

**THE ELEMENTS OF OMNI-CHANNEL RETAILING: AN ANALYSIS OF
FASHION RETAILERS FROM TURKEY**

GİZEM SAYAT AYCAN

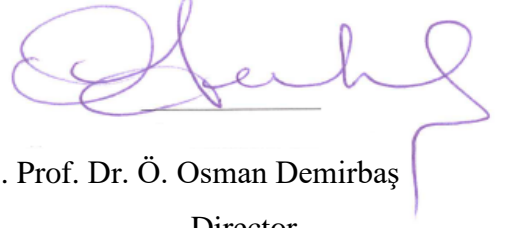
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**THE ELEMENTS OF OMNI-CHANNEL RETAILING: AN ANALYSIS OF
FASHION RETAILERS FROM TURKEY**

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GİZEM SAYAT AYCAN**


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Approval of the Graduate School of Social Sciences




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Master of Arts.




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ABSTRACT

THE ELEMENTS OF OMNI-CHANNEL RETAILING:

AN ANALYSIS OF FASHION RETAILERS FROM TURKEY

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In today's world, omni-channel retailing has become a very important strategy with the widespread use of smartphones and tablets and increased customer expectations. Omni-channel retailing integrates different channels to produce a single, flexible and seamless channel. Fashion retailers from Turkey have begun to invest in omni-channel retailing to provide a seamless shopping experience for their customers.

In this study, semi-structured interviews were conducted with the leading fashion retailers from Turkey. In fashion industry, the sub-elements of omni-channel retailing were determined and they were categorized into the main elements. Thus, the hierarchical structure was obtained for Analytic Hierarchy Process (AHP).

This thesis examines the importance values of the main elements and sub-elements of omni-channel retailing in fashion industry in Turkey by using AHP method. Therefore, this research would guide fashion retailers to implement omni-channel strategy.

Keywords: Omni-channel retailing, fashion industry, analytic hierarchy process (AHP)

ÖZET

BÜTÜNCÜL KANAL PERAKENDECİLİĞİNİN UNSURLARI: TÜRKİYE'DE MODA SEKTÖRÜNDEKİ PERAKENDECİLERİN ANALİZİ

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Günümüzde bütüncül kanal perakendeciliği, akıllı telefonların, tabletlerin kullanımının yaygınlaşması ve müşteri beklentilerinin artmasıyla çok önemli bir strateji haline gelmiştir. Bütüncül kanal perakendeciliğinde tek, esnek ve kesintisiz bir kanal üretmek için farklı kanalları entegre etmektedir. Türkiye’de moda sektöründeki perakendeciler, müşterileri için kesintisiz bir alışveriş deneyimi sunmak amacıyla bütüncül kanal stratejisine yatırım yapmaya başlamıştır.

Bu çalışmada, Türkiye’de moda sektöründeki önde gelen perakendeciler ile yarı yapılandırılmış röportajlar yapılarak, moda sektöründe bütüncül kanal perakendeciliğinin temel unsurları ve alt unsurları tespit edilmiş ve gruplandırılmıştır.

Analitik hiyerarşi prosesi (AHP) yöntemi kullanılarak Türkiye’de moda sektöründe bütüncül kanal perakendeciliğinin temel unsurlarının ve alt unsurlarının önem değerlerini analiz etmektedir. Bu araştırma, bütüncül kanal stratejisini uygulamak isteyen moda sektöründeki perakendecilere yol göstermek amacıyla yapılmıştır.

Anahtar Kelimeler: Bütüncül kanal perakendeciliği, moda sektörü, analitik hiyerarşi süreci (AHP)

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CHAPTER-1

INTRODUCTION

1.1. Introduction and Scope of the Thesis

In today's world, customer demands are changing so fast with growing use of smartphones and tablets. They expect seamless shopping experience and wish to choose their channels that are customer contact points with companies. For instance, if a customer needs a life insurance policy after searching for information on different channels, she/he decides on which channel to use when purchasing something (Neslin et al., 2006).

On the other hand, with increased competition in the marketplace and the reachable internet access, retailers expand their channels as offline and online and are moving from being purely single- to multi-channel to provide seamless customer experience (Rao et al., 2009; PAC, 2014). For this reason, retailing is categorized as single channel, multi-channel, cross-channel and omni-channel according to two characteristics: (1) whether channel interaction can be triggered by the customer or is controlled by the retailer; and (2) how many and what channels are considered (Beck and Rygl, 2015).

If retailers only operate one sales channel and a logistics system, this will be a single channel retailing. This category includes exclusively bricks and mortar retailers and pure online retailers (Hübner et al., 2016). Bricks and mortar store offers staff service, cash payment, amusement and social experiences and utilisation of the five senses during the purchase decision process. However, customers spend time and energy for these services by visiting stores. The stores may not be opened at right times for consumers (Zhang et al., 2010). Therefore, multi-channel retailing provides more than one channel that has no trigger interaction by the customer or has no control integration by the retailer; so the price and inventory data of product among all the channels cannot be shared (Kim et al., 2005; Beck and Rygl, 2015).

Retailers operate multiple channels but separately, and they create stand-alone systems. There is no operational or logistics interface between the two channels (Hübner et al., 2015; Verhoef et al., 2015). For example, original bricks and mortar retailer open a web shop with no operational coordination or exchange of goods among

the products (Hübner et al., 2016). Therefore, multi-channel retailing does not provide seamless buying experience and satisfy the expectations of customers. The retailers are aware of the significance of cross-channel retailing (Pentina and Hasty, 2009).

Cross-channel retailing provides partial triggered interaction by the customer and partial controlled channel integration by retailer at least two channels or all channels it has. For instance, the customer may purchase from only one channel and return it to only one channel. It is a partial channel interact because the customer cannot use the channel they want. Additionally, cross-channel retailing has full triggered interaction by the customer and/or full controlled channel integration by the retailer but not for all channels (Beck and Rygl, 2015). However, the customers desire advantages of digital such as broad product selection, and customer's ideas. They also desire the benefits of physical stores, such as staff service and return capacity of the product, and they want to purchase like an event and an experience. Therefore, retailers need full integration and coordination between the digital and physical channels (Rigby, 2011).

Omni-channel retailing offers full triggered interaction by the customer and/or full controlled integration by retailers on all channels that are the physical store, catalogue, telephone, online and mobile shop. In addition, the retailer provides accessible information on the price as well as inventory data for all channels. For example, customers may return a product or service through a channel selected by them. It is not important where they purchased it (Beck and Rygl, 2015). Omni-channel is not an option, but it is a necessity (Verhoef et al., 2015). As customer pressure is driven to integrate various channels in order to share information and supply the customer with a coherent and premium shopping experience across all their channels (Burnes and Towers, 2016).

Omni-channel retailing integrates channels to offer opportunities of all the channel and, removes the boundaries between the various channels and customer touch points (Verhoef et al., 2015). There are two levels of integration: harmonisation of marketing variables and coordination of channels. Harmonisation of marketing variables allows implementing cross-channel promotions and cross-selling (van Baal, 2014). Coordination of channels covers activities that are out-of-sight to consumers, such as purchasing, information technologies, logistics and customer data management. Thereby, omni-channel retailers offer integrated order processing, fulfilment, and

distribution; and they consolidate their customer databases to improve personalized customer service, and to increase customer loyalty (Pentina and Hasty, 2009). For this reason, it is a key strategy for customer satisfaction and customer loyalty due to increased customer expectations (Faulkner, 2013).

