UNIVERSIDADE CATÓLICA PORTUGUESA

How can logistics enable businesses to tackle omnichannel challenges effectively?

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Resumo

A transição da multicanalidade para a omnicanalidade no retalho alterou a forma como as empresas se relacionam com os clientes. Esta dissertação procura compreender os desafios existentes na implementação de uma estratégia omnicanal e de que forma a logística pode contribuir para a sua superação. Os objetivos específicos incluem: (i) estudar os fatores que impulsionam a adoção da abordagem omnicanal, (ii) identificar os desafios associados a este tipo de estratégia e (iii) analisar de que modo a logística pode ajudar a minimizar esses desafios.

O estudo adota uma metodologia de investigação qualitativa, com recurso a entrevistas semiestruturadas realizadas com trabalhadores de três empresas de diferentes setores. Duas das empresas são de média dimensão sendo a outra de pequena dimensão. Duas já implementaram uma abordagem omnicanal, enquanto a terceira está atualmente no processo de transição de uma estratégia multicanal para omnicanal. As três empresas diferem significativamente em termos de receitas e número de trabalhadores.

Ao longo da dissertação, será abordada a importância da visibilidade do stock em tempo real, da agilidade da logística inversa e da sincronização dos fluxos entre canais, fatores destacados pelos entrevistados como essenciais para o bom funcionamento de uma estratégia omnicanal.

Ao considerar a logística como uma componente estratégica e não uma consequência operacional da abordagem omnicanal, esta investigação contribuirá como um complemento inovador para este tipo de abordagem. Para além de ampliar o conhecimento teórico, este trabalho oferece recomendações práticas para empresas que pretendam melhorar o seu desempenho omnicanal através de uma logística moderna.

Palavras-chave: integração de canais, logística, omnicanalidade

Abstract

The shift from multichannel to omnichannel retailing has changed how businesses engage with customers. This dissertation seeks to understand the challenges that exist in the materialisation of an omnichannel strategy and how logistics can help to minimise them. Specific objectives include: (i) the study of the drivers that enhance the omnichannel approach, (ii) the challenges of this type of strategy, and (iii) how logistics can help minimise these challenges associated with the omnichannel approach.

The study follows a qualitative research method. It uses semi-structured interviews with members of three companies that operate in different sectors. Two are medium-sized enterprises and one is a small-sized enterprise. Two have already implemented an omnichannel approach, and the other is currently transitioning from a multichannel strategy to an omnichannel approach. All three companies differ significantly in terms of revenue and number of employees.

Throughout the dissertation, it will be discussed the importance of real-time inventory visibility, the agile reverse logistics, the centralised fulfilment and the synchronised cross-channel flows, which are factors that are highlighted by the interviewers as being essential and extremely important for the proper functioning of the omnichannel strategy.

By considering logistics a strategic component rather than an operational consequence of the omnichannel approach, this research shall contribute as a groundbreaking addition within this type of approach. Beyond expanding the theoretical knowledge, this work offers useful advice to businesses looking to improve omnichannel performance through modern logistics.

Keywords: channel integration, logistics, omnichannel

Index

Table of Figures

Table of Tables

Introduction

With the growing importance of e-commerce and increased connectivity, modern consumers expect seamless transitions between several points of contact, including physical stores, online platforms, applications, and social networks (Taylor et al., 2019). As the retailing industry evolves toward a seamless omnichannel retailing experience, the distinctions between physical and online will vanish, turning the world into a showroom without walls (Brynjolfsson et al., 2013), so we observe a different path that goes from a multichannel business model to an omnichannel retailing model (Verhoef et al., 2015). It is crucial to distinguish the differences between omnichannel, multichannel, and cross-channel concepts (Beck et al., 2015). Cross-channel indicates some degree of interaction between channels without reaching the complete synergy that defines omnichannel (Beck et al., 2015), whereas multichannel refers to the simple presence on several channels without any true integration between them (Beck et al., 2015; Hajdas et al., 2022). Omnichannel consists of the synergistic management of the numerous available channels and customers touchpoints, in such a way that the customer experience across channels and the performance over channels is optimised (Verhoef et al., 2015). According to Verhoef et al., (2015), this seamless integration allows companies to deliver a consistent and personalised customer experience, however the proliferation of channels has created several challenges for companies that should manage this new environment effectively and efficiently (Simone & Sabbadin, 2017). Depending on its nature, the obstacles of implementing an omnichannel strategy can be internal or external (Hajdas et al., 2022).

As highlighted by Parfenov et al. (2021), the role of logistics in the omnichannel approach remains underexplored, particularly in the context of the relationship between logistics and omnichannel approach, since it is rarely analysed.

