting up a complete omnichannel function, but one important evidence on the topic is available in the report *Omni proofing your organization: aligning your org. chart for omnichannel success* written by Monica Gout, senior leader in Radial Inc. - previously eBay Enterprise – a global provider of omnichannel solutions. The paper highlights the evolution that an organization should follow: starting from the first step in which channels are still managed by separate teams, companies should then evolve by allowing online and offline to pursue common objectives through strict collaboration, but without introducing structural changes. As cooperation increases, then, cross-functional team members start to work so closely that it is not important anymore which divisions they were originally part of: expertise and roles become completely intertwined.

This situation consequently leads to 2 options for retailers: the possibility of realigning functions that were previously separated – eventually with stronger cross-channel mechanisms – or the possibility of going towards functions’ restructuring, to create a new omnichannel division through teams' integration: in this last phase of organization evolution, this results to be particularly effective.

Since type and the extent of integration may vary by business and considering that the final goal of “customer centricity” remains the same, the cases of “cross functional manager with ad hoc team” and “omnichannel function” should both take the same maximum value, 1. This statement can be justified considering that it is up to the specific company to understand which solution is best for them: whether to keep two distinct functions for expertise reasons or to create the omnichannel function, grouping Retail and eCommerce views and focusing on all basic and complex aspects of the omnichannel business.

To conclude the *organization* section, the combination of the two categories’ weights is needed: the first focusing on the functions that should intervene in omnichannel activities, the second regarding coordination mechanisms between them.

	FUNCTIONS INVOLVMENT	FUNCTIONS MANAGEMENT
Clothing	0,458	0,542
Food	0,63	0,37
Furniture and home improvement	0,417	0,583

Cosmetics	0,547	0,453
Electronics	0,547	0,453
Other	0,667	0,333
High	Low	Sum of weights by row = 1

Table 8.23 Organization section's categories weight per sector (sample 25 retailers, values range 0-1)

Two different perspectives arise from survey's responses:

- Food, cosmetics, electronics and other sectors' highlight the need to involve a large number of functions over the establishment of specific kinds of omnichannel management among them.
- Clothing and furniture sectors, on the opposite, retain that involving multiple functions to cover different aspects of the omnichannel business is important, but that their integrated management is fundamental to set and reach common objectives.

8.2.5 Point of sales

The last section to consider for a complete omnichannel index construction, is related to point of sales. Within this topic have been included 4 categories:

- The first one is related to the new technological solutions introduced and adopted by retailers for allowing easier, more catching, and valuable experiences both for customers and the company itself, so reasoning in terms of front-end and back-end improvements.
- A section regarding personnel activities within the physical store and how they need to be adapted in different sectors in case of omnichannel restructuring.
- Finally, two categories mainly related to point of sales modifications, respectively the way in which store spaces are supposed to change due to omnichannel strategy implementation and the introduction of new formats of physical stores both for relational and transactional purposes.

8.2.5.1 Technological solutions

An initial reasoning for the current category was done dividing the technological solutions according to the phase of customer journey in which each of them is usually used: pre-sales, sales and post sales.

From an omnichannel perspective, anyway, this didn't seem the best option to empower the purpose for using the solutions. As consequence, another classification has been adopted and they have been divided into

categories according to their final aim. In the Table 8.25 are listed all the available technological solutions and the categories they are part of.

CATEGORY	Weight	SOLUTION	YES	NO
Solutions to enable cross-channel purchase	1/15=0.066	Tablet to place online store orders (independently)		
Sales force automation solutions	0.066	Tablet to place online store orders (sales forces)		
	0.066	Clienteling technologies (devices to personnel)		
Solutions to automatize customer experience	0.066	Kiosks/totems/touchpoints to gather information in-store		
	0.066	Scan&Go systems		
	0.066	Mobile POS		
	0.066	Self-check-out system		
Solutions to enlarge POS assortments	0.066	Solutions to expand the assortment of stores (infinite shelf systems, ...)		
Solutions to gather/integrate customers information	0.066	Beacon/indoor positioning		
	0.066	Solutions to collect visitor information (in-store customer behavior monitoring systems, sensors...)		
Others (solutions to improve customer experience)	0.066	Interactive showcases and digital signage		
	0.066	Virtual fitting room & virtual mirror		
	0.066	Smart labels / smart shelves		
	0.066	Smart carts		
	0.066	Innovative payments (biometrics, new forms of payment, etc.)		

Table 8.24 Technological solutions in store

As for the omnichannel models, anyway, technological solutions can be strictly related to the sector under study, and so should be adapted considering differences among businesses: in the following classifications have been excluded from each sector all the solutions that, due to business characteristics, haven't the possibility to be implemented. Those solutions that instead are not particularly common but have the potentiality to be implemented by retailers, have been considered within the sector.

To differentiate according to the sectors – similarly to what has been previously done to understand different models' adoption – the most relevant news in Retail world regarding omnichannel and digital transformation have been considered.

Except for *Virtual fitting rooms* and *virtual mirrors*, all other solutions listed are used – although with different intensity – by all sectors. Below are explained some interesting projects for each solution implemented by companies operating in different industries.

The first interesting example is Mediaworld: in its "Smart" stores, the electronics retailer allows customers to use in-store devices, independently or assisted by personnel, to place orders online by accessing the entire products catalog. The solutions, adopted by Mediaworld, not only allow cross-channel purchases but also include sales force automation solutions and endless aisle technologies to expand the store's assortment.

Another interesting sales force automation solution is represented by the clienteling service recently introduced by Missoni: salespeople can access customer information and their purchase history to create a personalized shopping experience and provide ad hoc recommendations to their customers.

Among the solutions to automatize the in-store experience there are: Toys Centre, with its screens to collect information about products in the renovated Milanese point of sales, but also Ikea, allowing customers to avoid long queues at the checkout thanks to the new scan&go service in its Shanghai concept store.

Leroy Merlin, instead, by digitizing the flyer and using artificial intelligence technologies is able to monitor customers' movements and to send to the online clients located near a store, advertising messages related to that specific point of sale.

In the world of cosmetics, MAC, in the new Hudson store, has introduced several technological solutions aimed at supporting the customer experience including digital signage.

Finally considering the most updated news, smart carts are mainly adopted in the food and large-scale distribution sector. An example is represented by Jumbo, a Dutch supermarket chain, which has tested a smart cart equipped with cameras and touch screens and uses artificial intelligence to recognize and record the added products. Nevertheless, the solution could potentially also be adapted and used by other sectors so it will be considered for all of them.

To conclude the technological solutions section, the last step is considering the one differing between sectors: as already mentioned virtual fitting rooms or virtual mirrors.

- Regarding smart mirrors and smart fitting rooms, these solutions are mainly used in sectors where customers have the necessity to try something before purchasing – clothing and cosmetics industry in particular. Indeed, while Adidas has introduced smart fitting rooms in some stores, Sephora has chosen to exploit artificial intelligence technologies to recommend suitable products to customers by analyzing

their facial images. To summarize, these solutions will be excluded from the following sectors: food and large-scale distribution, furniture and home improvement, electronics but they are included in the “other” sector due to its heterogeneity.

After having set the possible solutions for all sectors in analysis and considering “yes” and “no” columns respectively with fixed scores of 1 and 0, the index construction process for this area has been as follows:

- Each solution receives a score of $1/X$, where X varies from 14 to 15 and corresponds to the maximum number of solutions that can be potentially adopted in the sector considered. The decision of assigning the same score to all solutions derives from the fact that it can't be affirmed with certainty that within a specific sector one is evidently better than another.
- The following step is the sum of the solutions adopted: the greater the number, the more enriched and simplified the customer experience will be.

Clearly to assure an adequate of heterogeneity of solution in store, as for the indirectly managed online channel, the best solution is to adopt at least one for technological solution for each category.

An example will help clarify what has just been said. A retailer active in the electronics sector has opened a new store equipped with digital signage outside. Within the store have been installed totems where customers can collect product information and access to the entire catalogue but also tablets to place orders both independently and with the help of sales personnel. As for the payment phase, customers can do this independently at the self-service checkout. Solutions adopted by the retailer are summarized in the table below.

CATEGORY	SOLUTION	YES	NO
Solutions to enable cross-channel purchase	Tablet to place online store orders (independently)	X	
Sales force automation solutions	Tablet to place online store orders (sales forces)	X	
	Clienteling technologies (devices to personnel)		
Solutions to automatize customer experience	Kiosks/totems/touchpoints to gather information in-store	X	
	Scan&Go systems		
	Mobile POS		
	Self-check-out system	X	
Solutions to enlarge POS assortments	Solutions to expand the assortment of stores (infinite shelf systems, ...)	X	
Solutions to gather/integrate customers information	Beacon/indoor positioning		
	Solutions to collect visitor information (in-store customer behavior monitoring systems, sensors...)		

Others (solutions to improve customer experience)	Interactive showcases and digital signage	X	
	Smart labels / smart shelves		
	Innovative payments (biometrics, new forms of payment, etc.)		

Table 8.25 Example of technological solution in store

In stores, 6 out of 13 solutions have been installed, so the solutions' score is 6/13. Considering categories: in this case, no solution has been introduced to collect information about customers.

8.2.5.2 Personnel

Due to the evolution that the Retail world is experiencing, it emerged the idea of *omni-associates*. This term refers to the fact that salespeople within stores no longer deal only with the traditional physical sales activity but must enrich their jobs with new activities in an omnichannel perspective. In-store staff should bridge the gap between the physical world of the traditional store and the online world, and this can be solved carrying out different activities.

As a first step to start the section, it is necessary to underline the importance that the store associates continue to have. According to a survey entitled *Impact of Sales associates on the Shopper's Purchase Journey* conducted by the market research firm Grail Research on a sample of 600 customers and 100 employees of Retail companies, customers who engage with a sales associate are 43 percent more likely to buy a product and their transactions are worth 81 percent more.

On the other hand, 91% of the store associates confirm the importance of interaction with the customers but 94% expressed the importance of having technological solutions (i.e., clienteling apps) and enough training to be able to better assist customers during their shopping journey.

Consequently, returning to the *omni-associate* term, sales associates are increasingly involved in omnichannel activities.

First, they can take care of customers remotely: according to data collected by Shopify during Black Friday 2020, indeed, online customers who have interacted with staff in store via chat or videocall are 70% more inclined to make a purchase. The sportswear brand Vuori, for example, introduced the idea of *omni-associates* during the pandemic – when stores were closed – and continued to maintain it to this day. Catherine Pike, senior director of Retail at Vuori, explained how in every store there is at least one *omni-associate* spending part of his

time in-store assisting customer in the traditional way and the remaining part of the time working from home to support customers remotely.