The omni-channel retailing generates a single, flexible, and seamless channel of orchestrated product flow through combination of different sales channels (PAC, 2014). This flow must be planned for both delivery of products and customized shopping experience per customer's expectation. It personalizes customer engagement through virtual expert advice, social media, customer loyalty, replenishment and automated services, and products customization. For example, the customer sees an advertisement for jeans on social media at work, she/he can scan a QR code, then purchase it online at home. The customer checks the nearest store and confirms that's where she/he will pick up the jeans through inventory visibility, when customer arrives the store the retailer recognizes this customer and brings the jeans by using personalized in-store service. Customer sees a shirt she/he likes, scans its QR code, and requests delivery of this shirt to the fitting room. If the customer's size is not available in the store, retailer will offer to deliver it to the customer through courier services. Next day, the customer receives an e-mail stating that the delivery has been carried out. Customer cannot wait to tell all their friends. As this example shows consumers that use different channels to assess products, order, pay, collect, and return their buys has driven companies to look around the omni-channel approach (DHL, 2015).

The omni-channel approach is vital for fashion retailers because they have become important global players (Deloitte, 2016). Therefore, fashion retailers have started to adopt omni-channel strategy. They have lots of implementation in terms of omni-channel according to their customer's expectations. For example, Louis Vuitton and J.C. Penney provide self-service or assisted online terminals in their physical stores to integrate online features into offline channels (Herhausen et al., 2015).

Hollister, which is a US fashion retailer, integrates online and offline channels. Robots are used to hand in clothes to fitting rooms in their stores. When customers enter the store, they scan the clothes' QR Codes via the Hoister mobile application and select their sizes which they like to try on. Then the application sets aside the user a fitting room, and in 30 seconds the clothes are hand in through a system that has steel cables,

hangers and slides. Unless the clothes fit, the customers demand a different size via an application, while they are still in the fitting room (DHL, 2015).

According to Retail Week Guide's Fashion Retailing in an Omni-Channel World Report, the physical store is still the preferred channel for consumers to shop in the fashion industry. 49% of consumers who are 25-to-34-year-olds prefer online channels. 62% of total consumers still prefer physical stores. However, recent technology is converting the retailing and, removing the borders between the retailers' online and offline offers. Stores are ever-changing. Besides, digital technologies offer seamless mobile payments, personalized discounts based on the customer's browsing habits. Retailers utilize various digital technologies to interact with customers in-store such as, beacon technology that sends offers to customer's phones as they pass in front of the store or a lighting navigation system that gives location-based information of stores to customers via a smartphone app. The purpose of fashion retailers includes end-to-end service through seamless delivery, fast returns, mobile-optimised sites, high technology and the newest services such as Click and Collect to keep up today's omni-channel consumers

Fashion retailers use different channel integration implementations of omni-channel approach because retailing also displays country-specific patterns by the reason of customer's shopping behaviour, the different national delivery models, and demographics by country. For example, the total volume of the retail sector in Turkey reached around US\$ 303 billion in 2013 and is anticipated to grow a CAGR (Compound Annual Growth Rate) of 7% between 2014 and 2018. Fashion retailing is one of the most promising and the fastest-growing retail category which has a high level of investors' interest in Turkey. Fashion retailing is anticipated to grow a CAGR of 8% and reach US\$ 37 billion in 2018 through construction of shopping malls and accelerating the use of credit card. Turkish companies offer online channels and alternative payment methods. Thus, the total volume of online shopping grew annually by 40% on average in the 2009-2013 period and reached US\$ 18 billion (Deloitte, 2014). The total size of online retail reached US\$ 8.91 billion in 2016 and Turkey's rate for internet penetration is 51% (Ecommercenews, 2017).

In this study, semi-structured interviews were conducted with the leading fashion retailers from Turkey. In fashion industry, the sub-elements of omni-channel retailing were determined and they were categorized into the main elements. Thus, the hierarchical structure was obtained for AHP method. This thesis examines the importance values of the main elements and sub-elements of omni-channel retailing in fashion industry in Turkey by using the analytic hierarchy process (AHP).

1.2. Significance of the Study

The literature exists that focuses on retailer's logistics and distribution systems, customer behaviour, information technologies and, categorization of retailing (e.g., Neslin et al., 2006; Piotrowicz and Cuthbertson, 2014; Beck and Rygl, 2015; Hübner et al., 2016).

This research is the groundwork for the elements of omni-channel retailing in fashion industry and extends the literature regarding investigation fashion retailers in terms of omni-channel retailing based on empirical data. This study covers the overall perspective of retailer, which includes channels and touch points, data integration, fulfilment and delivery of ordered products, return management, front-end technologies and back-end technologies. This thesis would guide the fashion retailers to implement omni-channel strategy. This research is expected to contribute to the existing literature from three domains: conceptual, empirical, and managerial contributions.

1.3. Research Questions

In view of the gap in the literature, three main purposes are detected. The objectives are (1) to investigate main elements and sub-elements of omni-channel retailing in fashion industry, (2) to determine importance values of main elements and sub-elements by using AHP method (3), and to analyse fashion retailers from Turkey. The research questions address general topic so my formulated questions are as follows:

- RQ1: What are the main elements and the sub-elements of the omni-channel retailing in leading fashion retailers of Turkey?

- RQ2: What are the importance values of the main elements and the sub-elements of omni-channel retailing in leading fashion retailers of Turkey?

1.4. Structure of the Thesis

The remainder of this thesis is organized as follows: Chapter 2 provides information on the literature review the main elements and sub-elements of omni-channel retailing and omni-channel retailing in fashion industry. Chapter 3 presents the stages and findings of semi-structured interviews with leading fashion retailers in Turkey. Chapter 4 presents the stages and findings of analytic hierarchy process (AHP). Chapter 5 presents conclusion, future works and limitations.



CHAPTER-2

LITERATURE REVIEW

2.1. Selected Literature Review

In practical terms, several different terms and definitions including “multi-channel”, “cross-channel”, and “omni-channel” have been used for retailing in multiple channels (Beck and Rygl, 2015). Retailers operate multiple channels but separately, and they create stand-alone systems. There is no operational or logistics interface between the two channels (Hübner et al., 2015; Verhoef et al., 2015). However, omni-channel retailing eliminates the boundaries between the offline and online retailing (Verhoef et al., 2015).

The systematic literature review consisted of two parts. First, because the topic is new and controversial in practitioner-oriented forums, an Internet search was performed as publications of retailers, consultancy, and survey companies (e.g. “Deloitte”, “PAC”) in this field. Second part covered international research journals.

The first search covered a revision of practitioner-oriented publications. Omni-channel retailing currently is a practice-driven effort. Most reports are published by consultants, associations, companies, and logistics providers.

The second search included all major international journals on distribution management, marketing, logistics, warehouse, sales, customer relationship management, and information technologies combined with omni-channel retailing. The electronic database for the literature review (Google Scholar, SSRN), library service databases (Ebsco, Scopus, Metapress), and publishers (Sciencedirect, Emeraldinsight, Informs, Springerlink, Taylor & Francis, Wiley) were sourced and literature cited was checked in identified papers. Title and subject terms as related keywords e-tail, e-commerce, online-, cross-, multi-, omni-, including plural forms (e.g., “channels”), delimiters (e.g., “omni-channel”), prefixes (e.g., “across”), and suffixes (e.g., “retailing”) were searched. Also, different formats of spelling (e.g., using “Omni- Channel” for “omnichannel”) and expressions (e.g., using “physical store” or “local store” or “offline channel” for “traditional store”) were searched.

Additionally, only English articles were searched because of the inception of online commerce in the late nineties. The literature search was limited to published references after 2000 because omni-channel retailing has some characteristics that are related with online retailing.