Research on the transformation of distribution logistics channels in response to digitalisation is very limited, so the present study adopts the theoretical framework proposed by Parfenov et al. (2021) as a guiding approach, with the aim to further investigate how logistics can help businesses mitigate the omnichannel obstacles and contribute to the advancement of knowledge in this field. The authors point out that competition is moving from distribution channels to e-commerce platforms. This requires a logistics plan that should consider omnichannel distribution models, warehouse automation, and cross-border trade. By investigating how logistics could assist companies in tackling omnichannel challenges, this study fills the theoretical gap as it answers the research question. Omnichannel strategies require a logistics infrastructure that can support a unified customer experience across various channels, including physical stores, e-commerce platforms and mobile applications. According to Parfenov et al. (2021), logistics management in the digital era must adapt to the increasing complexity of channels distribution by integrating real-time tracking, automated warehousing and cross-border fulfilment solutions, so that businesses can attain logistics efficiency. These technologies help optimise the inventory management, improve last-mile delivery, streamline operations and reduce overall operational costs. All these aspects are critical for preserving a seamless customer experience (Burity, 2021).

Logistics, in its most fundamental sense, involves the management of the flow of goods from the point of origin to the final consumer (Christopher, 2016). This process covers everything, from transportation and warehousing to inventory management and order fulfilment (Christopher, 2016). In order to manage multiple sales channels, including physical stores, e-commerce, mobile commerce, and social commerce, it is essential to have a good channel integration in terms of inventory coordination, order processing, and delivery management (Hickman et al., 2020). When businesses move from traditional retail models to omnichannel approaches, they have to manage inventory and fulfil orders across a variety of physical stores, online platforms, and other sales channels. This makes logistics more complex and a

challenge (Hübner et al., 2016), as well as it enhances its quality, since it improves the consumer experience, which in turn builds customer loyalty, thus generating an increase in the business revenue (Burity, 2021) .

Research on this topic contributes to advance the knowledge in an evolving field where logistics plays a crucial role, which is often overlooked when it comes to omnichannel strategies, as well as it contributes to the understanding of how logistics might help minimise the omnichannel challenges. The centre of this work lies on the research question: "How can logistics aid enterprises in overcoming omnichannel challenges?" This question arises due to the above mentioned existing gap in the role of logistics within the omnichannel approach. It is structured to provide a comprehensive exploration of the theoretical foundations, including an overview of logistics and omnichannel concepts, as well as their intersection. To address this gap, the study will follow a methodology that involves interviews with workers from different industries, with the aim to answer the research question. The objective is to gather valuable insights that contribute to fill this gap plus provide a new perspective on the theme. By following a retailer-centric approach, and by highlighting synergistic channel management to optimise the customer experience and overall performance (Hickman et al., 2020), this appears to be the most effective method to answer this research question.

2. Literature Review

2.1 Drivers of omnichannel approach

When implementing an omnichannel approach, omnichannel drivers are the key elements that enhance this strategy and enable a seamless integration. The rise of technology, which includes in particular mobile applications, big data analytics,

and integrated IT platforms, is one of the primary drivers that influences this approach (Ye et al., 2018). The integration of e-commerce and physical channels create opportunities for synergies that allow companies to offer different services through both different channels and across different targets in terms of customers, creating therewith not only more value for them but also more customer touchpoints (Verhoef et al., 2015). Mobile apps, digital payment solutions, and real-time inventory tracking resulted in groundbreaking changes within the retailing context (Rigby, 2011) due to the fact that they offer a connected shopping experience, and further enhance both customer engagement and operational efficiency. Such technologies should be considered by retailers at the moment of designing their new strategies (Brynjolfsson et al., 2013).

Real-time inventory tracking, automated warehouses, and optimised fulfilment strategies, which enable businesses to meet customer demands efficiently, all make the efficient logistics operations a critical factor for the omnichannel approach to succeed (Simone et al., 2017) . A well-integrated supply chain boosts the speed and accuracy of order processing and delivery, in addition to a better returns management, and it ultimately improves customer satisfaction and operational efficiency (Ye et al., 2018).

In order to meet customer demands, retailers must offer their omnichannel customers a simple and enjoyable shopping experience (Verhoef et al., 2015). Customer centricity is another key element within the omnichannel approach that contributes to this end. Therefore, retailers must empower channel integration by linking the companies to their customers through all channels with the aim to offer a relevant and engaging customer experience (Homburg et al., 2017). Furthermore, keeping customers in focus means that companies need to invest in technology, creativity, and good experience. Omnichannel customers are well informed customers who use all the channels to accomplish decision-making processes for the purpose of purchasing (Lazaris et al., 2014), anytime and anywhere, and who use

simultaneously all the devices available to them. This makes their customer journey no longer linear as it happens with multichannel retailing (Brynjolfsson et al., 2013).