Then, the store associate can also be involved in order preparation activities coming from the online channel. Considering the growth and success of omnichannel models such as click&collect, drive&collect and ship from store to quickly meet customer requests, the help of associated stores is fundamental to prepare online orders directly from the store.

Considering what has just been said, the Table 8.27 below lists all the possible activities in which store staff may be involved.

Weight	PERSONNEL	YES	NO
1/4=0.25	In charge of managing sales remotely		
0.25	In charge of preparing online orders		
0.25	In charge of supporting customers in the usage of devices to place online orders from the point-of-sale		
0.25	Use of in-store technological solutions to support omnichannel (device for cross-channel orders, clienteling apps, ...)		

Table 8.26 Personnel new activities and weights

Assigning weights of 1 and 0 respectively for “yes” and “no” columns, for all sectors, all the different “hybrid” activities involving in-store staff will get same weight equal to $1/X$, where X is the total number of activities. Since there are 4 “hybrid” activities listed each one will get 0.25.

Given that for bridging the online-offline gap all the previously mentioned personnel activities are important, it could be said that the more activity an employee performs, the better.

The two following categories refer to POS physical changes: information for building complete lists have been gathered through indirect methods among which literature analysis, Census 2021 and Retail and eCommerce news.

8.2.5.3 Store space changes

Weight	STORE SPACES CHANGES	YES	NO
1/4=0.25	eCommerce order preparation areas		
0.25	Pick-up point in-store		
0.25	Drive & collect areas		
0.25	Parcel locker		

Table 8.27 Store space changes and weights

With reference to the previously described *personnel* section, it can be affirmed that store space changes aren't all the same:

- One of them – eCommerce order preparation areas – imply changes of store areas but also led to new omnichannel activities for staff with high-value added.
- Others, instead, – pick-up point in-store and drive and collect areas – involve store's spaces modifications or enlargement that include personnel in a partial way; in this case the shopping experience mainly involves customers rather than stores' staff, which is just a support to clients' activities.
- To conclude, introduction of areas for installation of parcel lockers, inside or outside stores, without the presence of any personnel.

Even if the changes imply different additional activities to be performed by customers or by in-store personnel, considering just the aspect of physical spaces modifications it has been chosen to assign an equal weight of 1/4 points to each one.

In this case, a distinction is not made considering the various sectors because, as seen before, all sectors have adopted at least one model that involves modification of store spaces. As a result, the scores of the 5 possible options included in the current category will be the same independently from the industry under study. Therefore, the final value is obtained by summing the weights of the rows explained above.

8.2.5.4 *New formats*

Formats category is the last to analyze within POS section and for the index conclusion.

Initial informational data related to this category are gathered from what comes out from omnichannel models, personnel new activities and store space changes: indeed, as it will be seen, introducing new types of formats many times brings modifications at different organizational and operational levels.

Considering the full list of the available formats a Retailer can decide to implement, 2 “groups” can be identified from the table.

The first is composed by hybrid store, store as pick up point, store to fulfill online orders and showroom.

As introduced before, these formats enable omnichannel strategy implementation also at a “practical level”, leading to an important involvement of operations and personnel.

Consequently, in the first three cases the shop no longer has just the basic role, but it increasingly assumes also the “warehouse function” also for online orders. In the showroom option, instead, the physical store becomes an exhibition space where customers can try or consults the products, but not exit from the shop with them in hand; therefore, the selection phase happens offline and, eventually, orders’ purchase and payment is concluded online.

The other sub-section includes shop in shop, experiential store and pop-up store. These new omnichannel formats, in contrast to the previous ones, are mainly related to customer journey aspects and have a key role in the creation of long-lasting customer experiences. Indeed, they are built especially for increasing brand awareness, to make retailers known under a renewed and different light and, often, for deepening customers-brand relationships also at an informational level. Considering this second area, retailers most of the times don’t need to implement all 3 typologies for reaching a high omnichannel level.

Considering the overall weighting criteria, 1 is the total score assignable to table rows. Therefore, assuming no differences between sectors, since potentially all formats are implementable in all of them, each of the models included in the two groups will get weights of 0.6/4 and 0.4/3 respectively. By distinctly treating the two areas, it can be noticed how the models comprised in the first group weights more than the ones included in the second, respecting what previously said about omnichannel importance at practical level and, therefore, connecting the formats’ category to personnel activities and store space changes. Furthermore, even if the situation of complete formats’ implementation would be particularly rare, this choice is done with the objective to don’t penalize retailers that – due to businesses specificities – could prefer to implement one option over another.

Weight	NEW FORMATS	YES	NO
0.6/4 = 0.15	Hybrid store		
0.15	Store as pick-up point		
0.15	Store as a point to prepare and fulfill online orders		
0.15	Showroom		
0.4/3 = 0.133	Experiential store		
0.133	Shop in shop		
0.133	Pop up store		

Table 8.28 New formats and weights

Once the different categories that make up point of sale section have been presented, the final step is to combine them. Results from the survey are reported in the Table 8.30

	IN-STORE TECHNOLOGICAL SOLUTIONS		PERSONNEL ACTIVITIES	SPACES MODIFICATION (IN/OUT)	NEW FORMATS
Clothing	0,375		0,238	0,213	0,175
Food	0,222		0,3	0,233	0,244
Furniture and home improvement	0,325		0,325	0,125	0,225
Cosmetics	0,304		0,280	0,204	0,212
Electronics	0,304		0,280	0,204	0,212
Other	0,325		0,275	0,2	0,2
High	Medium-high	Medium-low	Low	Sum of weights by row = 1	

Table 8.29 Point of sales section's categories weights per sector (sample 25 retailers, values range 0-1)

This section is the one within which greater sectors' differences are present.

It can be noticed how the usage of in-store technological solutions assumes, in almost all cases, primary importance compared to the other areas: all sectors indeed consider it as top level (clothing, cosmetics, electronics, other) or equal merit (furniture). The only exception is food sector, for which the inclusion of in-store technological solutions obtains the lowest value.

Considering personnel new omnichannel activities, 4 out of 6 sectors consider it as second cornerstone in terms of importance. Exceptions are the food sector, for which this is considered the key variable, and the furniture one, for which it assumes a value equal to the solutions.

Shifting to the two other areas analysed, it is evident how space changes and new formats categories position themselves – interchangeably, depending on the sector - in the last and penultimate place. The only exception to this is the food case, for which formats gain particular importance and it ranks second.

Considering an overall evaluation it is possible to say that, at the first two positions there are store solutions and staff activities, as these factors are the ones enabling omnichannel. Indeed, even if with different points, it is clear how all sectors value these two categories as the most important. As a direct consequence of them, there are then formats and spaces.

8.2.6 Final score

	STRATEGY & CHANNELS MANAGEMENT		DATA STRATEGY		OMNICHANNEL MODELS & OPERATIONS		ORGANIZATION		POINT OF SALES	
Clothing	0,275		0,233		0,158		0,217		0,117	
Food	0,222		0,207		0,237		0,178		0,156	
Furniture and home improvement	0,233		0,183		0,25		0,133		0,2	
Cosmetics	0,245		0,213		0,216		0,179		0,147	
Electronics	0,2451		0,213		0,216		0,179		0,147	
Other	0,25		0,217		0,25		0,15		0,133	
High	Medium-high	Medium-low	Low	Extremely low	Sum of weights by row = 1					

Table 8.30 Sections' weights per sector (sample 25 retailers, values range 0-1)

After a detailed analysis of all the sections and categories that constitute them, the conclusive step in the index construction process is combining the 5 areas to get a definitive rating and determine each company's overall omnichannel level. Results are reported in the Table 8.31.

A good starting point is the “omnichannel” definition. As already mentioned in the introductory part, this term designates a sales strategy which comprehends different channels, both online and offline, managed in an integrated manner to make the customer experience as easy and enjoyable as possible. Therefore, the availability of retailers' products in channels other than the traditional physical store is the basis of omnichannel. Indeed, the section gaining the highest weights – indicated by all sectors at first or second position – is the one related to *strategy*, including channels adoption and their management.

Complementary to this, there is the *operations management* area. The increasing spread of omnichannel models and eCommerce has changed sales processes and new business models have emerged. In this context, special attention should be paid to the integration of back-office processes such as warehouse and inventory management, which should support the emerging models. For this reason, operational management is considered by many respondents an almost equally or more important aspect as the previous one. The only exception is represented by the clothing sector, for which operations management assumes the penultimate position in sections' rating.

Another key step to offer an increasingly seamless experience which adapts to the needs of customers, is to know them thoroughly. One of the omnichannel pillars is the *data strategy*: retailers need to be able to collect data from different touchpoints inside or outside the company. However, data collection alone is not enough: to

maximize the effectiveness of sales and marketing measures, an analysis phase, in which the collected data is integrated and relevant insights are generated, is of paramount importance. This area is considered to be of average level between the previous two areas and the following ones: indeed, except for clothing sector – for which it results a little more important – and furniture one – for which it is a little less important – for all the other industries it assumes a medium value.

The implementation of an omnichannel strategy, anyhow, requires profound changes not only in the way of managing processes: *organization* and company's culture must undergo important changes too. The fundamental task is to create synergies between the various corporate functions and change the focus by putting the customer first within all company's areas. With reference to this, a 4th importance level can be overall noticed: while clothing and furniture industries value this area, respectively, at third and fifth position, all other sectors agree in putting this section at penultimate importance level.

The last area in terms of importance according to survey's responses is represented by the impacts on the *physical store*, including the development of new sales formats with consequent space changes, the introduction of new activities for employees, up to the launch of new solutions to support omnichannel. It is reasonable to assume that the reasons why scores of this last section turned out to be, overall, lower than all previous areas are, on the one hand, the fact of covering only one of the channels to be integrated – the “offline side” – and on the other one, the fact that the areas treated within it can be thought as “consequence” of other omnichannel sections previously discussed.

9. INDEX APPLICATION AND ANALYSIS

The conclusive part of the work consists in the application of the indicator presented in the previous section to provide an in-depth and structured analysis of the Omnichannel progress in Italy.

The first step is the computation of the indicator for several retailers operating in the peninsula.

To this end, a questionnaire conducted between May and June 2021 by the *Osservatorio Innovazione Digitale nel Retail (School of Management – Politecnico di Milano)* was used as a baseline to investigate how major retailers approach Omnichannel within their organization. The answers to the survey questions were elaborated and fed into the model built for the Index.