2.2. Omni-channel Retailing

With increased competition in the marketplace and the accessible access to internet, they expand their channels as offline and online and are moving from being purely single- to multi-channel to provide seamless customer experience (Rao et al., 2009; PAC, 2014). For this reason, retailing is categorized as single channel, multi-channel, cross-channel and omni-channel according to two characteristics: (1) whether channel interaction can be stimulated by the consumer or by the retailer; and (2) how many and what channels are conceived (Beck and Rygl, 2015).

If retailers only operate one sales channel and a logistics system, this will be a single channel retailing. This category includes exclusively bricks and mortar retailers and pure online retailers (Hübner et al., 2016).

Multi-channel retailing offers more than one channel that has no trigger interaction by the customer or has no control integration by the retailer; so the price and inventory data of product across channels cannot be distributed (Kim et al., 2005; Beck and Rygl, 2015). Retailers operate multiple channels but separately, and they create stand-alone systems. There is no operational or logistics interface between the two channels (Hübner et al., 2015; Verhoef et al., 2015). However, multi-channel gives an opportunity to the customers to obtain the same product from multiple channels of the same retailer and at the same time retailers reach different customers (Porto, 2006).

While multi-channel strategy becomes important in the distribution of companies, managers have to deal with different challenges, such as dealing with channel conflict, creating synergies across channels, to integrate and coordinate multiple channels regarding products prices, products delivery, and logistics (Rosenbloom, 2007). This is because customers demand well-arranged service and shopping experience, regardless of the channel they select. They expect to move between channels seamlessly. Even if retailers offer multi-channel access, mostly online and offline

channels are operated separately because they are managed by different people or departments. Therefore, marketing, brand management, pricing, promotion and supply chain management cannot be integrated across all channels (Piotrowicz and Cuthbertson, 2014). Cross-channel management helps to develop complementarities and synergies between the channels through the sharing of logistical operations, marketing, technologies and communication policies. For example, retailers that have developed sales through the internet, use their retail stores as a logistic base to prepare orders given online.

Cross-channel retailing offers partial triggered interaction by the customer and partial controlled channel integration by the retailer across minimum two channels or all channels that retailer has. For instance, the customer may buy from only one channel and return it to only one channel. It is a partial channel interact because customer cannot use the channel they want. Additionally, cross-channel retailing has fully triggered interaction by the customer and/or fully controlled channel integration by retailer but not for all channels (Beck and Rygl, 2015). The cross-channel integration has five dimensions from customer's perception. They are information consistency, freedom in channel selection, e-mail marketing, channel reciprocity and an appreciation of store-based customer service (Lee and Kim, 2010).

The major difficulty of a cross-channel strategy is managing the flows of information, goods, services, and money across channels, so cross-channel retailers integrate their information systems, centralize their procurement, optimize their logistics network and diversify their sources of financial (Cao, 2014). Therefore, there are five stages for adopting a cross-channel strategy: solo mode, minimal integration, moderate integration, full integration and new business model. Solo mode is that despite a multi-channel strategy, retailer manages business models separately for each channel. Minimal integration is that main front-office activities of the business model are dissimilar despite supplementary across channels. At the same time, the retailer focuses on the progress of an online business. Moderate integration is that retailer integrates several operational activities across channels such as Click and Collect and, makes investments in the back office of the business model such as the information and distribution systems to centralize and optimize shifts like call-centre services. Full integration is that retailer provides same offers across channels. For example, product range and price are same in online and offline channels. It offers a seamless shopping

experience to customers through full integration of the organization (Cao, 2014; Cao and Li, 2015).

According to Cambridge Dictionary (2014), the prefix omni means everywhere or everything. Thus, omni-channel involves and presents everything in the distribution. Omni-channel retailing means that products or services are reachable at any time anywhere for customer (Deloitte, 2015). Device interconnection and the disappearance of borders between the online and offline leads to a commerce that is everywhere. Thus, customers search for information of products or services in different sources before purchasing. These sources are physical stores, e-commerce channels, social media (Angeleanu, 2015). It therefore offers easy and continuous shopping between all the channels together as one complete channel.

Customers can reach information on the products such as promotion and price online as being in a physical store. They demand the right information at the right moment (IBM, 2015). Omni-channel retailing involves the advantages of both digital and physical stores. Firstly, digital stores provide product information, editorial content and advice, customer reviews and tips, convenient and rapid checkout, social involvement, broadest selection, price comparison and special deals, availability of anything, and anytime and anywhere access. Secondly, physical stores provide assortment, in-store personnel help, shopping experience, the ability to touch products, the availability of easy returns, instant access to products, and help with repairs (Rigby, 2011).

Omni-channel retailing offers fully triggered interaction by the customer and/or fully controlled integration by retailers on all channels that are the physical store, catalogue, telephone, and online and mobile shop. Also, the retailer provides customers with prices, and inventories data on all channels. For example, customers may return a product or service through a channel selected by them. It is not important where they purchased it (Beck and Rygl, 2015). Omni-channel retailing is different from multi-channel (Wallace et al., 2004). It has interactive, mass-communication channels including store, online website, direct marketing, mobile channels, social media, and customer touchpoints. It provides seamless retail experiences through integrated channels (Verhoef et al., 2015).

Omni-channel retailing exhibits four main differences in channel organization. First, it involves more channels; second, it implies a broader perspective as it involves not only channels but also customer touch points; third, it induces the disappearance of borders between channels; and, fourth and most importantly the focal differentiator of omni-channel retailing, customer brand experience, is highly specific (Verhoef et al., 2015).

The omni-channel is characterized as a strategy to concern a management of distribution channels synergic and co-ordinately and, to integrate processes such as logistics, storage, distribution, customers' attendance, database and marketing. The integration of logistics in terms of online and store fulfilment is a goal for omni-channel retailers (Rao et al., 2009). Integration of online and offline channels is a requirement (Gallino and Moreno, 2014).

Functional integration is the sharing of organisational resources across channels within a multi-channel environment such as marketing, logistics, and finance. The advantages of functional integration across channels are seamless shopping experience, consistency of products or services information and communication with retailers (Barua et al., 2001; Kern and Willcocks, 2001; Lee et al., 2001; Goersch, 2002; Schoenbachler and Gordon, 2002; Steinfield, 2002).

The use of multiple channels requires companies to organise and manage each channel, to invest in technologies and logistics, to establish marketing strategies, and to create a customer database (Jeanpert and Paché, 2016). The various systems (e.g., logistics, information, marketing, sales, training, and product management) must be unified. For this reason, all departments work together to deliver a seamless and enriched brand experience (Picot-Coupey et al., 2016). The seamless customer experience requires coordination of physical (offline) and virtual (online) channels in terms of order management, fulfilment, logistics processes and after-sales service (Burt and Sparks, 2003; Chircu and Mahajan, 2006). Omni-channel retailers offer integrated order processing, fulfilment, and distribution system, and they create customer databases to develop customized customer service and to increase customer loyalty (Pentina and Hasty, 2009). For this reason, it is a key strategy for the customer satisfaction and customer loyalty due to increased customer expectations (Faulkner, 2013).

Omni-channel strategy needs changes and updates at logistics and marketing (Neslin et al., 2006). Marketing promises lots of things to customers. It promises product or service fulfilment, benefits and quality characteristics, deadlines and, the best shopping experience (Carvalho and Campomar, 2014). The marketing activities need organizational process, controls of fulfilment and, improvement of the existing resources and results. It is difficult to make any operation of production and of marketing without logistics and distribution system. Logistics allows customers to reach the products at the required places and time. Logistics includes operational process, planning, productive and commercial activities.