2.2 Challenges of omnichannel approach

Implementing an omnichannel approach presents several challenges that can be broadly categorised into internal and external obstacles, each requiring specific strategies to address effectively (Hajdas et al., 2022). Internal challenges are the obstacles that arise within the organisation, and can be classified into two categories: (i) strategic obstacles, that can be subdivided in strategy-related and employee-related factors, and (ii) operational obstacles (Hajdas et al., 2022), as seen in Table 1. Channel integration reinforces the objective pursued by the omnichannel approach, however, it is an internal challenge for this approach (Hübner, et al., 2016). Its absence may affect the organisational structure and resource allocation across channels, potentially limiting the ability to make investment decisions (Hajdas et al., 2022), as well as making it more difficult to coordinate flows and fulfil plans across different channels. According to Herhausen (2015), this channel integration needs a significant financial investment in integrative technologies, as well as the participation of knowledgeable staff, primarily from the IT department with the reengineering of the business process (Frazer et al.,2014). If channel integration does not occur smoothly, cannibalisation among channels may occur, lowering the positive perceptions of consumers towards other channels as a result of their higher expectations (Falk et al., 2007). The organisational structure and resource distribution across channels are also challenges associated with the omnichannel approach that may make it difficult to decide which investments are required to purchase or transfer resources in order to achieve channel integration (Lewis et al., 2014).

The reverse flow of the supply chain represents a critical aspect in the context of logistics, being characterised by issues in physical stores, such as: (i) the lack

of dedicated space in stores to returned items, (ii) the lack of trained staff to properly inspect and process returns, or (iii) the absence of integrated systems with central inventory databases leading to delays, inventory disparities and operational inefficiencies (Grewal et al., 2004).

External challenges that arise from factors outside the organisation's direct control can be categorised into the following: (i) product-related, (ii) customer-related, (iii) legal and competitive drivers (Hajdas et al., 2022), as seen in Table 2. In the context of logistics, product characteristics pose an important challenge due to their influence on operational complexity and channel integration. Product characteristics include one of the most significant factors among the product-related drivers. Considering the nature of the products, this parameter can create a few conditions that encumber the implementation of an omnichannel strategy. Products that require less contact and are less perishable potentially make it simpler to deploy omnichannel methods (Hajdas et al., 2022).

Table 1- Internal Challenges

Internal Challenges		
Strategic		
Challenge	**Definition**	**Author**
Misaligned Corporate Incentives	- Different alignment of strategy fundamentals	Hajdas et al., (2022)
Different Mindsets		Rouzies et al., (2005)
Strategic Misalignment	- Long-term vision is inconsistent with short-term activities.	Chopra, (2015)Lewis et al., (2014)
Lack of Vision		Ye et al., (2018)
Operational		
Data Integration	- Lack of cohesive systems, where structures and technologies are out of synchronisation - Inventory is not shared across channels.	Brynjolfsson et al., (2013)
Channel Integration	- Fulfilment processes are necessary to prevent database isolation.	Hübner et al., (2016)

High Investment Costs	- Significant financial investment in integrative technologies - Investment in IT department	Herhausen (2015) Frazer et al., (2014)
Cannibalisation of Channels	- The introduction of new sales or distribution channels reduces sales based on the existing ones, potentially leading to internal competition within the omnichannel framework	Falk et al., (2007)Montoya-Weiss et al., (2003)
Reverse Flow of the Supply Chain	- Substantial volume of returned goods from various regions, increasing the costs with the structure of the store	Grewal et al., (2004)
Organisational Structure Resource Allocation	- Difficult to decide which investments are required to purchase or transfer resources in order to accomplish channel integration	(Lewis et al., 2014)

Table 2 - External Challenges

External Challenges		
Challenge	**Definition**	**Author**
Product Characteristics	- Products that require less contact and are less perishable potentially make it simpler to deploy omnichannel methods.	Hajdas et al., (2022)
Consumer Behaviour	- Consumers' attitudes towards an omnichannel approach (the need to educate customers)	Hajdas et al., (2022)
Competitive Drivers	- Constantly innovating in order to stay ahead of the market trends and industry leaders.	Cotarelo et al., (2021) Simone et al., (2017)
Legal Drivers	- Regulations belonging to the digital world are different between markets within the legal framework - Different jurisdictions may have varying tax laws and pricing structures.	Ferrell et al (2017) Cotarelo et al., (2021) Simone et al., (2017)