In addition, further searches were conducted to fill some missing fields. Specifically, retailers' website, mobile website, and mobile application were used to supplement information about directly managed online channels' *functionalities*. Moreover, news and information have been researched to integrate categories related to *in-store technological solutions and formats* adopted by the brands examined.

The index was calculated for a total of 51 retailers. The following table shows the *distribution by industry*: the number of retailers in different sectors clearly depends on the response rates; no other index can be calculated from scratch without survey data since it is crucial especially for the sections concerning back-end aspects.

SECTOR	NUMBER OF RETAILERS
Clothing and footwear	19
Food and large-scale distribution	18
Electronics	3
Furniture and home improvement	6
Cosmetics	3
Other	2
TOTAL	51

Table 9.1 Number of retailers per sector (sample: 51 retailers)

The companies surveyed were then searched on the AIDA platform and categorized according to their turnover and number of employees. The criteria defined by the European Commission and presented in the Table 9.2 were used as benchmarks.

COMPANY CATEGORY	STAFF HEADCOUNT	TURNOVER
Micro	< 10	≤ 2 million €
Small	< 50	≤ 10 million €
Medium	< 250	≤ 50 million €
Large	≥ 250	≥ 50 million €

Table 9.2 European Commission business size classification

The sample consists almost exclusively of medium and large enterprises (90% large enterprises, 8% medium enterprises). Only one company belongs to the small enterprises group, but it has a peculiar background and thanks to its growth rate and turnover borderline to the next group it can be compared with the others. It is also key to highlight that the value obtained by the index of this company is one of the highest within the sector.

The analysis is structured in several steps, starting at macro-level and gradually increasing in detail. Two main sections have been progressively developed:

- The first presents the results obtained from the application of the index, providing an overview of the Italian state of the art in terms of omnichannel development. Therefore, the analysis will be structured as follows:
 - I. General overview of Omnichannel maturity in Italy
 - II. Analysis of the Index's sections
 - III. Analysis of the categories composing the sections
- The second part compares instead different sectors to reveal similarities and differences. The assessments included are:
 - I. Comparison of overall indexes between different sectors
 - II. Comparison of the level of advancement of different sections among sectors
 - III. Comparison of the categories making up the sections – and their components – across different sectors (clothing and footwear vs food and large-scale distribution)

9.1 Overview of Italian Omnichannel state of the art

9.1.1 General overview of omnichannel maturity in Italy

Starting from the macro-level, the value obtained by computing the average Index, coming from the 51 retailers' individual results, is 0.509. Converted to % it means that Italian companies achieve, to date, an omnichannel level of 51% on average, without considering sectors' differences. Therefore, Italian retailers can be considered in the middle of a transition process towards greater omnichannel levels.

The results are anyway quite heterogeneous: the overall values obtained from the sample of companies considered ranges from a minimum value of 0.269 (27%) to a maximum value of 0.791 (80%). The Figure 9.1 below shows the distribution for the various ranges of values.

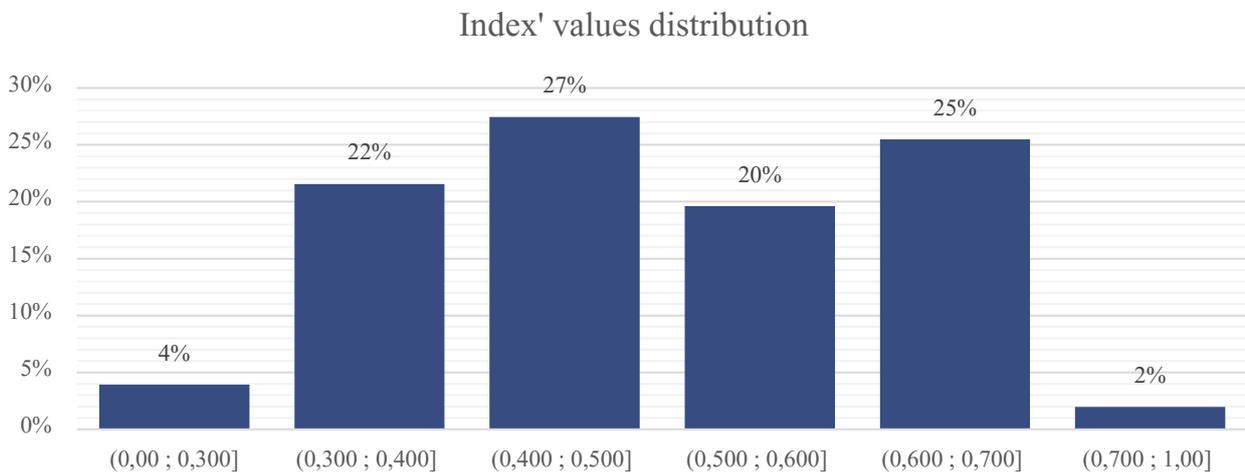


Figure 9.1 Sample distribution according to overall Index value (sample: 51 retailers, values range 0-1)

To better understand the phenomenon of Omnicanality in the Italian scenario, additional analyses have been performed by taking into account *companies' lifespan* and their *geographical distribution*.

In both cases, there was no significant correlation between the different variables. Therefore, it can be affirmed that the length of the activity period as well as the geographical position have no effect on the degree of omnichannel maturity a business can achieve. Several companies established in the last 15 years have indeed scored similar value of the Omnicanality Index reached by companies founded in the middle of the last century.

9.1.2 Analysis of the Index's sections

The outcomes just presented are quite general and do not provide a clear understanding of the overall strengths and weaknesses of companies examined. Therefore, it is interesting to study the average results of the different sections that make up the Index.

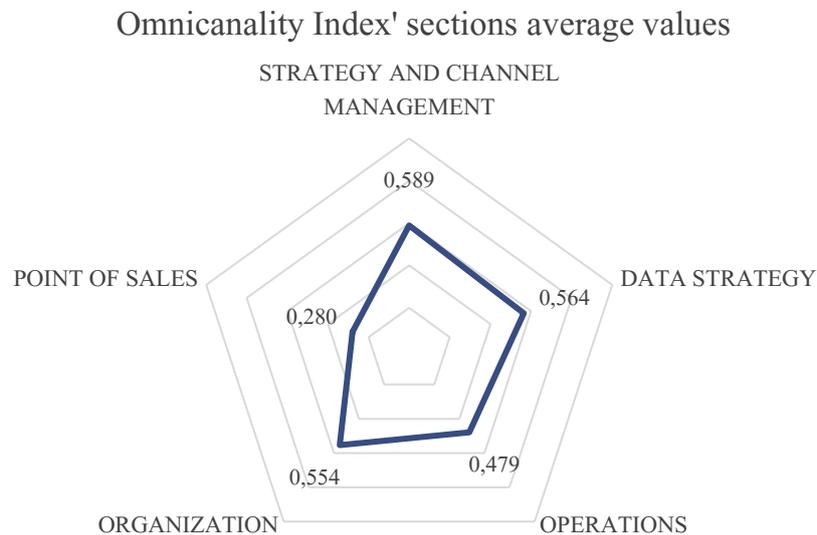


Figure 9.2 Index sections' results (sample 51 retailers , values range 0-1)

From the Figure 9.2 it is evident how *strategy & channel management*, *data strategy* and *organization* are the most advanced sections, with values greater than Index's average. Slightly lower is the result related to *operations*, while consistently lower is the omnichannel level reached by Italian companies with regard to the *point of sales* activities.

9.1.3 Analysis of the categories composing the different sections

At this point, it is interesting to understand which categories – within each section – are the most successful and on which ones instead retailers need to focus more to improve their omnichannel maturity.

Starting from the *strategy* section, from the Figure 9.3 below, it is clear that the value of *directly managed online channels* such as websites and apps is much higher than that of *indirectly managed digital channels*. This means that, on average, Italian retailers prefer to offer their products on channels that they can directly control instead of relying on third-party sites. Additionally, the 73.5% value in *channel management* category demonstrates a strong tendency to align key strategic drivers to create seamless customer experiences across different sales channels.

These results partly reflect the values obtained from the survey conducted for assigning weights during the Index development. Indeed, as for manned channels, most retailers prioritized direct ones with respect to the indirect channels.

On the other hand, a discrepancy concerns the control of direct channels compared to their management. This latter was considered less important than the direct channels' category but it results to be the area in which Italian retailers have focused their efforts and reached the highest scores.

So, in order to achieve what retailers consider to be the optimal condition reasoning “with unlimited resources”, companies should put more effort on directly managed online channels - for instance by adding new online channels or new functions to their desktop or mobile site - to achieve the same medium-high level recorded, to date, in the online and offline touchpoints management.

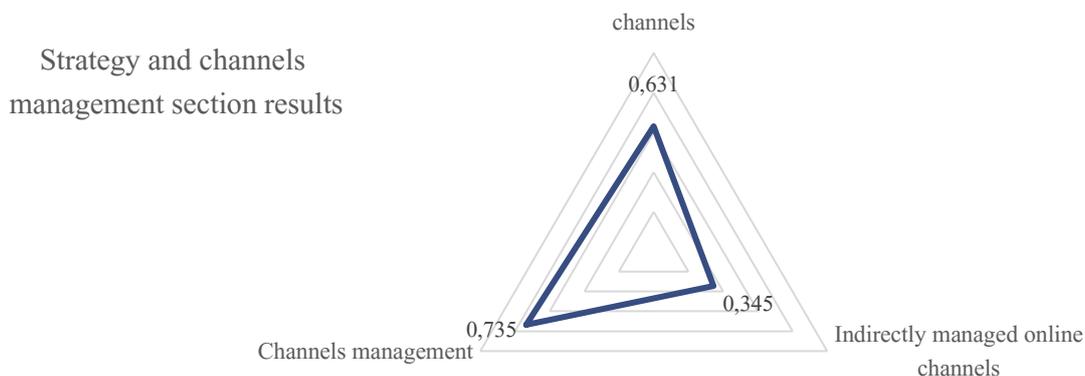


Figure 9.3 Strategy and channels management section results (sample 51 retailers, values range 0-1)

Continuing with the section on *data strategy*, there is no clear distinction between the two major components included: data collection and use for customer identification, and data collection and use for profiling purposes. However, in both cases, a difference between data collection (top and bottom of the chart 9.4) and processing (right and left of the chart 9.4) can be highlighted: on average, even though retailers do not collect large amounts of data, they are able to put in place systems to aggregate, integrate, process and use them.