Logistics and supply chain are the backbones of omni-channel strategy. They provide cost-effective and consistent delivery, customized service and flexible fulfilment. Retailers achieve inventory optimization and visibility, customer satisfaction and loyalty, meeting customer expectations through logistics and supply chain. It is very important to achieve omni-channel implementation (DHL, 2015). An omni-channel retailer's distribution system covers the flow of goods both to stores and customers as forward and backward distribution (Hübner et al., 2016). For this reason, offering different store layouts and physical or virtual channels are not enough. Investing in the intelligent logistic systems for integrated solutions is important. Furthermore, good information management involves consistency across channels and keeping information up-to-date through integrated information systems that have important role for supporting logistics and distribution management (Tate et al., 2005).

The ability of information technologies (IT) to integrate activities and offers across multiple channels provides a promising opportunity for retailers to enhance their relationship with their customers and firm performance. Customers may learn about the available offers, complete their orders and obtain customer service across all channels in an appropriate and integrated way. Therefore, the retail industry has begun to use IT to automate and integrate business processes across their offline and online channels (Oh et al., 2012). The dimensions of IT enabled retail channel integration capability regarding products, customer service, information, and employees, promotion, presentation (atmosphere), place, process and price as important activities for all retailers (Zeithaml et al., 2006). The merging of information systems concerns not only consumer-related information, but also marketing information such as product assortment prices, and logistics, that need to be synchronized across channels (Cao and

Li, 2015). Effectively utilization of IT in integrating their activities across the functional areas is significant for retailers so that the consistency and flow of information regarding customers, orders, and inventory can be supplied (Alter et al., 2000; Cappiello et al., 2003; Vickery et al., 2003).

To sum up, omni-channel retailing needs to invest in information technologies, marketing, logistics, customer service and distribution. According to Kurt Salmon Management Consulting Company (2014), which is part of Accenture Strategy, if fashion retailers wish to be more than average, they need to offer to their customers online, store, mobile, social, cross channels and also fulfilment across these channels. Online channel covers virtual fitting rooms, wish lists, customer comments, and helping via message. In store, retailers offer Wi-Fi, mobile point of sales (POS), and staff service by technological implementations. Mobile channel offers customer comments, a visible total shopping amount and GPS store locator. Social channel provides a powerful communication with customers. Cross channel fulfilment includes home delivery, next or same day delivery, Click and Collect, and Reserve and Collect.

Macy's is an omni-channel retailer that has My Macy's localization program, omni-channel integration, and Click and Collect. The My Macy's localization program was launched to deliver a merchandise assortment and personalized shopping experience. Customers may reach what is available in shops for a seamless shopping experience. Macy's displays detailed indoor floor plans supported by Google Maps 6.0. Omni-channel integration of Macy's enables visibility and management of inventory across channels. It also provides next day pick-up from a store by a customer or home delivery through store associates and rapidly checking system. If fulfilment centre inventories are consumed, store inventory may be in-stock to fulfil online customer orders. Macy's has a single integrated commerce and marketing team instead of separate channel based organization. It also collects customer data such as preferences and purchasing behaviour to obtain a 360-degree view of each customer. Macy's analysed the data for new processes to offer a seamless customer shopping experience. Macy's implemented its Click and Collect initiative nationwide in 2014. US\$ 1 billion of Macy's direct-to-customer shipments occurred from Macy's stores. This new process combines online and offline channels, and offers a new dimension in customer access for a personalized and seamless shopping experience across channels (Digital 2016).

The structured literature review showed that sales and marketing, customer service, information technologies forward and backward distribution are key enabler for omni-channel. Logistics and supply chain are the backbones of omni-channel strategy (DHL, 2015). Supply chain investments are key issue in channel integration. Product range, delivery alternatives, reverse flows, and inventory across channels should be integrated. This integration need goods and information flows across online and offline channels (Piotrowicz and Cuthbertson, 2014). Information technologies (IT) integrate activities of retailers such as, sales and marketing, logistics, distribution, and customer service to serve omni-channel retailing (Oh et al., 2012). Customer service, sales and marketing provide two-way communication (interactive) between the retailer and the customers by including customer touchpoints. Marketing is set of promises to customers (Hennig-Thurau et al., 2010; Carvalho and Campomar, 2014; Verhoef et al., 2015). Thus, the main elements and sub-elements of omni-channel retailing selected from literature review have been categorized as sales and marketing, customer service, information technologies, and forward and backward distribution.

2.2.1. Sales and Marketing

American Marketing Association (2008) defined marketing as an activity, the set of processes and knowledge to originate, communicate, deliver and exchange offers which have value for customers. Marketing requires developing strategies that effectively analyse target customers, creating contact points with customers, generating satisfaction, loyalty, and relations in the long term. Therefore, it is crucial that the customers are able to reach the products or services at the right channel and at the right time when they need (Bolton and Tarasi, 2007).

Sales is the final phase of marketing, which also includes pricing, promotion, place and product (the 4 P's). The activities of the marketing mix that a company uses to implement the market actions that are named marketing 4 Ps: product, price, promotion and place (McCarthy, 1978). The successful marketing is related to the effective application of integrated marketing that includes 4 Ps with the compatibility of each of these tools among themselves.

The well-integrated multiple channel strategy involves product or service consistency across channels, integrated promotions and information system that shares customer, price and inventory data across channels, a store pickup possibility of online orders (Berman and Thelen, 2004). Five key challenges for retailers are data integration across channels, coordination of channel strategies, understanding customer behaviour, channel evaluation and, allocating resources across channels (Neslin et al., 2006). The know-how requirements for integrated multiple channel retailing are data integration, organizational structure, consumer analytics, evaluation and performance metrics (Zhang et al., 2010).

In omni-channel retailing, customers redeem their coupons through all channels that they want to use. Products and services are consistent and fully integrated by retailer who shares customer, price, and inventory data across all channels (Beck and Rygl, 2015). Integrated order fulfilment supports that customers may choose a channel to complete their purchase. They may also order products through an online channel and then pick them up at the nearest stores. Their coupons may be redeemed by either online or offline channel (Wallace et al., 2004). Retailers ensure a consistency of product and of pricing by integrating product catalogues, product descriptions, product categories, prices and discounts across all channels (Daniel and Wilson, 2003). It ensures the transparent information flow between the processes and reduces from information inconsistencies (Rangaswamy and Van Bruggen, 2005).

Customers prefer Internet rather than other channels for finding price promotion deals. Retailers should design their promotion strategies according to these findings (Verhoef et al., 2007). For example, coupons proposed in one channel are redeemable in other channels with promotion integration. Integrated promotion increases awareness of the different channels by the advertising and publicity of one channel through another channel, and by encouraging customers of one channel to use the others (Bahn and Fischer, 2003). For example, the physical store can be used as an advertisement for the Website through brochures, receipts, carrying bags, and posters (Berman and Thelen, 2004). Likewise, the Website can announce in-store promotions (Otto and Chung, 2000).

Customer data integration for customer across channels provides access during each stage of the decision process. Data integration enables managers to understand consumer behaviour and evaluate channel performance (Neslin et al., 2006). By sharing customer information on store and online channels, retailers can customize promotions, rewards and loyal consumers, and maximize customer value and company profits (Pentina and Hasty, 2009). Customers request a more customized shopping experience. Retailers make offers based on the consumers' shopping behaviour (Deloitte, 2015). Integrated information access provides customers with access to information available across all channels. For instance, the Website offers customers to search products available in store through an integrated database (Bendoly et al., 2005).

