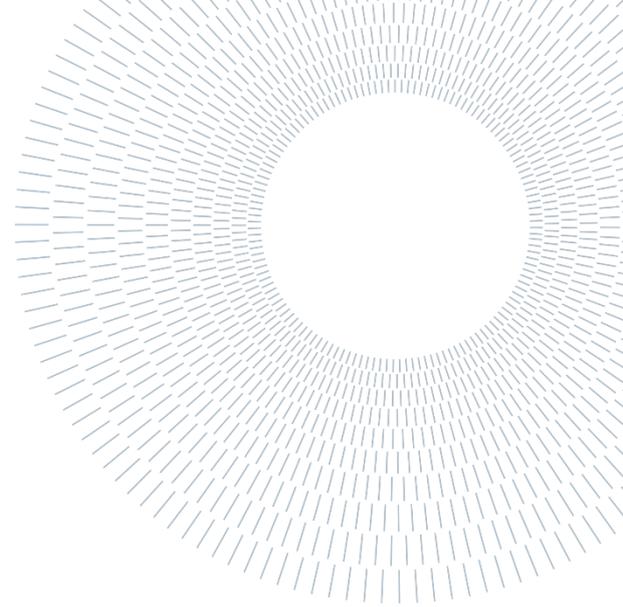




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EXECUTIVE SUMMARY OF THE THESIS

Omnichannel Maturity Framework: Italian Retail mapping and cluster analysis

TESI MAGISTRALE IN MANAGEMENT ENGINEERING

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ACADEMIC YEAR: 2021-2022

1. Introduction

The commercial activity known as retailing, defined as the sale of goods or services to final consumers, has a long history and has always been affected by ongoing modification. The rise of the Internet and the spread of progressively more advanced technology have fundamentally altered consumer requirements and behaviours over the past few decades.

This change suggests that the conventional single channel sales model is no longer relevant and that stores are no longer the only point of interaction with clients. The transition passed through diverse stages, starting from multichannel approaches in which multiple channels could be used simultaneously yet remaining distinct entities. Then, crosschannel models were developed allowing customers to complete a purchase through diverse channels. Finally, the shift moved towards omnichannel strategies which began to spread. Such models allow customers to benefit a fully satisfying shopping experience, where all

channels are highly coordinated over all stages of the customer journey.

The Covid-19 epidemic has significantly accelerated omnichannel. The balance between the various sales channels has been reviewed as a result of evolving consumer behaviour, the need to connect with socially remote customers globally, and the rising usage of eCommerce channels by both existing users and newcomers.

Businesses must adapt to the constantly changing external environment. Indeed, retailers must implement new omnichannel models, digitalize the point of sale, and address all organizational and back-end processes simultaneously in order to satisfy increasingly interconnected customers who demand a seamless and hybrid shopping experience across the various touchpoints.

Research is necessary to be able to comprehend all of this topic's most distinctive characteristics, as well as to discover the most important factors, present trends, and potential implications they may have. To be able to cope with the topic and understand as much as possible during its examination, it is vital to adopt a structured method with well-established criteria.

2. Objectives and research questions

The main purposes of this thesis are, in the first place, to address the omnichannel phenomena in the Retail industry, trying to research what are the strategic variables to correctly implement an omnichannel strategy, and the identification of a gap in the literature. Then, it was investigated the existence of a comprehensive omnichannel framework able to classify the retailers strategy and to assess the retailers' maturity level. Moreover, given the lack of the latter, it was researched how such framework could be built in order to determine systematically and comprehensively the maturity level of retailers. Then, it was investigated the current maturity level of the Italian Retail scenario and the differences among the diverse sectors. Finally, it was researched how such framework could be used to identify the main omnichannel strategies currently adopted by the Italian retailers.

The following questions were formulated in order to undertake the study in an organized manner:

1. What are the most relevant dimensions and variables that primarily characterise the implementation of an omnichannel strategy?
2. Is there currently a framework that evaluates the maturity of retailers' omnichannel strategy implementation?
3. How can the omnichannel maturity level of retailers be systematically and comprehensively examined?
4. Quantitatively, what are the current omnichannel maturity level of Italian retailers? What are the main differences between the diverse product sectors?
5. What are the main omnichannel strategies currently adopted by omnichannel retailers?