3. Methodology

3.1 Data Collection

The analysis will follow the Gioia method, involving a systematic approach to qualitative research that balances the need for both conceptual discovery and rigorous theory development (Gioia et al., 2013). The Gioia method begins with the collection of qualitative data, usually through semi-structured interviews. The first phase of the analysis consists of coding the data into first-order concepts, maintaining a strong connection with the language used by the interviewees, so as to allow them to genuinely represent their reality. First-order concepts are grouped and interpreted in the light of a more abstract theoretical understanding as the analytical process progresses, revealing similarities and correlations inbetween (Gioia, 2021). As the analytical process progresses, patterns, similarities, and relationships among first-order concepts are identified, grouped, and interpreted under a more abstract theoretical view, resulting in second-order concepts that provide a conceptual and analytical perspective on data, acting as an intermediate element between empirical evidence and theoretical advancement. The consolidation of second-order concepts allows to organise them into aggregate dimensions, hence synthesising the central themes of the research. These three dimensions are often depicted in a data structure, and it is essential to highlight the connection between the empirical data and the theoretical contributions of the study (Gioia, 2021).

3.2 Instrument of Data Collection

Given the exploratory nature of the research, which seeks to answer the research question, it was key to choose a qualitative research. This type of research is especially suitable when the aim is to explore complex phenomena based on the perspectives of the individuals involved in their real context. One data collection method that can be used is conducting interviews. Interviews are a technical process in which the researcher raises questions for the sake of the investigation, and it is an asymmetrical dialogue, in which the interviewer wants to gather information, and the interviewee assumes the role of source of information (Resende, 2016). Interviews can be subdivided based on the structure level: (i) unstructured (open), (ii) semi-structured, and (iii) structured (closed). Given that the present study calls on the interviewees' opinion to comprehend the different contexts, the consequences and the actions taken to solve problems, the semi-structured interview seemed to be the right method to choose. This method allows previously defined themes to be explored with some degree of uniformity, and at the same time it gives room for interviewees to personally express their perceptions, experiences and interpretations. The interview guide was sent to each participant beforehand, so as to ensure the ability of the interviews to be conversational, targeted, and enable the examination of potentially important topics found therein (Creswell, 2011). This method is divided into six stages: (i) preparation of the interview script, (ii) contact with the participants, (iii) conducting the interview, (iv) transcribing the interview, (v) data analysis, and (vi) methodological report.

Firstly, in order to develop the interview guide, it was carried out an in-depth study on omnichannel. This was then followed by the gathering of information through semi-structured interviews involving representatives of various businesses from different industries. This method combines elements of open-ended and closed-ended questions, with the aim to clarify and collect additional and more detailed

information on a certain reported theme or subtheme. The purpose of the interview guide was to find out: (i) how each company uses the omnichannel approach to obtain a competitive advantage, (ii) what challenges posed by the omnichannel approach were encountered, and (iii) how they could be mitigated. It also sought to determine whether or not logistics can help minimise these challenges, based on the perspectives and experiences of members of three businesses from different industries with regard to the difficulties faced upon each channel. This interview relied on the addressed themes seen in Table 4.

Table 3 - Description of the interviewes

Firm	Size	Number of Employees	Revenue	Product Category	Location	Interviewee's Job Title
Firm A - Antúrios Araújo	Small	26	1,892,632€	Flowers	Vila Nova de Famalicão	CEO
Firm B - UnderBlue	Medium	65	4,827,896€	Clothing	Penafiel	Business Development Manager
Firm C - Ferrache	Medium	83	7,618,622€	Clothing	Guimarães	Head of Marketing and Business Development Manager

Table 4 - Themes and Interview Script

Themes	Question
Omnichannel Approach	- What drivers would you consider to be the most important in your strategy? - How would you describe your company's strategy in integrating multiple sales and distribution channels? - How does your company ensure consistent customer experience across different sales channels (online, offline)?
Omnichannel Challenges/Obstacles	- What are the key internal (strategic/operational) barriers the company faces? - What is the most "prominent" challenge faced by the company? - How do you address challenges of cross-border trade, such as customs regulations and delivery delays?