In these cases, the values show an opposite trend compared to the first survey performed. Retailers consider data collection more important, but results report that the categories in which Italian companies are most advanced are those concerning their processing.

In addition, the collection and use of data for profiling activities is highly widespread, while companies tend to consider the use of data to identify customers as a priority.

In the first case, this discrepancy can be justified by the fact that, to develop step by step an efficient and effective omnichannel strategy, the collection of data should be considered as a priority in order to then be able to process them in an orderly manner.

Likewise, most merchants regard identification and retention – in terms of data usage – as two successive steps: indeed, once the first has been achieved, the second is more easily obtainable and less effort is required.

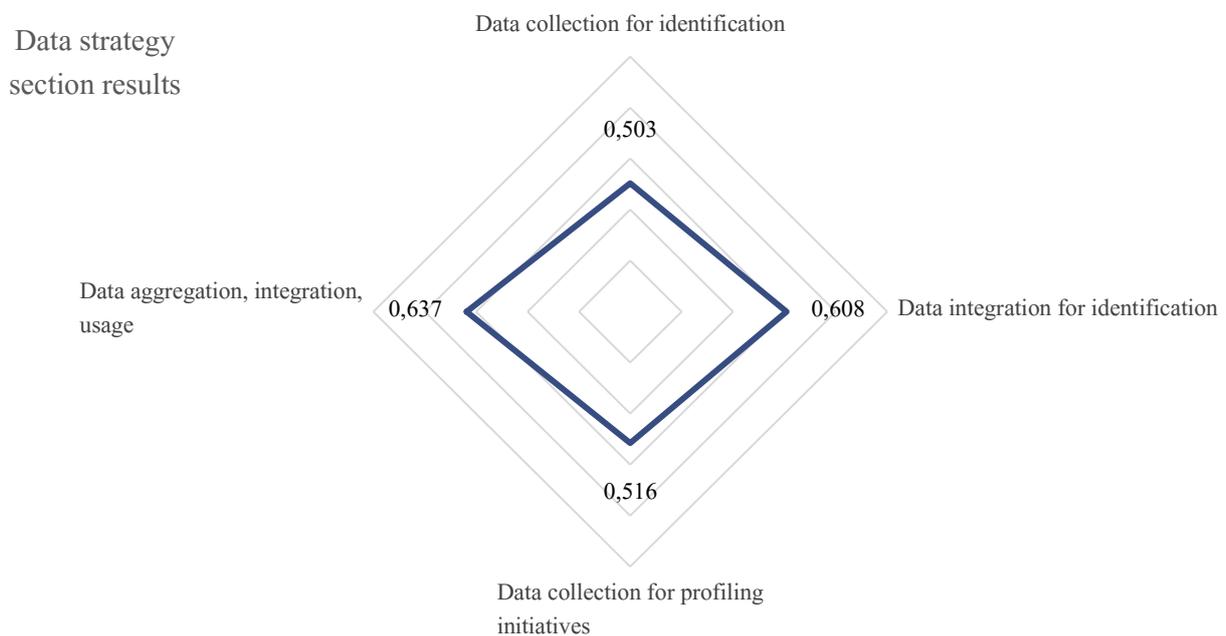


Figure 9.4 Data strategy section results (sample 51 retailers, values range 0-1)

The third section about *operations* is mostly related to back-end aspects. An intermediate level, but lower than the average of the index, is reached by *omnichannel models* used to guarantee a fluid customer experience. As for the *management of operations*, although Italian brands overall apply many *solutions to support* such activities, their management is still in the early stages of integration.

The results achieved in this section do not reflect retailers' priorities to put omnichannel models first, followed by an integrated operations management and, ultimately, the usage of solutions to support operations. The values obtained indicate indeed a higher level of development in categories that were considered less relevant.

Thinking about what was considered a priority by retailers in the first survey, it makes sense to assume that omnichannel models are top priority because, as a front-end aspect, they directly involve customers and influence their shopping experience.

On the other hand, considering the back-end aspects, the management of operations was considered a priority since the adoption of technological solutions was mainly intended as a means to facilitate such integration.

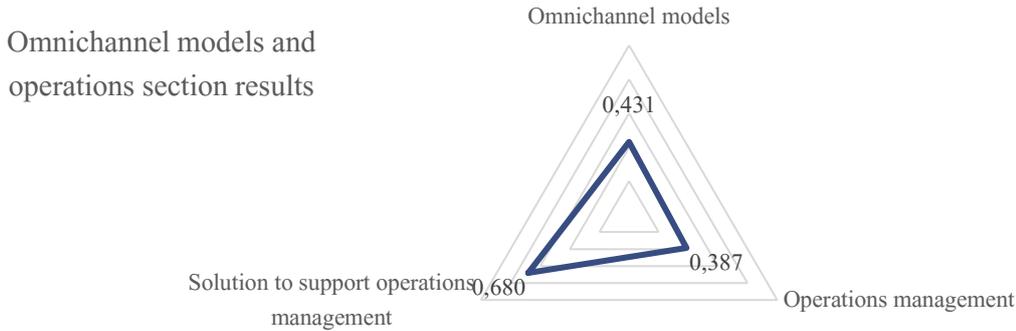


Figure 9.5 Omnichannel models and operations section results (sample 51 retailers, values range 0-1)

The analysis of the categories that make up the *organization* section do not give significant insights: indeed, there is not one category that clearly predominates. On average, brands register satisfying indexes' results on the *involvement* of several business functions for developing a successful omnichannel strategy, as well as on the establishment of *coordination mechanisms* between them.

Anyway, the actual results achieved by Italian retailers faithfully reflect the results obtained from the first survey. The involvement of different functions in the management of the renewed business, which represents the category where Italian companies are slightly more mature, is emphasized as a key factor by the majority of the retailers surveyed.

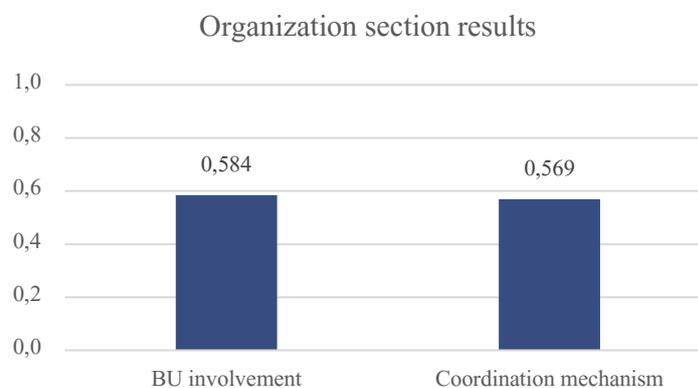


Figure 9.6 Organization section results (sample 51 retailers, values range 0-1)

As mentioned before, the last section related to the *point of sale* is the least developed, as well as the most various in terms of categories included. In particular, the area in which retailers invest less, for economic or strategic reasons, is represented by the *technologies introduced in-store* to enable omnichannel. In contrast, the HR-related category is the most valuable one within this section, meaning that the *role of sales assistants* is ever evolving with the prospect of job enlargement to include more and more activities related to the online channel. The intermediate value in the section is assumed by the *physical changes* of the point of sale both in terms of space and format; this is connected to the medium importance assumed by omnichannel models mentioned before.

Even in this section some gaps emerge between the results obtained and the declared priorities for the different categories. Although retailers consider the use of innovative technological solutions at the point of sale to be of greater relevance, this category is the least developed. A justification can be linked to the amount of investment this category implies, not taken into account by reasoning "with infinite resources" during the first survey.

Point of sales section results

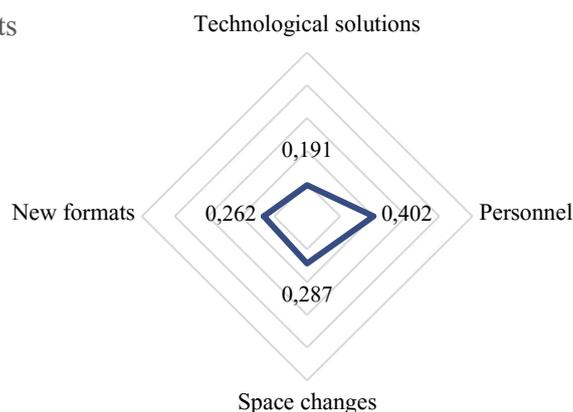


Figure 9.7 Point of sales section results (sample 51 retailers, values range 0-1)

The analysis performed so far shows which categories are the most developed and which instead still require many improvements by retailers. In addition, the parallelism between the index values and the initial survey showed that the existence of a gap between what is considered the "optimal" omnichannel strategy and the practical approach that companies adopt to date.

Once understood the omnichannel state of the art from a global perspective, the second part of the chapter is devoted to the application of the index comparing different sectors.

9.2 Omnichannel index: sectors' comparison

9.2.1 Comparison of indexes between different sectors

First, an overview of the various sectors is presented by comparing the values obtained from the averages of the calculated indexes.

Sectors average
indexes comparison

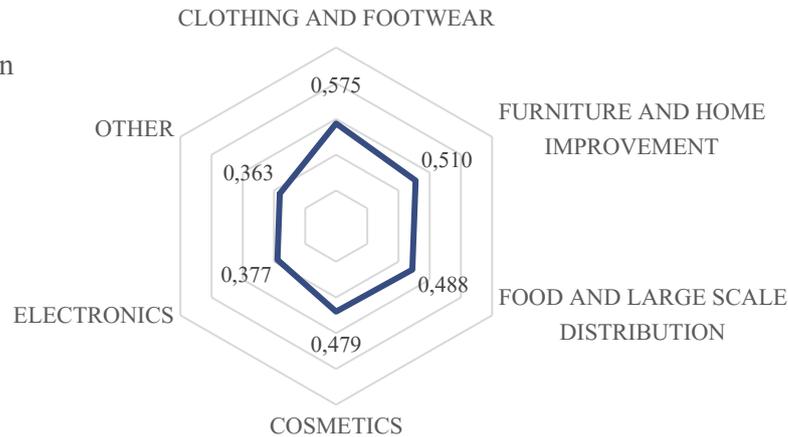


Figure 9.8 Sector overall indexes comparison (sample 51 retailers, values range 0-1)

Clothing and footwear together with *furniture and home improvement* sectors have achieved, on average, the greatest omnichannel maturity levels with percentage values of 57.5% and 51%, respectively. The *food and large-scale distribution* (48.8%) and *cosmetics* (47.9%) industries have instead reached medium results. Finally, companies operating in the *electronics* sector or belonging to “*other*” group (including publishing, jewellery, animal care, etc.) rank at the bottom with average index values of 37.7% and 36.3%, respectively.