3. Methodology

In order to gain a thorough understanding of the entire global scenario and to highlight its key characteristics, the very first stage of the thesis methodological procedure (Figure 3.1) started with a detailed review of the scientific and non-scientific literature that was specifically focused on omnichannel Retail and addressed all related

topics, including the main features, trends and impacts.

The initial stage was to sift through the enormous variety of articles that were online and identify the best ones that would allow a thorough review of the subject.

Concerning the scientific literature review, two main sources were chosen for this purpose: Politecnico di Milano's online library and Scopus. In particular, from one side only peer-reviewed articles were taken into consideration in order to ensure that the study was as thorough as feasible. On the other side, only papers published in the last ten years were considered in the analysis.

With regard to the non-scientific literature review, reports from leading consulting firms and Osservatori Digital Innovation of Politecnico di Milano were studied.

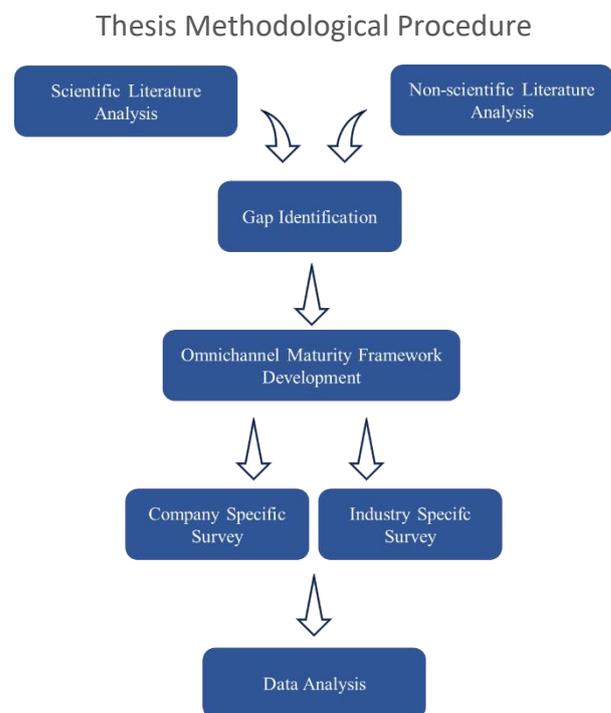


Figure 3.1: Thesis methodological procedure

Once the papers were collected (51 scientific and 21 non-scientific) they were added to two separate Excel spreadsheets where a classification framework was developed and used to properly analyse each relevant dimension. This framework was the same for both article typologies.

The Excel framework was built on 6 main sections:

- The first considered data related to paper specific information, in particular the

authors, the year of publication and the source of publication;

- Then the methodology was examined, which was divided into qualitative and quantitative portions, with a focus on the main techniques used in the papers for data collection and analysis (i.e., statistical analysis and survey for the quantitative methodology, and literature review and case study for the qualitative one);
- Furthermore, three market dimensions were considered: nationality, defining which countries were addressed in the articles; industry, classifying articles according to the sectors involved in the analysis; Retail size, addressing the size of retailers considered;
- Next, the articles were classified according to two dimensions, omnichannel models and sales channels, in order to give a first overview on omnichannel current status;
- Then, the customer purchasing stages were analysed to identify which stages were addressed by the articles;
- Lastly, 4 main topics were furtherly investigated in order to get insights about the main dimensions and drivers related to omnichannel Retail addressed in the articles. Such dimensions were: logistics and operations, data strategy and digital technologies, store, and marketing.

Then, each section was analysed in depth considering diverse layers of analysis, obtaining in total 147 classification columns in the Excel literature framework. Thanks to both the scientific and non-scientific literature reviews, the gap was found: the absence of a classification framework that could classify retailers' omnichannel strategies, quantify their level of maturity and support the implementation of new solutions.

To properly cover the gap, the Omnichannel Maturity Framework was developed and in the next section it will be addressed its construction. First, the most important dimensions identified through the literature analysis were extrapolated and readapted in order to lay the foundations of the classification framework.

Once defined all the dimensions of the framework, data collection phase was done through the

development of two distinctive surveys addressing all the sections present in the Omnichannel Maturity Framework:

- The *company specific survey*, through which it was possible to collect and classify data regarding the current implementation level of the dimensions addressed for each specific respondent;
- The *industry specific survey*, through which it was asked to respondents to evaluate the strategic importance of each addressed dimension specifically for their industry.