	- How does your company handle disruptions (e.g., pandemics, geopolitical conflicts) effectively in the supply chain?
Logistics and Supply Chain Integration	- How can you balance demand forecasting and inventory management to avoid stockouts or overstock in different channels? - What is the role of third-party logistics providers (3PL) in the company? - How do you ensure last-mile delivery efficiency while maintaining cost control? - How does your company handle inventory allocation between different channels so as to meet fluctuating customer demand? - What strategies or tools do you use to ensure seamless communication and data sharing across your supply chain partners? - How do you manage the integration of e-commerce logistics with brick-and-mortar store (with physical stores) operations to optimise fulfilment efficiency?
Reverse Logistics	- What is the main logistical challenge in processing returns and exchanges in an omnichannel context? - How do customer expectations for returns impact your reverse logistics strategy?
Technological Innovations in Logistics	- What digital tools or platforms (e.g., warehouse management systems, real-time tracking) have enhanced your logistics? - How do you evaluate the effectiveness of technologies in improving supply chain transparency and efficiency?

4. Data Analysis

By organising the interview data into distinct building blocks, the analysis is structured based on the four identified core dimensions: (i) omnichannel approach, (ii) omnichannel obstacles, (iii) logistics, and (iv) reverse logistics. According to a thematic analysis, key patterns and relationships were identified, providing the foundation to answer the research question: "How can logistics aid enterprises in overcoming omnichannel challenges?" This analysis will not only highlight common

themes and divergences across participants but also explore the strategic implications for logistics management in omnichannel contexts.