Again, the degree of heterogeneity within each sector is quite high. As it can be observed from the Figure 9.9 below showing the maximum and minimum values achieved in each sector, the largest gap is registered in the food and large distribution industry.

Maximum and minimum values of the Indexes achieved in each sector

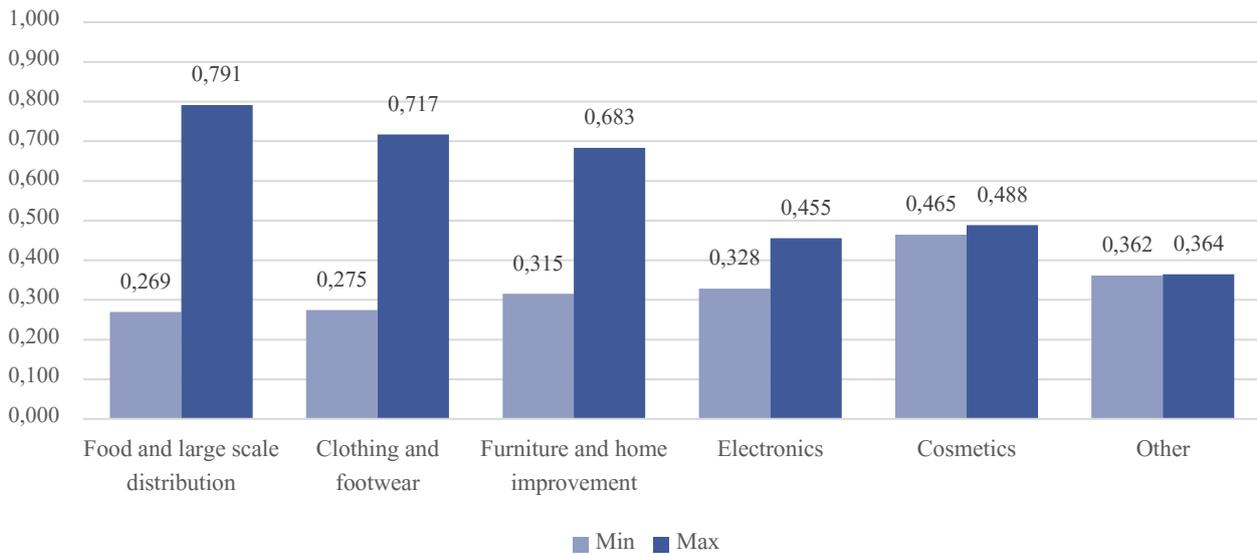


Figure 9.9 Maximum and minimum values of the Indexes achieved in each sector (sample 51 retailers, values range 0-1)

Given the samples distribution, the most reliable and therefore most meaningful data are those coming from the clothing and footwear, and food and large-scale distribution sectors. Still, even if the sample is of no particular size, the other sectors presented are not excluded from the analysis, since some interesting insights can be obtained. This choice has been done considering the importance of the specific retailers which responded to the survey and the relevance they have within their sector in the Italian territory.

9.2.2 Comparison of the levels of advancement of different sections between sectors

Going in more detail, it is interesting to compare the different sections to understand also the most and least advanced areas for each sector.

Starting from the strategy section, companies operating in the cosmetics sector achieved exceptionally high levels – almost 70% - while the lowest level remained in the electronics one. In any case, it can be observed that in all industries, values are higher than of aggregate indexes' results (light grey line) just disclosed for each single sector: this means that controlling new channels and managing them in an integrated way are areas which arouse a lot of interest from retailers, as it has also been possible to note from the general analysis discussed earlier.

Sectors comparison
considering strategy section

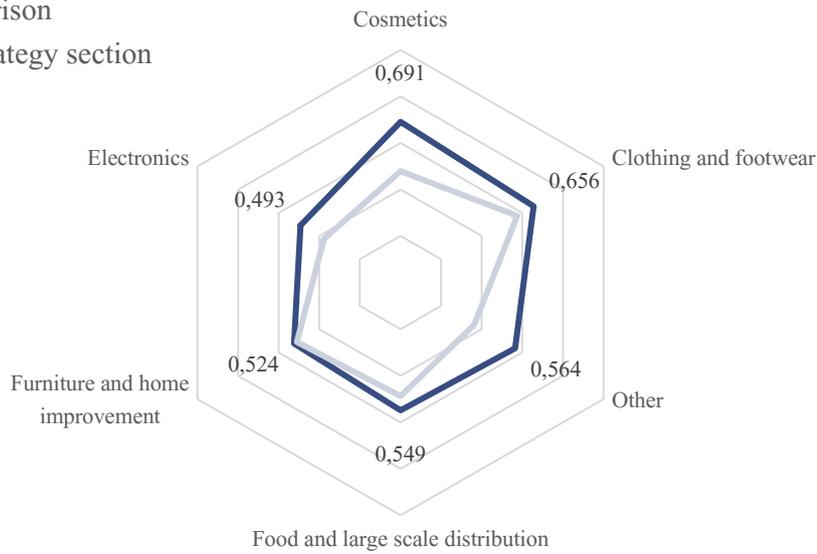


Figure 9.10 Sectors comparison considering strategy section (sample 51 retailers, values range 0-1)

As far as the *data strategy* is concerned, there are more noticeable differences compared to the previous section. Clothing and footwear sector is the most advanced in terms of data followed by the furniture and home improvement industry. As before, at a lower level of advancement there is the electronics industry. Altogether, the trend is particularly similar to the sector overall indexes, with slightly lower results for furniture and home improvement and other sector.

Sectors comparison
considering data strategy section

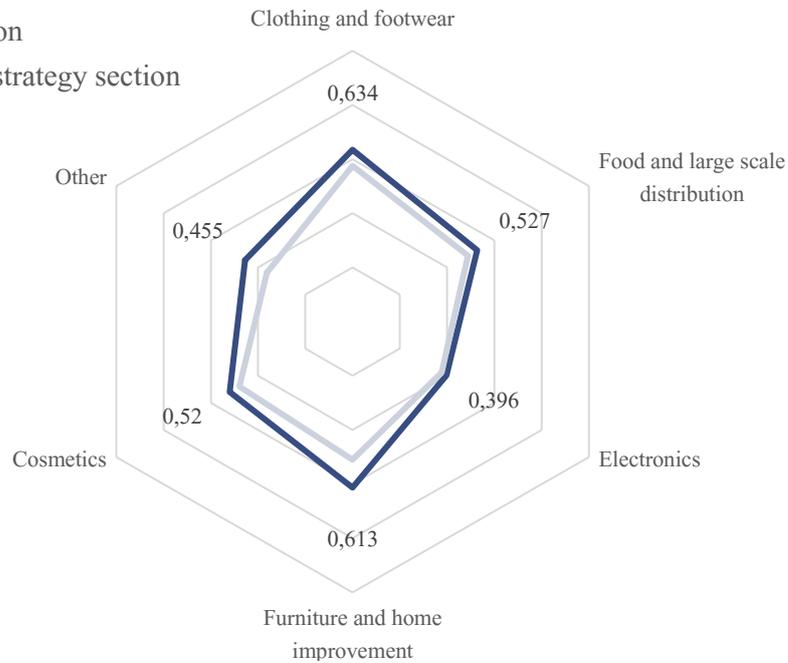


Figure 9.11 Sectors comparison considering data strategy section (sample 51 retailers, values range 0-1)

After the point of sale, *operations* is the least developed section and, therefore, the second area that particularly lowers the overall index results. Values, indeed are less than 50% for 4 out of 6 sectors; especially the "other" group presents a peculiar situation in which score is smaller than 20%. Peculiar is the case for furniture and home improvement sector, for which companies result especially able to properly manage operations related aspects.

Sectors comparison considering operations section

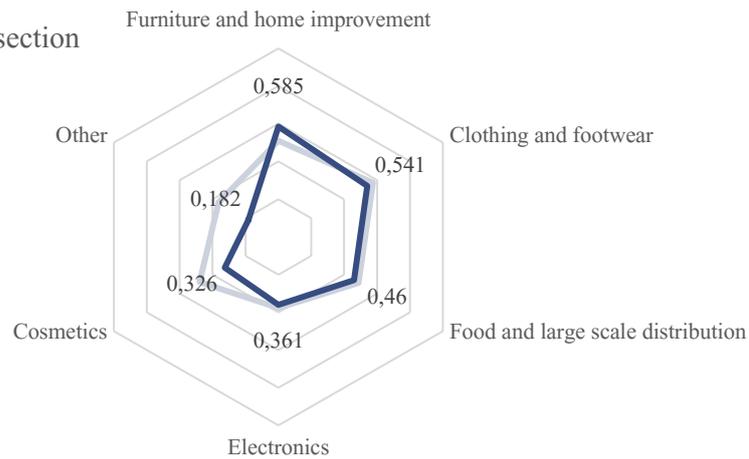


Figure 9.12 Sectors comparison considering operations section (sample 51 retailers, values range 0-1)

The shape of the radar derived from values corresponding to *organization section* is very similar to the shape derived from the overall indices. In this case, the sectors reaching the highest levels are *furniture and home improvement* and *cosmetics*; the middle level is instead reached by *clothing and footwear* and *food and large-scale distribution* and, finally, the "other" group and *electronic* sectors reach a maturity level lower than 50%.

Sectors comparison considering organization section

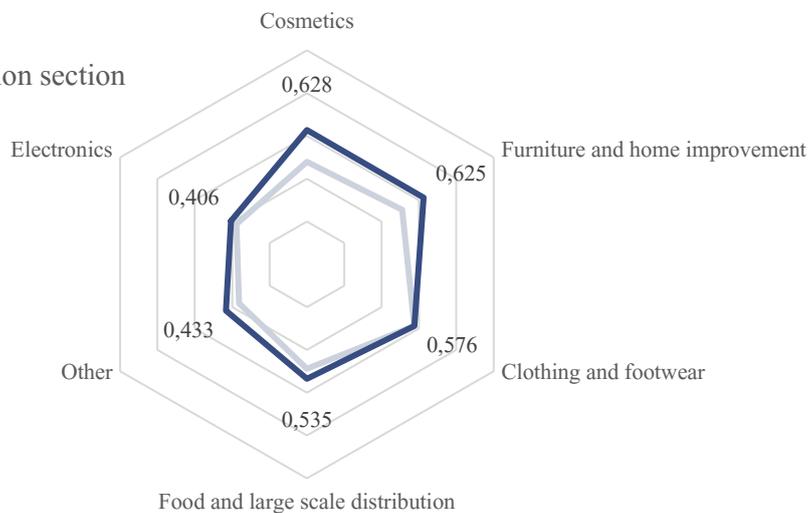


Figure 9.13 Sectors comparison considering organization section (sample 51 retailers, values range 0-1)

The last aspect to analyse concerns the *point of sales* implications. According to the graph, significant differences can be observed between industries: in particular, *cosmetics*, *electronics* and “*other*” group register values below 20%; despite an overall low level of maturity, this section is less critical for *clothing* and *food* industries; in the middle, there is instead the *furniture* industry. As introduced during operations’ area explanation, this is the section that most decreases the overall indexes’ scores.