It was decided to address only retailers with both online and offline presence and operating in Italy. Companies were searched and selected through the AIDA database and mid / top managers were contacted through LinkedIn. Finally, around 200 executives belonging to 100 Italian retailers were contacted and were collected 38 and 23 responses specifically in the first and second survey (Table 3.1).

Finally, data gathered was elaborated and it was checked the presence of missing values. In these cases, such firms were considered partially in the analysis, taking into consideration only their macro-areas which were completely filled.

Using data obtained from the company specific survey, each variable considered inside the framework (70 in total) was classified according to the degree to which it had been adopted by each firm, taking into account 3 levels of implementation: no adoption, planned to be adopted in the future, and adopted. Additionally, a fourth intermediate level (partially adopted) was considered for the first two dimensions, omnichannel models and store, to define situations in which the solutions were only implemented in a few points of sales or regions (pilot projects).

Then, at each variable was assigned a score from 0 to 1 according to its level of adoption. Subsequently, the final scores, one per each macro-dimension, for each retailer were measured through a weighted average taking into account its single scores and the specific percentual weights of its sector, obtained through the respondents of the industry specific survey.

Once all the information and scores were obtained, data analysis was carried out to investigate, on one hand, the current maturity level of Italian Retail and the presence of industry differences and specificities, and, on the other hand, the main

Table 3.1: Surveys' population

| Surveys' populations | Retailers contacted | Responses company specific survey | Responses industry specific survey |
|--|---------------------|-----------------------------------|------------------------------------|
| Clothing and footwear, including sports equipment/outdoor & personal accessories and eyewear | 44 | 14 | 8 |
| Grocery | 18 | 8 | 4 |
| Do-it-yourself and home improvement & housewares and home furnishings | 17 | 11 | 6 |
| Beauty and personal care, including consumer healthcare | 8 | 1 | 2 |
| Consumer electronics and appliances | 6 | 3 | 1 |
| Traditional toys and games | 3 | 0 | 0 |
| Publishing | 3 | 1 | 1 |
| Pharmaceutics | 1 | 0 | 1 |

omnichannel strategies adopted by Italian retailers.

Concerning the last analysis, it was carried out through hierarchical clustering techniques using Ward's method.

In both the analyses, due to the low level of responses regarding some sectors, it was decided to analyse industry differences considering 4 classes of sectors:

- Clothing and personal accessories, including also footwear, eyewear, and sports equipment/outdoor;
- Grocery;
- Furniture and home improvement, including also do-it-yourself, housewares, and home furnishings;
- Other, including beauty, personal care and consumer healthcare, consumer electronics and appliances, publishing, and pharmaceutics.

Regarding the last class, it is important to mention that final scores of such retailers were still measured with the specific weights coming from the source sector. For instance, the final scores of a publishing retailer were measured only through the weights specific for publishing, and not an average for the class Other. To gather information about sector differences, in Other it was applied just a simple average of the final scores of the belonging sectors.

4. Research findings

In the following paragraph the five research questions indicated above are addressed. According to the methodological order shown in the previous section, the main findings of the dissertation work are detailed in depth.

RQ1. What are the most relevant dimensions and variables that primarily characterise the implementation of an omnichannel strategy?

The literature analysis performed allowed to deeply comprehend that the omnichannel phenomena is a strict combination of an interconnected high number of variables. In particular, two sections of the literature framework, already discussed in the methodology, supported significantly the identification of the most relevant variables to be considered.

First, in the omnichannel section it was highlighted the significantly high importance of mobile channels and the diverse omnichannel models.

Then, in the last section of the framework a deeper analysis was carried out considering the 4 main topics and 29 overall dimensions. In general, it appeared that marketing topics are much less discussed by academics (Chart 4.1), while data strategy & digital innovations and logistics & operations gained much more interest.

Going more in detail, concerning data strategy & digital innovations, the importance of collecting data about customers and the possibility to show the stock availability turned out to be extremely relevant. On the other hand, information related to environmental issues and shipment tracking were poorly treated by researchers.

With regard to logistics and operations, great focus was given to delivery service and operations management, while distribution setting appeared to be much less important. In particular, it is crucial to highlight the importance of integration and optimization of the operations.

Concerning the store, extremely high attention was given to innovative store spaces and slightly lower to employees and their new omnichannel activities.

Finally, regarding marketing, the alignment of strategies related to product assortment and advertising across the various channels appeared to be slightly more important than others, such as promotions and price.