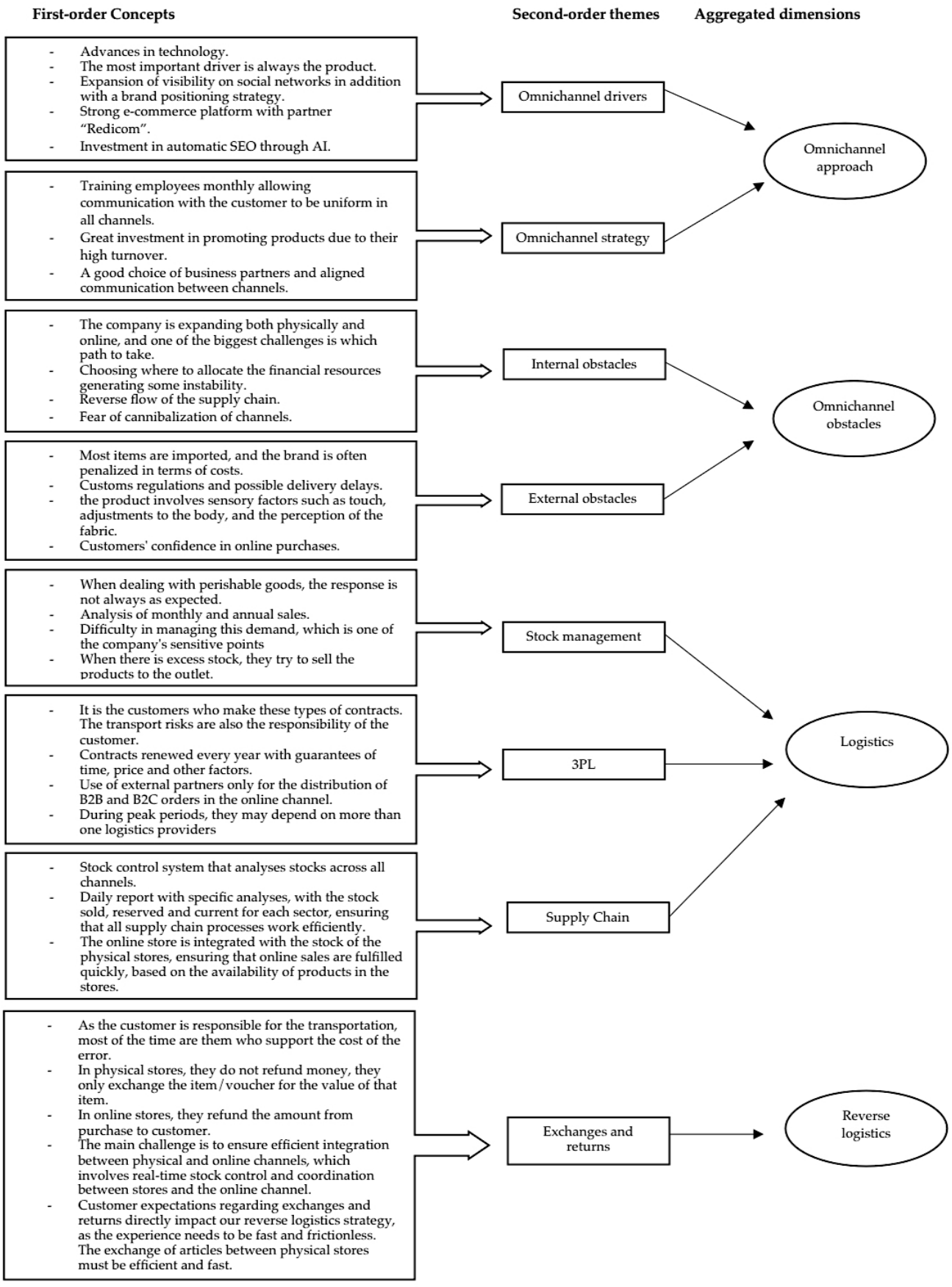

Figura 1 - Coding Scheme of the interviews

4.1 Omnichannel Approach

In terms of the omnichannel approach, the three companies assumed that technological advancement was the main driver, as stated by Firm A: “the advancement of technologies is very important, however, there are some technological developments that we cannot keep up with.” Firm A is in the transition process from a multichannel strategy to an omnichannel strategy. As the company's CEO said, “the high investment generates some risk, which is why we are in the transitioned phase.” According to the Business Development Manager of Firm B, the most important factor is always the product, and customer feedback is an essential factor in defining a business strategy: “the factors we consider most important as a company are always the base/the product. The best form of communication is customer reviews. However, now with new technologies (social networks, YouTube, internet) we adapt to this.” Both Firm B and Firm C are focusing on the extensive product promotion due to their high turnover.

In Firm C, for example, the integration of multiple channels is seen as a challenging process that requires strategic planning, well-defined rules and compatible systems. Choosing the right business partners and the aligned communication between channels allow this unification to flow efficiently, ensuring a consistent customer experience and optimising the company's results. So as they state, “[by] working side by side with our technology partners [and] creating content for the website that resonates with the public, we also communicate our value propositions through content, and storytelling is important to bring that to the website as well.” All three companies have a 100% personalised online customer support that is not limited only to online sales.

4.2 Omnichannel Obstacles

In regard to the internal challenges of implementing an omnichannel strategy, all the interviewees have a very homogeneous vision and way of thinking. They all face a common challenge of having to make choices on where to allocate their financial resources, if in the online channel or in physical stores, which creates a certain instability. For Firm C, channel cannibalisation was a major challenge when changing from a multichannel to an omnichannel strategy, which ended up not happening, since internal competition did not move customers from the brand's stores or franchises to the website. They stated that "the reason we didn't invest in e-commerce was because we had the "belief" that, since we had a business model that was very dependent on b2b, online would compete with multi-brand stores and cannibalize sales from our partners and the rest of the ecosystem." The three companies also pointed out as a common challenge the fact that processes "are still quite manual, especially in the unification between physical stores. A clear example is the order preparation system ('picking'), which could be faster and more automated," therefore, not allowing to maximise precious time needed for other activities that require more manual work. Problems associated with the reverse flow of the supply chain were also pointed out as challenges for all the companies. Firm B underlined the fact that all the logistics processes were a big challenge for them, since "there was a lot of room for errors". Regarding external challenges, despite the type of products sold being different, all companies face the challenges of international trade such as customs regulations and possible delays in deliveries, generating some penalties in terms of costs. The two brands in the textile sector complain about the difficulty in attracting new customers online due to the customisation required by clothing items, as well as the level of customers' trust in using an online sales channel. Firm C points out as a critical obstacle the fact that the customer experience is still not 100% seamless when combining both physical and online channels.

Table 5 - Challenges of omnichannel approach

Internal Challenges	External Challenges
- Financial resource allocation - Channel cannibalisation - High investments cost in new technology - Manual processes - Reverse flow of the supply chain	- Product characteristics - International trade (customs regulations) - Difficult in attracting new customers - Customers confidence in online purchases

4.3 Logistics

Firm B considers logistics to be the "heart of the company," as everything encompasses the logistics warehouses. Firm A reinforced the fact that "transportation risks are always the responsibility of the client, since when dealing with plants (perishable goods), the plants do not always respond in the way we want," often going rotten before delivery to the customer or they are delivered in a bad condition. All three companies analyse sales, however, demand management is for Firm C "still a sensitive point within the company." Both Firm B and Firm C have outlet stores which allow them to sell products when there is excess stock.

When it comes to logistics distributors (3PL), Firm B has contracts with carriers, which are renewed every year, and they are in contact on a daily basis. In what concerns the operation of Firm C, "third-party logistics providers (3PL) have a limited role. We use external partners only for the distribution of B2B and B2C orders in the online channel. All logistics between headquarters, warehouses and physical stores are managed internally, with distribution carried out exclusively by the company's drivers. This structure allows us to maintain greater control over processes, guarantee deadlines and preserve the integrity of the operation in physical channels." Overall logistics from head office and warehouse to physical stores is managed internally, with distribution carried out exclusively by the company's drivers.