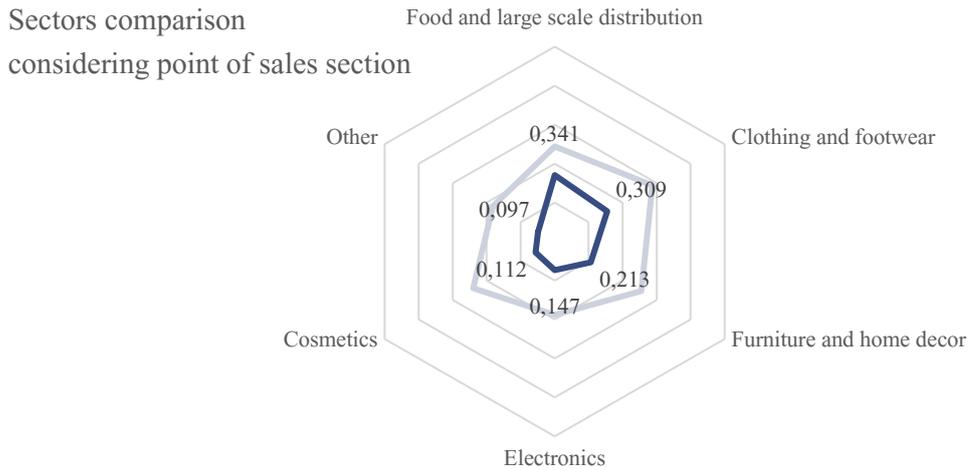


Figure 9.14 Sectors comparison considering point of sales section (sample 51 retailers, values range 0-1)

The Figure 9.15 below shows what has been said so far and highlights the key differences between the various sectors. It can be noted that in some sections, such as the *strategy*, differences are smaller than in others, such as *operations*. This may mean, for example, all the examined sectors put great effort in controlling new channels and managing them in an integrated, while the introduction of new models and the integration of the management of back-end processes that, instead, is dependent on the specific case.

Sections differences
between the various sectors



Figure 9.15 Sections differences between the various sectors (sample 51 retailers, values range 0-1)

9.2.3 Across sectors' comparison of the categories making up the sections and their components (clothing and footwear vs. food and large-scale distribution)

The final step which adds a level of detail, includes comparisons across industries considering both the individual categories that make up the sections and their single components. In this case, only the clothing and food Retail sectors will be analysed, considering the significant sample of data collected.

As the two industries have different levels of omnichannel maturity – 0.560 for clothing and footwear and 0.488 for food and large-scale distribution – for ease of comparison the values of the individual categories will be presented as a percentage. The numbers disclosed below are, therefore, calculated as:

$$\frac{\text{score of each individual category}}{\text{sum of the values of all categories belonging to the section}}$$

As concerns the *strategy section*, mastering indirectly managed digital channels is the element that has reached the lowest degree of maturity for the two industries (22.4% and 21.1% for food and clothing respectively).

Looking at the other two categories, also in this case the situation is similar in both sectors, with the channel management area being more advanced than directly managed digital channels; this gap, however, results to be more pronounced in the clothing sector (44.5% and 34.4%, respectively).

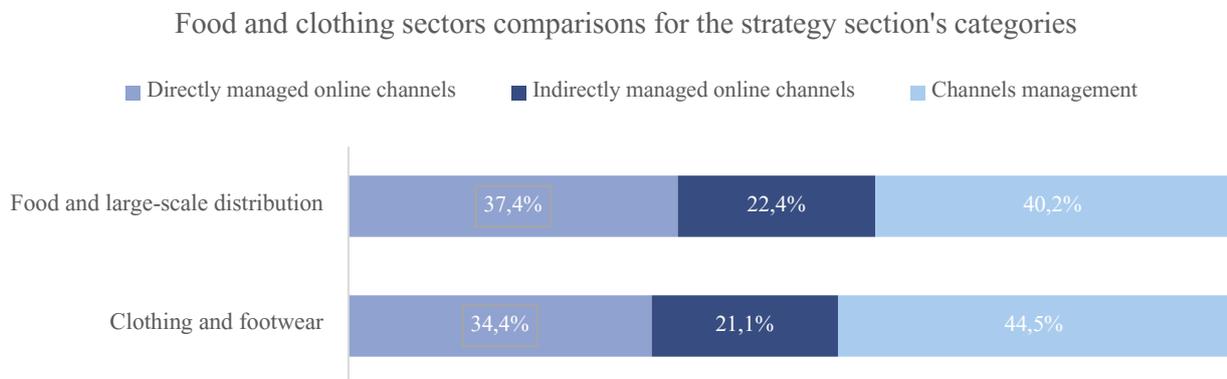


Figure 9.16 Comparison between Food and Clothing sectors as concerns the strategy section's categories (sample 37 retailers)

By further analysing these 3 categories, it is possible to extract useful information from their sub-components to understand the preferences of different sectors.

As concerns digital channels with indirect management, the marketplace is more successful among retailers operating in the clothing sector (10%) and less among those operating in food industry (6%). In contrast, the eTailers sites adoption rate is higher in the food sector (27%) and lower in the clothing one (17%); also flash sales option behaves in the same way, registering an adoption rate of 24% in the grocery sector and 12% in the clothing one.

Instead, when considering social channels, both sectors show high adoption rates, 27% for clothing and 22% for food, respectively. Specifically, the usage of social channel is much higher for transactional purposes (respectively, 18% and 15%) rather than for informational ones (4% and 12%).

Finally, modalities including one-on-one contact with sellers are recording high acceptance in the apparel industry, where personal shopper phenomenon is more and more frequent. More specifically, instant messaging channels are, on average, more used – in both sectors – than calls and video calls; anyway, in both cases relational purposes prevail over transactional ones.

Sector	Marketplace	Flash sales	eTailers	Couponing	Social	Instant messaging	Call /Videocall	Live stream shopping
Food and large scale distribution	6%	24%	27%	0%	22%	17%	5%	0%
Clothing and footwear	10%	12%	17%	0%	26%	26%	10%	0%

Table 9.3 Comparison between Food and Clothing sectors concerning channel management (sample 37 retailers)

In the category related to channel management, both apparel and food sectors prefer to align assortment and prices between channels: these two areas assume the same values in each of the two sectors, gaining respectively 26,9% and 18,6% of interest from clothing and food industries. Differently, considering the promotions policies, they are prioritized equally to the previous two categories in the clothing sector, while they are less aligned in the food one. Finally, in both channel the service is the driver which results to be less aligned among different channels.

Sector	Assortment	Pricing	Promotions	Services
Food and large-scale distribution	28,6%	28,6%	26,5%	16,3%
Clothing and footwear	26,9%	26,9%	26,9%	19,2%

Table 9.4 Comparison between Food and Clothing sectors concerning channel management (sample 37 retailers)

Going even more in detail, the table below summarize the differences considering partial or total alignment. Starting from the assortment, grocery retailers most of the times provide a partially aligned product offer, while in the clothing sector the complete alignment prevails.

On the contrary, both sectors prefer perfect price convergence. A more prominent trend is registered in the apparel sector, where the perfect alignment of prices between the two channels scores a value of 27% and no case of partially alignment is registered.

As regard promotional policies, there is no an evident preference in the food industry between alignment and partial alignment, while in the clothing industry retailers most of the times offer the same promotions in-store and online (23%).

Finally, among the four factors considered, service is the one for which prevails a partial alignment situation; anyway, both sectors but food in particular, offer some different services between the online and physical channels.

Sector	Assortment		Pricing		Promotions		Services	
	Aligned	Partially aligned	Aligned	Partially aligned	Aligned	Partially aligned	Aligned	Partially aligned
Food and large scale distribution	6%	22%	16%	12%	12%	14%	2%	14%
Clothing and footwear	15%	12%	27%	0%	23%	4%	8%	12%

Table 9.5 Comparison between Food and Clothing sectors concerning channel management and focusing on partial or total alignment (sample 37 retailers)

As for *data strategy*, from the chart below, is evident that both industries are more advanced in data management than collection. It is also important to note that the food sector has reached a higher maturity in terms of data integration for customer identification purposes, while the clothing and footwear sector has placed greater emphasis on data processing for marketing and profiling purposes.

Food and clothing sectors comparisons for the data strategy section's categories

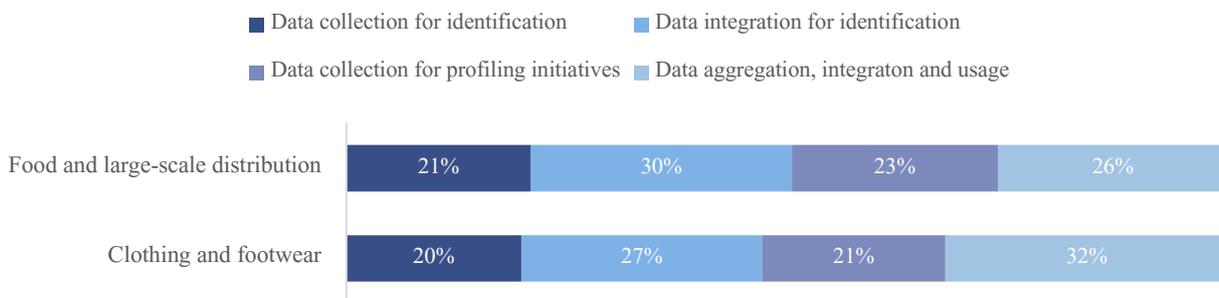


Figure 9.17 Comparison between Food and Clothing sectors as concerns the data strategy section's categories (sample 37 retailers)

Moving on to the third section, both industries are well developed in terms of adoption of solutions to support back-end processes. Furthermore, on average terms, the food sector has adopted a larger number of omnichannel models than the clothing sector, that has instead reached an overall greater level of maturity for what regards the integrated *operations* management.