Scientific Literature Overview

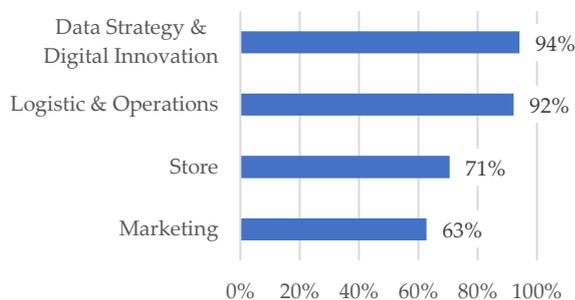


Chart 4.1: Comparison of the frequencies of the main sections addressed in the scientific literature review (base: 51 papers)

RQ2. Is there currently a framework that evaluates the maturity of retailers' omnichannel strategy implementation?

From the literature analysis, it emerged the absence of a comprehensive classification framework, containing all the relevant strategic dimensions of an omnichannel strategy. Such model may allow a detailed classification of retailers enabling them to comprehend their omnichannel maturity level and potential improvement areas. To perform such analysis, the

Excel framework was used to classify existing models and the relative topics considered.

As a result, only 6 scientific papers presented a framework aiming to classify omnichannel Retail strategies (12% of total papers addressed). Moreover, it could be seen that most of them focused on very few topics, typically focusing on 1 or 2 macro-areas at maximum.

As a result, it became clear how the gap of the current study matched the need to provide an objective and comprehensive framework of all omnichannel related aspects. Therefore, only through a comprehensive framework construction, it would be possible to classify and compare all the relevant aspects of retailers' strategies.

RQ3. How can the omnichannel maturity level of retailers be systematically and comprehensively examined?

To examine systematically and comprehensively retailers' maturity level, the Omnichannel Maturity Framework was built (Figure 4.1). It is composed by 6 macro-areas, designed selecting the most relevant dimensions identified in the literature analysis. Each macro-dimension is in turn further explored in specific sub-variables aimed at deepening and investigating all aspects involved in each area (70 variables in total).

Namely, it is divided in:

- *Omnichannel models*, addressing the level of implementation of the different

Omnichannel Maturity Framework

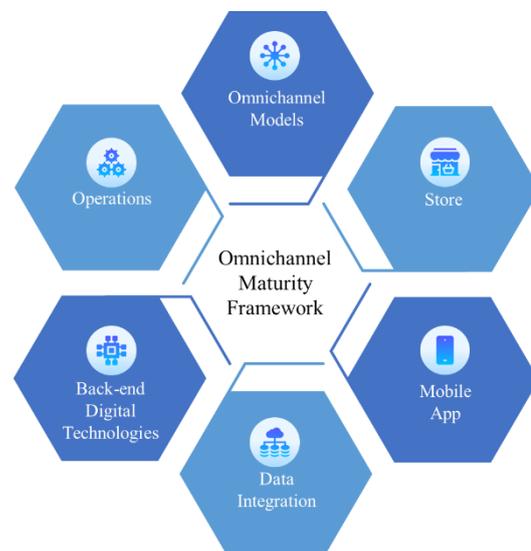


Figure 4.1: Omnichannel Maturity Framework

omnichannel models, for instance Click & Collect and Curbside pick-up;

- *Store*, referring to the strategies adopted in store to enable an omnichannel strategy, divided into 3 sub classes: spaces, role of the employees and in-store digital technologies;
- *Mobile app*, addressing the different functionalities of the retailers' mobile app along the customer journey, considering 5 diverse stages starting with the pre-purchase, going through the online purchase and the use in store, till the post-purchase and loyalty programs;
- *Data integration*, considering the level of integration of data collected among the different channels in various applications, such as segmentation and targeting or inventory planning;
- *Back-end digital technologies*, referring to the technologies adopted to enable the integration among the different activities in the channels, thus allowing the proper functioning of some of the solutions indicated in the framework, for instance CRM and RFID;
- *Operations*, analysing the level of integration across the diverse channels of the different back-end activities and processes, such as order management and return management.

Then, the maturity levels were measured through the score system and, to properly compare results of different sectors in an objective manner, the weight system was introduced, as mentioned in the methodology.

RQ4. Quantitatively, what are the current omnichannel maturity level of Italian retailers? What are the main differences between the diverse product sectors?