Table 1. The sub-elements of omni-channel retailing by sales and marketing

Main Elements	Sub-Elements	Description of Sub-Elements	References
Sales and Marketing	Coupon and promotion integration	Coupons and promotions are redeemed across all channels	Bahn and Fischer (2003) Berman and Thelen (2004) Beck and Rygl (2015)
	Customer data integration	Customers' data are integrated across all channels. Retailer can reach and track customer data both in online and offline channels	Berman and Thelen (2004) Neslin et al. (2006) Beck and Rygl (2015)
	Price integration	The price of products is integrated and same across all channels	Daniel and Wilson (2003) Berman and Thelen (2004) Verhoef et al. (2007) Beck and Rygl (2015)
	Product integration	The range of products is integrated and same across all channels	Daniel and Wilson (2003) Berman and Thelen (2004) Beck and Rygl (2015)

2.2.2. Customer Service

Customers expect both high levels of customer service and a seamless shopping experience across all channels (Burnes and Towers, 2016). Multi-channel retailers should figure out the relationships between the cross-channel integration, customer's shopping orientation and loyalty to design their marketing strategies for customer

satisfaction (Lee and Kim, 2010). Omni-channel retailers design their supply chains to support physical store operations, manage customer expectations and deliver satisfactory customer service (Xing et al., 2010).

With increasing competition customer loyalty is becoming a very important goal. For this reason, retailers attempt to enhance customer satisfaction and establish customer loyalty that allows understanding of customer behaviour and preference (Wallace et al., 2004). Most retailers implement customer loyalty programs or provide cards that can be used in-store (Yoon and Zhou, 2011). They can collect customer data by loyalty cards, and offer products and services for target customers individually. In addition, big companies like Apple, Google, Facebook, eBay, and Amazon follow customer behaviour (Piotrowicz and Cuthbertson, 2014).

The loyalty program keeps customers. For example, newly registered members can win lottery sales promotion online. In-store customers can use their mobile phones to prove their membership to a loyalty program, and data on this can be integrated into the online and offline channels. On the other hand, the retailer may submit promotion of loyalty programs based on channel (Cao, 2014). Sephora in France, by scanning its loyalty card with a smartphone with the MySephora application, a salesperson can access the consumer's complete sales records of internet and store, then the software automatically proposes products that are convenience with the consumer's profile (Tazzioli, 2017).

These days, consumers can browse catalogues for products, search for their information online, make purchases in stores, and get after sales services through call centres (Rangaswamy and Van Bruggen, 2005). Integrated customer service provides access service support in the channel of customer's choice. Support can be provided at physical stores regarding online orders or returned goods (Bendoly et al., 2005).

Retailer's website provides after-sales services regarding return or maintenance of merchandise via real-time live chat in online channels that gives online customers access to customer service assistants (Amit and Zott, 2001). Customer service listens to consumers via different platforms such as call centre, online customer service, microblog, e-mails, assigned forum, and in-store (Cao, 2014). In online channels, customers review a product score, give score a product or service, contact someone,

ask a question, and share both their satisfaction and dissatisfaction regarding the product or service (Piotrowicz and Cuthbertson, 2014).

Customers compare prices of merchandise through a retailer's online channels. They may get service from retailer's call centres through "click-to-call". Channel integration offers that customers may select channel independently during purchasing (Berry et al., 2010). Although new self-service technologies implemented to obtain merchandise information with a mobile app or in-store kiosks for customer, some of them claim communication and information support from in-store customer service (Selnes and Hansen, 2001).

Fashion is sold difficultly in online channels because of no ability to "touch and feel". Buywell tries to ensure consistency and veracity regarding colour and texture between the virtual and real experiences. Customer Service Representatives (CSRs) give advice on the fabric type of clothes or thickness of a fabric for customers during a purchase decision using a catalogue or website. Portable racks along the walls of the customer service centre display all clothes available from current catalogues (Tate et al., 2005).

Table 2. The sub-elements of omni-channel retailing by customer service

Main Elements	Sub-Elements	Description of Sub-Elements	References
Customer Service	Customer loyalty program or cards	They offer products and services for customers individually per customer experience before, during and after sale.	Wallace et al. (2004) Rangaswamy and van Bruggen (2005) Yoon and Zhou (2011) Piotrowicz and Cuthbertson (2014) Cao (2014)
	Customer profile / forum	Customers login their account in retailer's forum to check a product rating, contact someone, ask a question and share their satisfaction or dissatisfaction.	Amit and Zott (2001) Jana (2007) Cao (2014) Piotrowicz and Cuthbertson (2014)
	Call centre	It gives service for products, purchasing, returns, and order tracking before, during and after sale.	Rangaswamy and van Bruggen (2005) Berry et al. (2010) Cao (2014)
	Online customer service	It gives service for products, purchasing, returns, and order tracking before, during and after sale, and offers real-time live chat.	Amit and Zott (2001) Tate, Hope and Coker (2005) Jana (2007) Cao (2014)
	In-store customer service	It gives service for products, purchasing, returns, and order tracking before, during and after sale.	Amit and Zott (2001) Bendoly et al. (2005) Jana (2007) Cao (2014)

2.2.3. Forward Distribution

Distribution channel makes available merchandises to be used or consumed after the production until the final user. Distribution channels management affects other marketing decisions at retailers competitively. A complexity of the omni-channel distribution is that multiple channels generate individual request flows which are discrete due to different order size, different requirements for delivery, and personalized customer expectations. Therefore, retailers structure their distribution system based on the inventory management, demand flow allocation (Ishfaq et al., 2016).

The retailers may design their distribution system based on their consumer market. Initially, they define preferences and requirements of the consumers and purchasing purposes of consumers such as economic, experimental, or social. Following, the retailers identify the extent and limitations of each channel that will be used. Finally, the retailers decide on their sales force, number and location of stores and which determinants will be used for the channel evaluations (Kotler and Keller, 2012). Omni-channel distribution serves the physical and virtual channels conveniently and supports order fulfilment, delivery and after sales services (Rudi et al., 2001).

Retailers have in transitioning from a multiple but separate channel solution to an integrated logistics system and determine how and why retailers with multiple channels develop their logistics activities into omni-channel systems from multi-channel to omni-channel logistics. Redesigning structure of logistics and optimizing cross-channel processes are important in order to build up a sustainable and integrated business (Hübner et al., 2016). Distribution of omni-channel orders is a complicated process. Offline channel distribution is made with large volume shipments moving from distribution centres. On the other hand, last mile delivery of online orders enlarges distribution network and also customers expect high-performance service (Nicholls and Watson, 2005; Fernie et al., 2010).

The forward distribution system is categorized based on the destination concepts, dispatching locations, centralization distribution centres of retailers, and integration level of retailer's distribution centres (Hübner et al., 2016).

The destination concepts of deliveries are in-store delivery, home delivery and store pickup. First, in-store delivery provides fulfilment of orders on physical stores that are served by a supplier or distribution centres of omni-channel retailing. Second, retailers ship orders from distribution centres, stores or prefer drop shipment to customer's home. Third, retailers provide store pickup for online orders. First type of it is Click and Collect. Customer online orders can be collected from brick and mortar stores. Second, if the retailers can manage real-time data access for an inventory and pickup abilities of stores, Click and Reserve can be implemented and online orders can be shipped from store inventory available (Hübner et al., 2016). These different delivery options offer different delivery speeds such as the same day, next day, two-day and different delivery times including morning and evening (Boyer and Hult, 2005).