Food and clothing sectors comparison for the operations section's categories

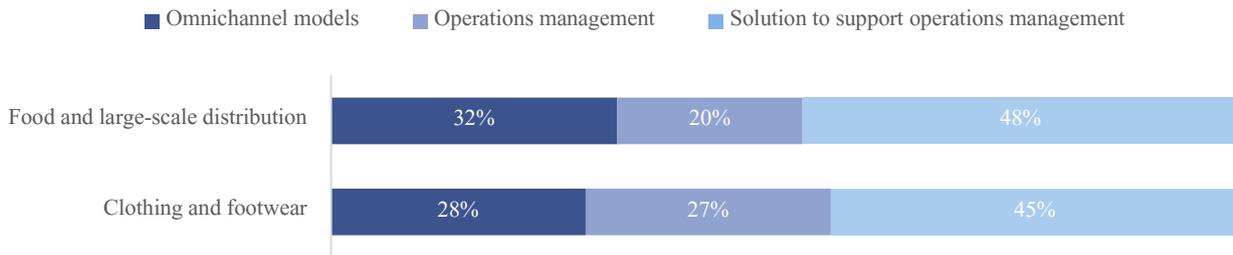


Figure 9.18 Comparison between Food and Clothing sectors as concerns the operations section's categories (sample 37 retailers)

A more detailed analysis of omnichannel models reveals some discrepancies between the various industries.

Click&collect is the omnichannel model most widely adopted within clothing and footwear industry while few retailers allow customers to order online and pay at the point of sale at pick-up; finally, none of them offer the drive and collect service.

Also in the food industry, the click and collect is the predominant model but in this case also book and collect and drive and collect models are quite common.

Finally, as predicted by the Census, the possibility to return products purchased online to the point of sale is mostly provided by retailers operating in the fashion industry, while few grocery retailers include this service; specifically, the model registered a score of 22% and 8% for clothing and food sector respectively.

Sector	In store purchase home delivey	Click& collect	Book& collect	Drive&co llect	Online selling in store	In store return
Food	24%	25%	14%	14%	16%	8%
Clothing	24%	30%	2%	0%	22%	22%

Table 9.6 Comparison between Food and Clothing sectors concerning omnichannel models

Regarding the management of back-end processes, although the food sector is less advanced than the clothing one, some interesting trends can be noticed.

Sector	Stock management	Order management	Fulfilment structure management	Order preparation management	Return management
Food	22%	23%	17%	19%	19%
Clothing	30%	20%	18%	11%	21%

Table 9.7 Comparison between Food and Clothing sectors concerning operations management

The area where fashion retailers registered a higher level of maturity is the integration of inventory management, followed by order management integration. The situation is the opposite for the food and large-scale distribution sector, which is more evolved in order management integration, followed by stock management. Considering the other three variables, return management integration reaches a greater level of maturity within the clothing industry, where return of products is more frequent; on the opposite, order preparation is managed in a more integrated manner in the food industry.

In terms of *organization*, the trends are slightly opposite: the food sector has evolved more in the introduction of cooperation mechanisms between functions, while – on average – the clothing sector involves a higher number functions in omnichannel management but it establishes slightly less robust collaboration mechanisms.

Food and clothing sectors comparison for the organization section's categories

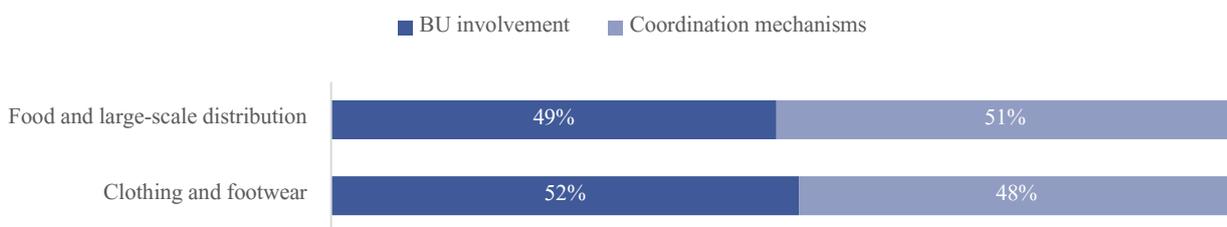


Figure 9.19 Comparison between Food and Clothing sectors as concerns the organization section's categories (sample 37 retailers)

It is clear that in both industries the functions that are mainly involved in the omnichannel are marketing, digital, eCommerce and, especially, the IT. An evident difference is related to the Retail function, which is largely involved in omnichannel management in the clothing sector, while few retailers operating in the food sector choose to include it.

Sector	Marketing	Communication	IT	Sales	Digital	Retail	eCommerce	Operations	R&D	Innovation
Food	16%	10%	17%	11%	13%	3%	13%	10%	2%	7%
Clothing	12%	7%	14%	6%	16%	12%	17%	12%	1%	4%

Table 9.8 Comparison between Food and Clothing sectors concerning function involved in omnichannel

With regard to the management of omnichannel from an organizational point of view, considering the cases which gained a higher score from the weighting process (second and third columns), it is interesting to note that among food retailers there is a preference for the introduction of a functional cross manager with an ad hoc team, while in the clothing sector there is more frequent introduction of a business unit to dedicated to omnichannel.

Sector	Coordination mechanism	Cross-functional team and manager	BU dedicated
Food	36%	45%	18%
Clothing	47%	11%	42%

Table 9.9 Comparison between Food and Clothing sectors concerning organization management

The last aspect to analyse concerns the *point of sales*. In this case, the two industries show some differences. Specifically, while for the food sector, the store has adapted to omnichannel by undergoing changes in the physical space, the clothing sector has reached the highest maturity level for what concerns the enlargement of activities in the hands of store employees.

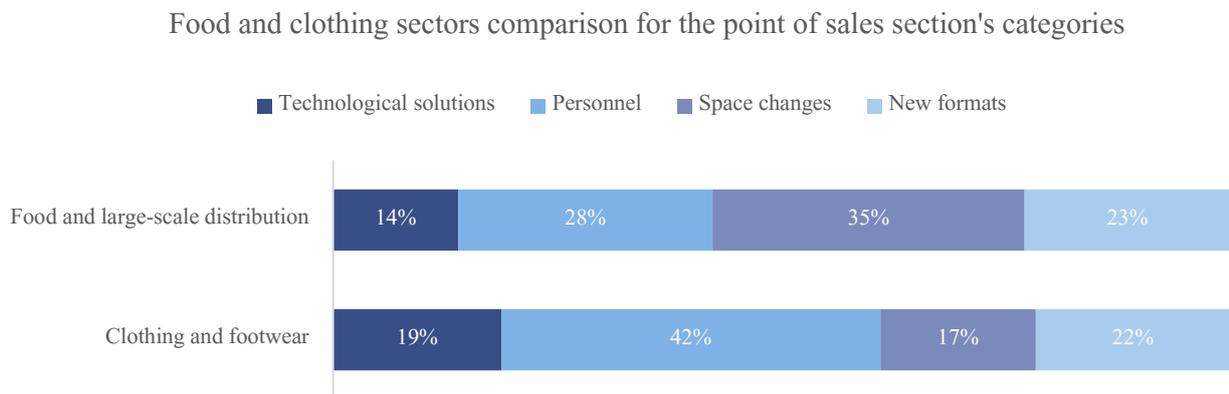


Figure 9.20 Comparison between Food and Clothing sectors as concerns the point of sales section's categories (sample 37 retailers)

Specifically, by comparing the sectors on this latter mentioned aspect, it can be noted that in the clothing sector, greater attention is paid to remote sales activities and customer care in the shop with dedicated devices; in the food industry, instead, staff is more engaged in preparing orders online. In both sectors, personnel is increasingly in charge of using devices to place cross channel orders (sales force automation).

Sector	Remote selling activities	eCommerce orders preparation	Customer assistance with devices	Sales force automation
Food	20%	47%	0%	33%
Clothing	26%	31%	8%	36%

Table 9.10 Comparison between Food and Clothing sectors concerning in store personnel activities

9.3 Final analysis

The final section of the analysis aimed to understand how the omnichannel maturity achieved by retailers affects the success and eco-fin results of the company. In particular, the first step was to perform a linear regression between the overall index and each company's revenues (performed through a linear regression model in Excel). Results indicate that there is a positive correlation between the two variables with a correlation coefficient of 0.379. The R-squared, which represents the goodness of the model, reaches a quite low value equal to 0.126 due to the limited number of observations. Anyway, since the P-value is less than 0.01 (0.0066), the result is assumed statistically significant.

The next and last step should have included a linear regression considering the index and some specific dimensionless variables such as EBITDA/sales and the main balance sheet indices (ROI, ROE, ROS, ROA). Analysing the data extracted from AIDA or calculated using the financial statements provided by the companies, it has been confirmed that 2020 was a particular year for Italian companies. The significant decrease in sales caused by Covid-19 resulted in a noticeable decrease in the values of the main balance sheet indices; therefore, the analysis over such an outstanding year would not have been significant and so it has not been performed.

10. BENEFITS

The previous chapters detail the methodology pursued for the construction of the Omni-index and its applications for conducting both general analysis and comparison between sectors. This chapter describes the benefits and implications coming from the results obtained.

Starting from the scientific contribution of the thesis work, the literature analysis carried out on three research directions – strategic variables, implementation, and implications – led to the building of the most complete framework possible for omnichannel analysis. This triggered the identification of key gaps, thus laying the foundations for the next empirical section. In other words, the scarcity of comprehensive indicators that allow businesses and researchers to study omnichannel phenomena quantitatively and exhaustively has led to the construction of the Omnicanality Index and to its subsequent application. The proposed metric permits, therefore, to assess the level of omnichannel maturity achieved by each retailer, allowing also to make comparisons both with the average level of the Italian scenario or with the level of competitors operating in a given sector.

Consequently, the advantage of the model is twofold as it applies both to retailers' needs – the demand side – as well as to research objectives:

- Starting with the demand, retailers can use this metric to map their omnichannel status and understand how they are positioning in the market. In addition, an analysis of the results considering the different sections that make up the index allows them to understand in which areas they are least developed and, therefore, to guide their future investments.
- At a more academic and research level, this indicator permits to map the state of the art of omnichannel in Italy, considering both front-end and back-end variables. In other words, it provides as a starting point a 360-degree map of phenomenon, which then, applied over the long term, will enable to develop significant analysis and trends.