After having computed the different scores in each macro-areas, the current maturity level of retailers in the Italian market was analysed (Chart 4.2).

Operations resulted to be the most implemented macro-area, achieving a final score of 0.74. This highlights a higher level of maturity in this topic in Italy showing how such subject is frequently addressed and improved.

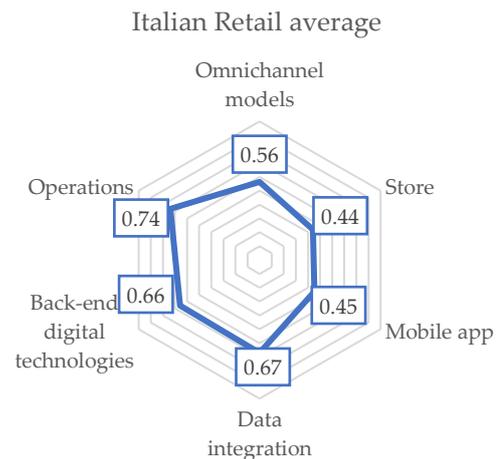


Chart 4.2: Overview of the Italian Retail average in the Omnichannel Maturity Framework

Moving on, the following most mature macro-dimensions resulted to be the data integration and the back-end digital technologies, achieving respectively an overall score of 0.67 and 0.66. As the previous, also these results are quite high and show how such dimensions are typically implemented by Italian retailers.

Then, it can be noticed from the omnichannel models' macro-dimension, that achieved a medium score equal to 0.56, that the Italian retailers are progressively adopting such innovative features. With the Click & Collect slowly becoming a standard model, an increasingly number of companies are empowering their current strategies in order to offer a seamless experience to their customers.

Lastly, it can be noticed how the mobile app and the store are the less mature macro-areas, with a final score of 0.453 and 0.440 respectively, pointing out how front-end topics seems to receive less attention.

In general, such results highlighted how the current Italian landscape appear to be much mature concerning back-end activities, while the renovation of the role of the bricks-and-mortar store or the efficient use of the mobile channel and its features seemed less significant.

Going more in detail, from Chart 4.3 it can be seen the final scores of the sectors analysed regarding all the macro-dimensions in the Omnichannel Maturity Framework.

Concerning clothing and personal accessories, such retailers obtained very high results in operations, and also back-end digital technologies and data integration. On the other hand, achieved very low scores regarding mobile app and store.

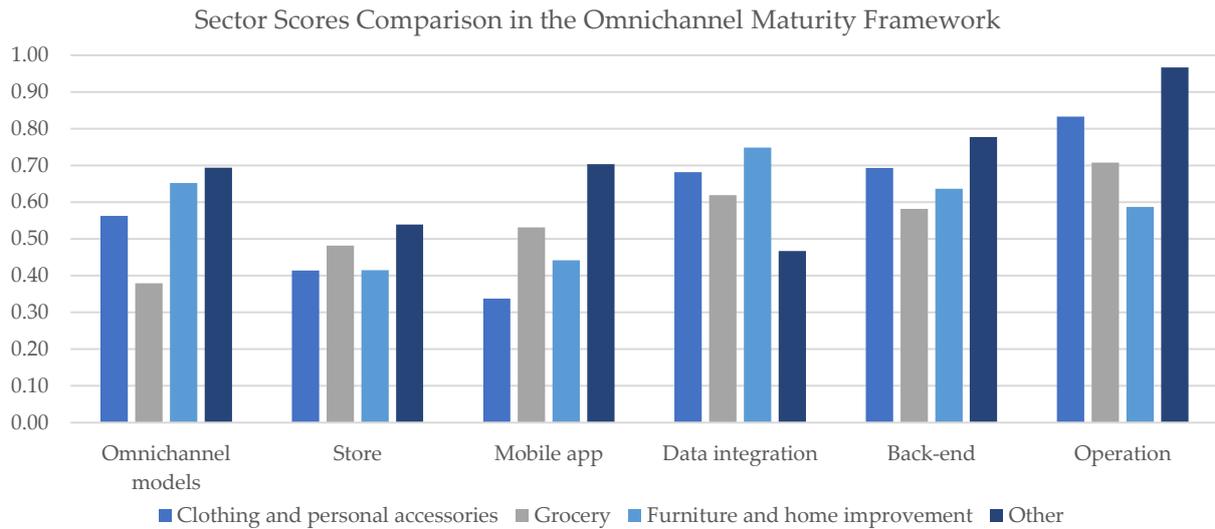


Chart 4.3: Sector comparison across all the dimensions of the Omnichannel Maturity Framework

With regard to grocery retailers, they achieved medium-high results concerning operations and data integration, while they resulted to be the less mature regarding back-end digital technologies and omnichannel models.