Click and Collect belongs to mobile channel and connects with the retailer's physical store. Customer orders through a mobile channel and collects product in offline channels like a physical store or a collection point. The customer purchases merchandise at anywhere and at any time in online channels (Balasubramanian et al., 2002). If a retailer offers Click and Collect, it needs to decide on the order fulfilment location such as a physical store or an e-commerce distribution centre (Baird and Kilcourse, 2011). Click and Collect and Click and Reserve differ from pick-up services. Click and Collect offers pick-up of products purchased online in-store, whereby the product is sent from a warehouse to the store. Click and Reserve leverages store inventory for online orders. It connects the inventories of warehouses to inventories of stores. Click and Reserve increases overall availability of inventory sources that are utilized (Hübner et al., 2016). Click and Collect provides customers with flexibility because they may choose a suitable picking up location for orders. Reserve and Collect allows for reservation when customers view in online channel. Customers may pick it up later and pay for it at a physical store. Click and Collect and Reserve and Collect require integrated inventory and order management system (Deloitte, 2015).

Omni-channel retailing provides possibility for a customer to decide on a product in online channel, go into a store to look closely, order it online in store or at home and either have it delivered to their home or pick it up from store. This implementation is called Click and Collect. Thus, integration of online and offline channels provides the ability to order, return and exchange goods using physical store, customer's mobile device or in-store self-service technology presented by the retailer (Butler, 2014; Mahar et al., 2014; Piotrowicz and Cuthbertson, 2014).

The delivery options of omni-channel retailers are extended to include Click and Collect (i.e., in-store pick-up of goods delivered from warehouse inventory) and Click and Reserve (i.e., online orders are allocated from store inventory) through process integration. Due to growing customer expectations of buying and obtaining goods wherever and whenever they want, retailers can deliver goods to homes and stores at any time, while customers have a right to return products through all channels. OC retailers therefore strive to expand their delivery modes and return options (Hübner et al., 2016).

The dispatching locations are stores, distribution centres and supplier's distribution centres. For example, retailer's distribution centres provide types of delivery concepts (e.g., in-store buying, distribution shipment and click and collect) (Hübner et al., 2016). Products are picked, prepared, packed and expedited for home delivery from distribution centres (de Koster, 2002). Otherwise, products are picked, prepared, packed and expedited for home delivery from one of existing stores of the retailer (Yrjölä, 2001; Koster, 2002; Smith and Sparks, 2009).

Retailers organize omni-channel forward distribution in which stores bear a major role in fulfilment and delivery of orders. The stores are fulfilment centres and pickup locations (DHL, 2015; Ishfaq et al., 2016). Orders are picked, prepared, packed and exported in distribution center and, are delivered to stores for customers pick-up (Lee and Whang, 2001; Agatz, 2009). Otherwise orders are picked, prepared, packed and kept ready for pick-up in the store (Berman and Thelen, 2004; Agatz, 2009; Durand and Gonzalez-Félio, 2012).

Two types of distribution centres can be derived: separate channel-specific distribution centres and integrated omni-channel distribution centres. From a customer service perspective, integration covers more product scale. On the other hand, from an operational perspective, integrated distribution centres are preferable if the retailer fulfils the requirements for integration in terms of capabilities and resources. Additionally, integrated distribution centres reduce transportation costs in a Click and Collect implementation. Retailers can prefer separated distribution centres to avoid investment risks and to simplify distribution structures. However, separate channel-specific distribution centre is the initial stage of omni-channel forward distribution, whereas an integrated distribution centre that consolidates inventories is the advanced stage of omni-channel forward distribution (Hübner et al., 2016).

Omni-channel retailers may use both stores and DCs to fulfil customer orders. Retailers should select methods for order fulfilment based on the number of distribution centres they operate, number of stores they have, and inventory they need for online sales. Most retailers prefer an integrated distribution centre per the scale and volume of online sales. If the scale and volume of an online channel is not enough, retailers will prefer dedicated facilities with separate channel-specific distribution centre for omni-channel fulfilment. However, this separation results in extra cost and

a lack of synergy because of two separate pools of inventory and operational expenses. For this reason, if retailer's e-commerce grows, the retailers will shift to use of integrated distribution centre (Ishfaq et al., 2016).

Another important point is the level of centralization of omni-channel distribution centres. There are two types of distribution centres that is responsible for supplying customers or stores. The centralized distribution centres are responsible for a large part of customers or stores area. On the other hand, regional distribution centres are responsible only for a specific area of customers or stores (Hübner et al., 2016)

Regional distribution centres keep fast-moving products in their inventories. Most brick-and-mortar retailers entrust on several regional distribution centres to supply their stores from regionally distributed locations. The aim is that it provides shortened replenishment time and decreased costs for transportation (Hübner et al., 2016).

The centralized distribution centres mainly keep slow-moving products in their inventories. If all the products stored at a central distribution centre, regional distribution centres are used only as transshipment points. Therefore, the widespread type of distribution centre of omni-channel retailers is one centralized location to fulfil store demands and customer orders for each market. Most of the omni-channel retailers use regional distribution centres for store replenishment because largest omni-channel retailers have a high sales force in physical stores (Hübner et al., 2016).

In an advanced omni-channel warehousing solution, retailers, having multiple channels, prefer integrated inventory enabling flexible and demand-driven inventory allocation instead of separated inventory systems to channel. Channel-integrated logistics aim to integrate inventory and their picking procedures in one common picking zone across channels. This is more efficient type of logistics because retailers who handle orders in parallel, in a single picking zone, also use the same picking personnel for all channels. Information technologies systems, inventories and picking, organizational units need to be integrated across channels, while the range of stock keeping units are available online, as well as delivery and return modes, must be expanded to include the various options. The aim of integration is to provide communication across all channels, especially in inventory availability (Piotrowicz and Cuthbertson, 2014; Hübner et al., 2016).

Table 3. The sub-elements of omni-channel retailing by forward distribution

Main Elements	Sub-Elements	Description of Sub-Elements	References
Forward Distribution	Inventory integration	Inventory is integrated across online and offline channels for directing the customer and store.	Piotrowicz and Cuthbertson (2014) Beck and Rygl (2015) Hübner et al. (2016)
	Integrated omni-channel distribution centres (DCs)	They supply store demands and online customer orders from centralized inventory	Hübner et al. (2016)
	Centralized DCs	It is responsible for a large part or all of the customer and store orders.	Hübner et al. (2016)
	Store pick up by Click and Collect	Destination concept is store pick up by Click and Collect for online shopping	Boyer and Hult (2005) Baird and Kilcourse (2011) Butler (2014), Mahar et al. (2014) PAC (2014) Piotrowicz and Cuthbertson (2014) Beck and Rygl (2015) Hübner et al. (2016)
	Store pick up by Reserve and Collect	Destination concept is store pick up by Reserve and Collect for online shopping	Boyer and Hult (2005) Butler (2014), Mahar et al. (2014) Piotrowicz and Cuthbertson (2014) DHL (2015) Hübner et al. (2016)
	Home delivery by store shipment, drop shipment or DC's shipment	Destination concept is home delivery by store shipment, drop shipment or DC's shipment	Bailey and Rabinovich (2005) Boyer and Hult (2005) Butler (2014), Mahar et al. (2014) Piotrowicz and Cuthbertson (2014) DHL (2015) Hübner et al. (2016)
	Store dispatching location	Customers' orders are picked, prepared, packed and expedited for home delivery or store pick up from one of existing stores of the retailer.	Yrjölä (2001), De Koster (2002a) Berman and Thelen (2004) Agatz (2009) Smith and Sparks (2009) Gonzalez-Feliu (2012) DHL (2015) Hübner et al. (2016)
	Dispatching location: DCs of Retailer or supplier	Dispatching location is DCs of retailers or suppliers. It offers store shipment, DC shipment, and drop shipment.	Lee and Whang (2001) De Koster (2002a) Agatz (2009) Hübner et al. (2016)

2.2.4. Backward Distribution

The backward distribution system involves the physical flow of product from a customer to a retailer. It is categorized by the return modes and return processing locations such as return centres (Agatz et al., 2008; Hübner et al., 2016).