All companies integrate an inventory system in physical stores, ensuring that online sales are fulfilled quickly, based on product availability in stores. For Firm C, “franchises are not integrated into an inventory system and the reference of orders are made manually.” They use an external partner, Redicom, for the website, which allows them to automate and allocate product sales in stores.

4.4 Reverse Logistics

When it comes to reverse logistics, Firm A mentioned, “There are many complaints, errors in transportation, customer errors, problems with temperature during transportation.” For firm C, the main challenge “is ensuring efficient integration between physical and online channels. This involves real-time inventory control and coordination of returns or exchanges between physical stores and the online channel.” As a general rule, “the system works in the same way when exchanges or returns occur online, requiring the product to be updated in the physical inventory system and vice versa to avoid stock discrepancies.” All companies believe that the customer expectations regarding exchanges and returns affect directly the companies' reverse logistics strategy, because the experience needs to be quick and smooth. However, Firm B argues, “Exchanges and returns don't happen very often, and the customers have a lot of confidence in the product. The main reason[s] and motive[s] are the product working for the brand as the best marketing strategy.”

5. Discussion

It is possible to conclude that factors, such as technological innovation and automation, transparency and effective integration of existing channels, together with logistics, directly impact the response to the challenges of an omnichannel approach. This plays a significant role in this type of approach, as well as supports the research work performed by Taylor et al. (2019), Brynjolfsson et al. (2013), and Parfenov et al. (2021).

In carrying out all three interviews, it was possible to collect valuable and crucial information to understand how companies: (i) manage their approaches, (ii) deal with challenges, and (iii) above all, try to reinvent themselves in order to promote consumer confidence, make a difference in terms of innovation and ensure the minimisation of challenges associated with their business strategy. The information obtained indicates that technological innovation and automation play a vital role in the approach of companies, with the associated opportunities becoming increasingly evident, validating the study conducted by Herhausen et al. (2015) on the need to make financial investments in integrative technologies regardless of the significant cost involved, because it is imperative for companies to become more efficient and digital within operational and decision-making processes. This idea was confirmed by two of the firms, however, it was not confirmed by the third, as the company was still in a transition phase, testing the best strategy and evaluating the risks associated with high investment costs. Similarly, transparency is essential to ensuring effective information exchange in supply chains, enabling the tracking of processes and products, and promoting the customer confidence that all companies consider important. In order to improve transparency, since the customer experience is still not entirely seamless between physical and online channels, particularly when it comes to exchanges, all firms interviewed are prioritizing efforts to overcome these limitations, aiming to ensure a more integrated and satisfactory omnichannel journey for the customer, demonstrating the point of view conveyed by Hübner et al. (2016) in

terms of the fulfilment process that is crucial for cross-channel information, as well as to prevent database isolation ensuring a coherent communication and seamless management of orders, regardless of the point of contact chosen by the customer.

In respect to how logistics allows to minimise the omnichannel challenges, considering all the factors previously mentioned and the conducted interviews, the three firms mentioned that there is a greater visibility and real-time control over logistics flows due to technological innovation and automation, example of this is how all logistics between headquarters, warehouses, and physical stores are managed internally. That is why the firms adopts this structure, to maintain greater control over processes, ensure deadlines are met, and preserve the integrity of operations across physical channels. This is paramount in order to manage goods distributed across several channels, lower errors, and speed up delivery procedures, which, in the context of competitiveness, demonstrates the shift indicated by Parfenov et al. (2021) from distribution channels to e-commerce platforms, claiming the requirement of a logistics strategy that incorporates omnichannel distribution models, warehouse automation, and cross-border trade. Additionally, based on the analysis of the interview data, it was possible to observe that when companies enable the customisation of the customer experience using data and purchasing patterns, particularly through fully personalised online customer support that extends beyond online sales, they are better equipped to meet the demands of the omnichannel environment more quickly and efficiently. This finding aligns with Verhoef et al., (2015) who highlight the importance of leveraging customer data to deliver integrated and consistent experiences across channels. For instance, the automation of distribution centres and warehouses increases operational speed and accuracy, resulting in faster deliveries and lower operating costs. This was a common factor among all companies, as they had integrated inventory systems in physical stores, ensuring that online orders could be fulfilled quickly based on in store product availability.

When combined with well-structured logistics, these practices allow companies to offer a continuous and consistent experience, with enhanced tracking and customer confidence. Together, these factors help minimise common omnichannel frictions, such as fallouts, delays or inconsistencies in the information, promoting consumer satisfaction and loyalty.