Moving to the furniture and home improvement sector, these companies obtain the highest score in the market concerning data integration and a medium-high score in omnichannel models. On the other hand, bad results regarding operations and store.

Finally, concerning the Other sector, such retailers resulted to be the best regarding all the dimensions except data integration, where they received the lowest evaluation compared to the other industries.

RQ5. What are the main omnichannel strategies currently adopted by omnichannel retailers?

To properly identify the main omnichannel strategies currently adopted by Italian retailers, relevant clusters were searched and analysed for each of the 6 macro-dimensions (Table 4.1).

Omnichannel models

The analysis suggested the presence of 3 relevant clusters defined as: Sales Leader, Returns Oriented, and Omnichannel Models Laggard.

The retailers belonging to Sales Leader showed the highest maturity levels in all the omnichannel models except cross channel return, highlighting a significant implementation level of direct sales models.

On the other hand, Returns Oriented showed a significantly higher score in cross channel return respect other clusters, demonstrating a great attention concerning such topic, and medium-high maturity levels in general.

Finally, the retailers belonging to Omnichannel Models Laggard obtained a very low score in all the considered dimensions, demonstrating how these businesses had not yet adopted many of the models.

Store

Moving to the store, 4 relevant clusters were found, specifically defined as: Employees Oriented, Digital Innovator, Purchase Accelerator, and Store Laggard.

Retailers belonging to Employees Oriented achieved extremely high scores regarding personnel related dimensions, such as eCommerce and cross-channel ordering support activities and activities with remote customers, highlighting a significant level of maturity towards these aspects.

Moving to Digital Innovator, such cluster achieved significant results in innovative technologies typically less adopted by the market. In particular, this group obtained a very high implementation level of innovative payments and smart labels / smart shelves, and resulted to be the best performer concerning AR/VR devices and virtual fitting room & virtual mirror.

With regard to Purchase Accelerator, the focus of the retailers' strategy appeared to be on facilitating and speed up the purchase process through ad hoc

Table 4.1 Relevant Italian Retail clusters for each macro-dimension

| Omnichannel models | Store | Mobile app |
|---|---|---|
| Sales Leader Returns Oriented Omnichannel models Laggard | Employees Oriented Digital Innovator Purchase Accelerator Store Laggard | Information Search Supporter Mobile app Leader Mobile app Laggard |
| Data integration | Back-end digital technologies | Operations |
| KPIs Oriented Data Leader Data Challenger Marketing Oriented | Customer & Planning Leader Efficiency Leader Business Intelligence Leader CRM Oriented | Operations Leader Operations Laggard |

spaces and smart technologies. In fact, such retailer showed the highest scores regarding store spaces, especially pick-up and return point in-store, kiosks/totems/touchpoints to gather information in-store, self-check-out system, beacon/indoor positioning, self-scanning and smart carts, and Smart labels / smart shelves.

Finally, the last cluster, defined as Store Laggard, contains those retailers with a medium-low maturity level in quite all the dimensions.

Mobile app

Concerning the mobile app, 3 relevant clusters were found and defined as: Information Search Supporter, Mobile App Leader, and Mobile App Laggard.

The first cluster showed good results typically in the pre-purchase phase and concerning the access to addition information regarding in-store activities. For such reasons, such retailers showed high attention to supporting information search and facilitating the purchase in the early stages, so this cluster was defined as “Information Search Supporter”.

Concerning the Mobile App Leader cluster, retailers presented extremely high values in all the dimensions considered demonstrating a significant maturity regarding features offered by the mobile application.

Finally, the retailers belonging to the Mobile App Laggard cluster showed extremely low levels of maturity in most of the dimensions. These results occurred since the majority of these companies had not implemented yet a mobile app inside their current business strategy.

Data integration

Concerning data integration, the cluster analysis returned the presence of 4 relevant clusters, named as follows: KPIs Oriented, Data Leader, Data Challenger, and Marketing Oriented.