The brick-and-mortar retailers process return of defective or rejected products and then send to an outlet store. However, return process of omni-channel retailing is complicated because customers request to select a channel for product returns. There are two return modes. The first standard return mode is CEP (carrier, express and parcel provider) delivery which reduces both integration and process challenges across channels. Returning goods at the stores is the second return mode, regardless which channel customers ordered in. Store return mode is a more advanced and extended solution than the CEP return mode (Hübner et al., 2016).

Return processing locations include three options. First location is the distribution centres of omni-channel retailers. A dedicated area is reserved in distribution centres for returning products. Second location is the separate return centres. They are operated by the retailer or a service provider. If return process is work-intensive and distribution centre capacity is not enough, then it will be used. Final return processing location is the store (Hübner et al., 2016).

The acceptance of products returned by customers and the process of return management have become a sensitive activity for retailers. Regarding new challenges for product returns management, retailers are integrating returns, processes, information systems, inventories and performance measurement systems. The importance of managing returns within an omni-channel environment is increasing because of online sales have been rapidly growing in time (Bernon et al., 2016).

Fashion sector in retailing has higher returns level of products than that of other sectors. Key factors of an accomplished omni-channel returns management were the easy returns process, the number of return location, and minimum distance travel times. The superior fulfilment channel for online sales was found to be “Click and Collect” and “return to store” was also the prior return option for customers. Three possible different returns management processes: first option is to process the return, give a credit to the customer at the store and retain grade A stock in the store; second is to give a credit to the customer in store and return the product to a returns DC for

processing; third is to give the customer a receipt for the return in store and return the product to a returns DC for processing and customer credit (Bernon et al., 2016).

Fashion retailers such as Zara, Mango, and Macy’s provide a seamless product returns management regardless of whether the products were purchased online or offline. When the customers wish to return a product, they can give it back to any store, have it collected from home, or use any of the several drop shipment methods such as parcel lockers, parcel boxes, and car trunks at any time and at anywhere, 24/7 (DHL, 2015).

Table 4. The sub-elements of omni-channel retailing by backward distribution

Main Elements	Sub-Elements	Description of Sub-Elements	References
Backward Distribution	CEP (carrier, express and parcel provider) return mode	Return to the retailer’s distribution centre or a returns centre with CEP return mode	DHL (2015) Hübner et al. (2016)
	Store return mode	Store return mode is advanced solution for distant purchases.	Gallino and Moreno (2014) DHL (2015) Herhausen et al. (2015) Bernon, et al. (2016) Hübner et al. (2016)
	Return processing in distant DCs	Return processing location is the distant DC. Store and CEP can send the returns to the DCs.	Bernon, et al. (2016) Hübner et al. (2016)
	Return processing in Separate Return Centre	The location for processing returns is a separate return centre. Store and CEP can send the returns to return centres for further processing.	Hübner et al. (2016)
	In-store return processing	Returns can be processed and reworked directly in the store and included in the stores’ inventory.	Bernon, et al. (2016) Hübner et al. (2016)

2.2.5. Information Technologies

In today's world, one of the greatest challenges in the retail industry is the speed of technological changes and the way in which new technologies are essentially changing how people research, communicate, associate with each other, and choose goods and services. Retailers must find new ways to be relevant to tech-savvy consumers for competitive advantage, and adopting new operation for growing profitably in the future (IBM, 2015). Having a blend of "tech" and "touch" and information technologies (IT) plays an important enabling role for retailers to integrate their resources (Oh et al., 2012). Digital natives grow up through incessant online access. However, older shoppers still desire to see, feel, touch and try the products and communicate face-to-face with staff members. Therefore, customers should be able to select a channel for shopping and interaction with the retailers (Piotrowicz and Cuthbertson, 2014).

The use of several channels allows the retailer to develop long term relations with their customers. The customers do not require searching for a competitor because of synchronizing the activities of all channels through information technologies by the retailer (Rangaswamy and Van Bruggen, 2005).

Development of an omni-channel strategy is highly relevant to select the ideal channels, support them with information technologies and integrate them with one another. The analysis of customer activities across all sales channels is a challenge for the retailers. By merging processes and IT solutions across all channels, utilisation of innovative data analysis tools can achieve the 360° view of the customer. For this reason, innovative CRM and marketing solutions are needed (PAC, 2014).

The use of data analytics is on the agenda of many retailers. It is because it might be a key competition advantage for retailers as they enable real-time insights into and adaptations to customers' complicated behaviour (PAC, 2014). Retailers create databases and understand individual preferences of customers by using Customer Relationship Management (CRM) systems. It provides synchronization of the operations and logistics services. Retailers may prefer price discrimination by collected information of customer purchase history and patterns (Varadarajan and Yadav, 2002; Jeanpert and Paché, 2016).

An omni-channel retailing where the customer at the same time interacts and moves among offline and online channels needs an Order Management System (OMS). It is significant because it integrates orders and delivery channels seamlessly. The OMS processes the orders and submits a visible inventory, delivery and customer information. It assists order and returns management, tax calculations, payment processing, partial shipments, real-time inventory information of stores, drop-ship vendors, internal delivery centres, in-transit inventory and allocated stock across the organization, regardless of which channels are accessed. The OMS helps to manage store fulfilment, store shipments, store pickup for Click and Collect. The OMS increases customer service because of giving information about order details and refunds/credits (Deloitte, 2015).

The Australian retail chain Harvey Norman realized that its customers regularly check product availability in-store as online before visiting a store. Therefore, the retailer offered real-time inventory visibility and product availability of its all physical stores in online by using integrated OMS (DHL, 2015).

Integration of marketing and supply chain management in terms of physical and information flows ensures product availability across channels via a pull-order system from the product manufacturers (Piotrowicz and Cuthbertson, 2014). The ERP system harmonizes stock management across channels and made supply chain flexible (PAC, 2014). In the initial stage, the ERP may be separate and channel-specific, but advanced omni-channel solutions are based on a joint, cross-channel ERP system with real time access (Hübner et al., 2016).

The changes of retailing are driven by new technologies related with mobile devices, in-store and software such as mobile apps and payments, e-wallets, e-coupons, location-based services, big data and cloud computing, intelligent self-service kiosks, vending machines and dynamic menus, QR codes. At the same time, retailers remove barriers between channels and, offer services such as Click and Collect, order in-store & deliver home, showrooms, and other integrated online and offline shopping activities (Piotrowicz and Cuthbertson, 2014).

All these technologies interact with the customer's shopping experience and focus on operational improvement. Also they need to be fully integrated between channels (Piotrowicz and Cuthbertson, 2014). Some retailers such as Gap, Sears, Staples have

in-store kiosks to help customers order products not available in stores or get detailed information (Pentina and Hasty, 2009). An integrated product cataloguing system between online and offline channels allows customers to give their own order rapidly based on the catalogue numbers (Saeed et al., 2003). Retailers communicate with their customers and track their behaviour through in-store Wi-Fi access and customer's mobile devices (Verhoef et al., 2015).