11. LIMITATIONS AND FURTHER RESEARCH

After demonstrating the benefits, this chapter focuses on the main limitations characterizing the model and on further research that can be conducted to enrich and deepen the work.

The main limitations are associated with index construction itself.

First, to select the variables to be included, 54 articles from the scientific literature, 27 non-scientific articles, suggestions from Retail news, and other empirical evidence emerged from the collaboration with *Osservatorio Innovazione Digitale nel Retail* and *Osservatorio eCommerce B2c (School of Management – Politecnico di Milano)* were used.

Therefore, although a considerable number of variables were included – about 120 in total, divided into 15 categories and 5 sections – it may be that not all factors likely to influence a company's omnichannel transition have been included.

Secondly, the numerical weights assigned to the various categories objectively reflect retailers' considerations collected through direct surveys. However, since it's the first time this questionnaire is proposed to retailers, the results obviously derive from a single sample of respondents - as heterogeneous as possible. Therefore, this weighting process can change as the phenomenon progresses and the number of responses collected increases.

As for the application of the index and the consequent analysis, the results are again influenced by the number of respondents to the questionnaire conducted by *Osservatorio Innovazione Digitale nel Retail (School of Management – Politecnico di Milano)*. The assessments are based on 51 calculated indicators: therefore, the trend should remain similar, but results could be subject to some changes with the variation of the sample under consideration.

This is connected to the fact that, to collect all the information needed for index compilation, it was necessary to rely on questionnaires, especially for back-end data that companies do not disclose publicly. Therefore, it is important to clarify that this approach can affect the rigor of the analysis, which results to be particularly meaningful for the clothing and food sectors - for which more data are available - and less for other industries, in which survey's respondents are few.

Given the limitations of the model, some ideas can be extrapolated for further study.

First, in an ever-changing scenario, new variables for the implementation of an omnichannel strategy may always emerge, so the model can be updated with new factors. Since the scores of the individual variables all have – most of the times – the same weight ($1/X$), they can be easily adjusted by increasing the number of factors (X).

Finally, as mentioned above, the analysis has tended to be performed on medium and large Retail enterprise, but, excluding this macro classification and the correlation between the Omnicanality index and revenues, companies' resources availability have not been studied in detail.

Therefore, in the next years, when the Covid-19 pandemic will have a lower impact in companies' profitability further and more reliable examinations can be done considering companies' revenues. Some interesting insights, indeed, can emerge by comparing the turnover or the EBITDA with the Omnichannel Index to understand if these factors are statistically related. Balance sheet metrics can also be included in the analysis to understand which ratios are most affected. In other words, these correlations could make it possible to realize when a strong evolution towards omnichannel can affect the success of a company.

12. CONCLUSIONS

This work was developed with the aim of providing a comprehensive analysis of all aspects affecting the omnichannel transformation of Retail business. The research began with the creation of an analytical framework that, in addition to providing new scientific knowledge to evaluate the phenomenon at 360-degrees, also lays the foundation for the empirical part.

The introductory part of the work presented a detailed Retail context and at the same time analysed the development and growth of the eCommerce world. The combination of these two areas has made possible to understand the evolution from single-channel to omnichannel Retail, through the integration and increased interdependence of the two sales channels. The impact of the Covid pandemic on the sector was also investigated in detail.

The Retail industry in Italy, although fragmented, is growing (+1.5% consumption in 2019), especially driven by eCommerce channels (+21% consumption in 2019). The latter trend is further emphasized by the Covid-19 pandemic, which has shifted the balance between online and offline markets, forcing the supply side to accelerate digitization and motivating consumers to a more frequent use of online channels.

In particular, the Census on Top 300 Italian retailers conducted in collaboration with *Osservatorio Innovazione Digitale nel Retail* in conjunction with *Osservatorio eCommerce B2c (School of Management – Politecnico di Milano)* allowed to analyse the growth of omnichannel among Italian retailers. In 2020, indeed, retailers are using an average of three omnichannel models to deliver a hybrid experience to shoppers, with the most popular model being click&collect, with 57% adoption.

If the first part provided insights about the importance of implementing an omnichannel business strategy, the literature analysis aids to lay the groundwork for a deeper understanding of the phenomenon.

First, the investigation has allowed understanding how it is important for retailers to have a solid back-office to dynamically integrate two channels management. Then, the process of integrating stock, order management and logistics part of the supply chain has been reviewed. In addition, the importance of introducing technological solutions to support and simplify such a process has emerged.

Secondly, the importance of front-end aspects has been emphasized, starting with changes regarding the physical point of sale, which is increasingly becoming a technology-rich space with a strong experience and inclusive components for customers, until changes related to the sales staff and their new activities.

Finally, the importance of data was understood. Since customers play an increasingly central role, it is a priority for retailers to know them completely. Gathering data to learn about consumer buying behaviours and habits allows merchants to deal with them in a personalized way, thereby increasing their loyalty.

From the scientific and empirical analysis above described, it emerged the need to introduce a metric capable of measuring the omnichannel degree of companies, able to investigate the level of maturity of the Retail sector in Italy and to get a more accurate understanding of the strengths and weaknesses of each individual organization.

The use of the information gathered in the first part – reading analysis and Census – led to the creation of an indicator to assess retailers' omnichannel maturity level. Developed in five sections, this indicator can measure various aspects affecting omnichannel development; in addition, the usage of a survey directly compiled by retailers to weight different categories, allowed to obtain an objective metric that reflects their current priorities in the different areas.

Finally, the application of the index on 51 retailers operating in Italy made it possible to perform an in-depth analysis of the phenomenon. It appears that in Italy omnichannel has reached an average growth status of 51%, although there are significant differences between industries and between the different parts that make up the index.

In conclusion, following the evolution of the omnichannel phenomenon, the index can be updated with the addition of new variables. Then, further analysis including some economic and financial indicators of the enterprise can be performed to understand their correlation with the Omnicanality Index.

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APPENDIX

Survey on retailers used for the weights calculation In the Index construction

SECTION 1: STRATEGY AND CHANNELS MANAGEMENT → The choices to be made when implementing an omnichannel strategy include the choice of channels to be manned and how to manage them.

1. Please order the following factors according to their importance

Change the order of preference (1 - the most important, 3 - the least important)

1. Adoption of directly managed online channels (own website, mobile app, ...)
2. Adoption of indirectly managed online channels (marketplace, flash sales, couponing sites ...)
3. Alignment of the main strategic drivers between the directly managed online and offline sales channels (specifically: assortment, prices, promotional policies and services).

2. How do you assess the importance of desktop website adoption compared to optimized mobile website or app?

It is asked to assign a score from 1 to 5 to the different touchpoints, considering their importance in relative terms and not in absolute terms. Consequently, if you consider a mobile site more useful than a desktop site you should highlight this by differentiating scores, although both types are considered important.

	1	2	3	4	5
Desktop					
Mobile					

3. How do you assess the relative importance of websites (web-based/mobile) or apps for relational and informational purposes, compared to the use of the same channels for transactional purposes?

It is asked to assign a score from 1 to 5 to the different touchpoints, considering their importance in relative terms and not in absolute terms. Consequently, if you consider the use of an eCommerce site more useful than an institutional site you should highlight this by differentiating scores, although both types are considered important.

	1	2	3	4	5
Institutional					
eCommerce					

SECTION 2: DATA → The second section focuses on the collection and use of data from offline and online channels.

4. Please classify the following factors according to the perceived importance for your company:

Change the order according to your preference (1. - most important, 4 - least important)

1. Collection of data (in store and online) needed to identify customers (name and surname, phone number, mail address...)
2. Integration of the collected data to obtain a single customer view between the online and offline sales channels
3. Collection of customer data (both on physical and online channels) for profiling purposes (personal and contact data, purchase history, analytics data...)
4. Processing of collected data to aggregate them (to form clusters) and/or integrate them (to have a unique customer view) and use them for sales, marketing and communication initiatives.

SECTION 3: OMNICHANNEL MODELS AND OPERATIONS → The third section focuses on operations: in particular, it is asked to evaluate the importance of implementing omnichannel models and to manage operations activities in a more or less integrated manner.

5. Please classify the following factors according to the order of importance:

Change the order according to your preference (1. - most important, 3- least important)

1. Implementation of omnichannel models to improve the customer's purchasing experience (click&collect, drive&collect...)
2. Integrated management of operations activities; in particular, reference is made to the management of orders, stocks, order fulfillment facilities, fulfillment activities and returns.
3. Adoption of one or more solutions (software) to facilitate operations management in an integrated way between different sales channels (ERP, WMS...)

SECTION 4: ORGANIZATION → The fourth section analyses the organizational aspects and aims to assess the involvement of the various corporate functions within the omnichannel strategy and the mechanisms of coordination between these functions.

6. Please classify the following factors according to their relative importance

Change the order according to your preference (1. - most important, 2 - least important)

1. Involvement of corporate functions within omnichannel management (marketing, sales, operations, R&D, ...)
2. Introduction of specific function management mechanisms; in particular, reference is made to the introduction of coordination mechanisms, to the presence of functional managers or cross teams or to the creation of a BU dedicated to omnichannel activities, etc.

SECTION 5: POINT OF SALES → The last section focuses on the point of sale. It, therefore, requires to reason on the technological solutions adopted within stores, on the changes concerning the role of the staff, on the spaces modifications deriving from the activation of an omnichannel strategy and on the implementation of new formats.

7. Please order the following factors according to perceived importance:

Change the order according to your preference (1. - most important, 4 - least important)

1. Introduction of technological solutions within the store to enable and/or improve the omnichannel customer experience
2. Changes to the role of stores' staff and enrichment of current tasks with new activities to support complementary channels
3. Changes to point of sales' internal and/or external spaces, so as to be able to support new activities in an omnichannel perspective
4. Introduction of new store formats (showroom, shop in shop, ...) and renewed types of stores to support omnichannel models (stores such as pick-up points, hybrid stores, ...)

CONCLUSIONS → To conclude, an evaluation of the relative importance of the sections analyzed so far is required.

8. Please establish a ranking considering which is the priority of the five areas above described when implementing an omnichannel strategy

Change the order according to your preference (1. - most important, 5- least important)

1. Strategy and channels management
2. Data collection and use
3. Omnichannel models and operations
4. Organisational aspects
5. Changes in the point of sale