The former achieved medium-low scores in all the dimensions except concerning the creation and monitoring of omnichannel specific KPIs which showed a significantly high maturity level, highlighting how such retailers are mainly focused on governance aspects.

With regard to the Data Leader cluster, it was defined in this way having achieved the maximum score in quite all the dimensions. For this reason, retailers belonging to this clusters are leader in integrating data in all the considered activities.

Similar to the previous, Data Challenger showed very high maturity levels in all the dimensions, except production capacity planning. Thus, such retailers can be considered as “challengers” which are on the right path to fully empower their data strategies.

Finally, companies belonging to the Marketing Oriented cluster showed the lowest maturity levels in all the dimensions except segmentation and targeting and generations of ad hoc promotions, which achieved medium-high results. It can be seen that such retailers are typically focused on marketing topics and integrated data for these purposes.

Back-end digital technologies

With regard to the back-end digital technologies, the cluster analysis suggested the presence of 4 relevant clusters, renamed as follows: Customer &

Planning Leader, Efficiency Leader, Business Intelligence Leader, and CRM Oriented.

The former achieved very high maturity levels concerning CRM, integrated information management, in-store customer monitoring, and demand, inventory, distribution planning. Due to the high attention to customer-oriented technologies, this cluster was renamed as "Customer & Planning Leader".

With regard to the Efficiency Leader cluster, it showed comparable results to the previous class with some major differences. In particular, the driving variable is WMS which received an extremely high maturity level, the highest by far among all the clusters. Moreover, it showed a very high score concerning business intelligence system and planning, achieving the highest scores in efficiency aspects compared with the others.

Moving to retailers belonging to Business Intelligence Leader, they showed low implementation levels, except business intelligence system, that achieved the maximum value. Moreover, also in-store customer monitoring achieved a high maturity level.

Finally, cluster 4 showed extremely low scores for quite all the addressed dimensions except CRM, which received a very high evaluation highlighting how such companies are giving much more relevance to the implementation of this technology.

Operations

Concerning the Operations, the cluster analysis returned 2 relevant classes, defined as: Operations Leader and Operations Laggard.

As can be seen by their names, the two clusters represented two divergent strategies, specifically high and low maturity levels. For such reason, no particular insights could be carried out through such analysis.

5. Conclusions

In conclusion, the Omnichannel Maturity Framework is a comprehensive classification model which allows the retailers to map their current omnichannel level of adoption by measuring their position according to 6 macro-areas in an objective and quantitative way. The relative scores can support companies to understand their current status and identify new

areas for improvement, also considering the general level of the market and industry differences. Finally, the identified clusters can furtherly support the management in the detection of strategies giving them guidelines on which models are currently most adopted.

Anyway, in this thesis work limitations are present, with the main ones related to data collection.

- First, the number of the answers collected turned out to be 38 from the first survey and 23 from the second one, resulting to be an overall low number. This could have an impact on the precision and reliability of the conducted studies and outcomes.
- Then, the usage of the surveys implied to rely on the veracity of the interviewees, which could submit inaccurate data overestimating their situation or, conversely, underestimating it, thus altering the results. This limitation is accentuated given that there was just one respondent per company to compile all the information coming from different topics, consequently the latter may not have been totally aware of the company's maturity level for all the variables considered.

Furthermore, there is still potential for improvement and further research. Given that the Retail industry is always changing, and businesses are increasingly integrating omnichannel strategies, this thesis work could be furtherly improved and its scope can be broadened as follows:

- First, alternative variables could be considered and added to the framework in order to furtherly improve the accuracy of the model. Moreover, the Retail world is continuously evolving, so new variables may emerge in the future and, on the other hand, some of the ones considered may not be so relevant in the future. In such cases, it will be necessary to readapt the weights for the score measurement in order to keep the maturity evaluation consistent;
- Then, concerning the data, by expanding the number of retailers involved in the analysis, the accuracy of the results would increase, starting from the evaluation of the strategic relevance of dimensions for

the diverse sectors till the final maturity levels and clusters obtained;

- Moreover, only the Italian scenario was addressed in in this paper, so a further implementation is to enlarge the scope by analysing diverse countries. Such analysis will significantly benefit the research by assessing the diverse maturity levels of diverse countries and by giving new insights about their differences;
- Finally, it might be interesting to explore also the historical data and future trends of company strategies, in addition to their current maturity level. This would enable the analysis to be expanded by providing a greater understanding of the market's transition and the strategic factors driving it.