6. Conclusion

6.1 Main Conclusion

This study contributes to the theoretical and empirical advancement of the understanding of logistics' role in overcoming the obstacles associated with the implementation of omnichannel strategies, specifically aiming to address the research question that emerged from the gap identified by Parfenov et al. 2021), which highlights the need to transform logistics management in a context marked by the digitalization of the economy, but in which there is no clarification how this transformation materializes in companies.

By conducting three interviews with workers from different companies, two of which follow an omnichannel strategy and the other in the process of transitioning from a multichannel strategy to an omnichannel strategy, the study gathered insights into their logistics challenges, showing that the role of logistics is unanimously recognized as being a central factor in the alignment between channels, in ensuring the consistency of the consumer experience, in the efficiency of operations and in the success and growth of the companies. The practical implications arising from this analysis are particularly relevant for companies that are in the transition phase or even in the consolidation of omnichannel strategies. The data obtained in the interviews show the need to integrate the logistics functions, from the initial phases of strategic planning to its implementation, promoting an integrated approach that combines operational capabilities, support technologies and customer orientation.

The adoption of flexible and advanced logistics solutions, such as software powered by innovative technology, emerges as a means of creating value, contributing not only to overcoming obstacles to the omnichannel strategy, but also to strengthening business competitiveness in an increasingly demanding digital environment.

In this sense, the study answers the research question "How can logistics assist enterprises in overcoming omnichannel challenges?", by demonstrating that integrated and digitally oriented logistics practices such as dynamic coordination between warehouses and physical stores, strategic use of reverse logistics, automation of the flow of information and goods in distribution centers and major investment in warehouses and innovative technologies that allow companies to monitor stocks, are essential to mitigate structural, operational and technological constraints inherent to an omnichannel strategy. These findings, despite being derived from an exploratory context, support the argument that logistics is not just a support function, assuming instead a fundamental and distinctive role in addressing the challenges associated with channel integration. It is important to recognize, however, that this study has limitations, particularly concerning the sample size, as it consists of only three interviews. Despite the consistency and richness of the statements collected, this study is exploratory in nature, with the primary objective of generating preliminary knowledge and mapping relevant trends. In this context, the theoretical contributions presented here should be understood as a starting point for future research that could increase the number of cases analysed, diversify the sectors represented and deepen the relationship between specific logistics practices and the performance indicators of an omnichannel strategy.

6.2 Limitations

The sample used for the semi-structured interviews was small, therefore it constituted one of the main methodological limitations experienced in this research. A broader sample involving more companies with different sizes from different

sectors would offer a more enriching and wider range of views with regard to the role of logistics in minimising the challenges of omnichannel approach. Finally, the dynamic nature of omnichannel means that strategies and obstacles are continuously evolving, potentially limiting the temporal relevance of the findings. In terms of theoretical limitations, the literature on logistics applied to the omnichannel context is still relatively new, and choosing to rely only on the thesis provided by Parfenov et al. (2021) has conditioned the development of a more solid and coherent theoretical framework, particularly with regard to channel integration and logistics issues. The depth and theoretical coherence of the findings may as well be limited as a result of the theoretical analysis of this dissertation being based on limited references.

6.3 Future Research

There is still insufficient research on the trade-offs between logistics efficiency and omnichannel approach in an integrated manner, especially in situations with high demand variability. Studies, such as the one provided by Hübner et al. (2016), analyse the evolution of fulfilment logistics models, but only focus on particular industries, such as food retail, thus limiting the expansion to other contexts. Further research should be able to develop quantitative models that would facilitate a statistical generalisation over bigger samples, as well as cover more geographical regions in order to support the qualitative insights obtained. Further research may also consider looking at how consumers value sustainability in their purchasing experiences and how sustainable logistics methods are applied in omnichannel plans as environmental concerns increase. It would be beneficial to track businesses over an extended period of time, as they develop their omnichannel strategies, so as to gain important longitudinal insights on best practices, typical hazards, and major success factors. Additionally, future research could explore visionary trends, such as the application of predictive AI models, to optimise last-mile delivery strategies in real-

time, apart from the development of fully automated reverse logistics systems, so as to enhance the speed and sustainability of returns management.

Declaração sobre a IA generativa e as tecnologias assistidas por IA no processo de escrita

Declaração: Durante a preparação deste trabalho, o autor utilizou o *Chatgpt 3.0* na elaboração do resumo, na estruturação metodológica e na compilação das referências em formato APA. Depois de utilizar esta ferramenta, o autor reviu e editou o conteúdo conforme necessário e assume total responsabilidade pelo conteúdo da publicação. Declaro ainda conhecer e respeitar o Código de Conduta de Inteligência Artificial da Católica Porto Business School.

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