Location-based services is based on the spatial dimension and the choice of retailer. When customers search for product information, this system directs consumers to the retailer online. So, the retailer has control over its customers. The customer chooses a specific retailer that extends the relationship and product accessibility to provide increasingly more benefits (Rudolph and Emrich, 2009). Beacons technology is one of the located-based systems. Retailers use it to see that customers enter the store; it also detects nearby smartphones and gives the sales staff information regarding customer's purchasing behaviour (DHL, 2015). Also, when customers are near the stores, they automatically receive SMS, MMS or mail regarding promotions or discounts of retailers. Some retailers have beacon Bluetooth devices in stores that detect shoppers and automatically interact with them through personalised messages to their mobiles. Beacons also gather shopper data, are a bridge between the physical locations and the digital experiences that allow developers and businesses to interact with consumers (Ring, 2015).

New digital sales channels demand investment in web-shop solution, mobile apps, mobile payment solution and networking. In the omni-channel retailing, barrier between the offline and online is removed as mobile devices are used in-store. Some retail's online websites are still not designed nor optimized for mobile devices. Customers are willing to use their own device to search, look for cheaper options, compare products, and ask for advice (Piotrowicz and Cuthbertson, 2014).

The mobile technology combines access, personalized marketing, and product information so it provides new marketing methods (Nysveen et al., 2005). Customers gather information with mobile applications. Retailers can personalize advertisements based on the customer's behaviour, and mobile devices encourage the spread of information across consumers (Rudolph and Emrich, 2009).

Mobile technologies and their availability in stores such as mobile applications, in-store kiosks, and free in-store Wi-Fi allow customers access to the enlarged product range and information, improving their shopping experience. For instance, customers can use in-store kiosks or they can serve themselves using their mobile devices via mobile application, which allows them to scan the quick response (QR) code of the products displayed in-store, find more detailed information (Cao, 2014). Quick Response Code provides a way to access a retailer's website more quickly than entering a URL manually. QR codes and barcode scanning through mobile online access have made possible looking for cheaper options while shopping in-store and, also are used for commercial tracking, product and loyalty marketing, in-store product labelling and storing personal information (Piotrowicz and Cuthbertson, 2014).

By emergence of mobile and e-commerce, retailers need new payment methods to enable suitable operations in these channels (Ondrus and Pigneur, 2006). Mobile payment is transfer of money in return for goods or services in which a mobile device enables execution and confirmation of payment such as bank accounts, debit cards, and credit cards (Mallat, 2007; Raina, 2014). The volume of worldwide mobile payments is estimated to grow from US\$ 163.1 billion in 2012 to US\$ 721.4 billion in 2017 (Statista, 2015). Mobile applications and payment offer innovative opportunities such as endless aisle, Click and Collect and mobile wallet and integrated loyalty platforms (Taylor, 2016).

Data sets grow by mobile devices, aerial sensory technologies, remote sensing, software logs, cameras, microphones, radio-frequency identification readers, wireless sensor networks. Big data is collected data from social media, web browsing patterns, and existing customer records. It predicts trends, optimizes pricing and promotions, and monitor real-time analytics and results. Big Data includes all forms of enterprise data like customer loyalty data, purchase history, demographic data, research data. Big Data techniques cover statistics, data mining, machine learning, neural networks, social network analysis, signal processing, pattern recognition, optimization methods and visualization approaches (Philip Chen and Zhang, 2014; IBM, 2015).

Big Data are high-volume, high-velocity, and/or high-variety information assets that need new processing form to enhance decision making, discover and optimize process (Gartner, 2012). There are around 267 million operations per day in Wal-Mart's 6000

stores worldwide. For increasing competitive advantages in retail, Wal-Mart recently cooperated with Hewlett Packard to build a data warehouse which has a capability to store 4 petabytes of data, tracking every purchase record from their point-of-sale terminals. Thus, retailers successfully improve their pricing strategies and advertising campaigns by taking advantage of huge volume of data. Big data also offers opportunities, better customer service, enhanced customer experience, improved customer satisfaction, identifying new markets, increase sales and margins, increased market share, increasing operational efficiency, reduced operation costs, and informing strategic direction (Philip Chen and Zhang, 2014).

Big Data could shed light on emerging consumer and product trends, the management of operational resources, and forecasting short- and long-term demand more completely. Cloud computing is a tool for storing Big Data. Cloud computing makes it possible to cheaply upgrade a store, back office and omni-channel infrastructures, to serve the purpose demands of customers by the growing technology. Computing, software and services are rapidly becoming one of the most important elements of retail IT strategy (IBM, 2015). Cloud computing services offer retailers an omni-channel platform, information repository, and solution modules. For around 70% of the retailers examined, the cloud represents an option for the technical implementation of an omni-channel strategy (PAC, 2014). Cloud enables a store to upgrade cheaply, back office and omni-channel infrastructures, to support the growing technology, demands of customers and for the future.

Radio frequency identification (RFID) technology is a very popular technology in business operations, being widely used in applications including inventory management, transportation, manufacturing and production, retailing, toll payments, supply chain solutions. RFID requires the use of a miniature chip transmitter, with a radio frequency antenna and a reader for tracking products. For example, Wal-Mart has used this technology to optimize its supply chain and integrate its internal logistics operations with various vendors, and to track and analyse consumer behaviour by applying it into the membership cards, in the shopping baskets, or the product packaging chips (Yoon and Zhou, 2011). The fashion and apparel retail sector manage supply chain efficiently through the deployment of Radio Frequency Identification (RFID) technique at item – level (Loebbecke et al., 2008). RFID enables new paradigms and business models because it automates processes, increases their

productivity, leads to higher process accuracies and provides information collection from the field in real time. This information also can be made available throughout the entire value chain (Al-Kassab et al., 2009).

Burberry's store use Radio identification technology (RFID) tags which are embedded into products. This store enables customers to view multimedia content via 100 digital mirrors and 500 loudspeakers. When customers hold a product near one of the mirrors, it displays information about it (DHL, 2015).

Fashion retailer Inditex SA implements RFID technology throughout its Zara store operations to improve stock accuracy and store information regarding the products. They can emit this data to a scanner when prompted. Inditex puts the chips inside its garment's plastic security tags, an innovation that empowers the fashion chain to re-use them after the tags are removed during checkout. More than 1,000 Zara stores start to use this technology (Bjork, 2014).

Table 5. The sub-elements of omni-channel retailing by information technologies

Main Elements	Sub-Elements	Description of Sub-Elements	References
Information Technologies (IT)	System Integration	Enterprise resource planning (ERP), order management system (OMS), warehouse management system (WMS)	PAC (2014), Deloitte (2015) Piotrowicz and Cuthbertson (2014), Hübner et al. (2016)
	Customer relationship management (CRM)	Customer database and understanding individual preferences of customers	Varadarajan and Yadav (2002), Neslin et al. (2006) PAC (2014), Tambo (2015) Jeanpert and Paché (2016)
	Mobile Application	Optimized online store for mobile devices	Mallat (2007), PAC (2014) Piotrowicz and Cuthbertson (2014), Taylor (2016)
	Location-based technology	When customers are near the stores, they receive SMS, MMS or mail. It gathers shopper data and is a bridge between offline and online channels	Rudolph and Emrich (2009) Piotrowicz and Cuthbertson (2014) DHL (2015)
	Big data technologies	It collects very huge data sets such as customer loyalty data, demographic data, research data and purchase history.	PAC (2014) Piotrowicz and Cuthbertson (2014) Philip Chen and Zhang (2014), IBM (2015)
	Cloud computing technologies	It delivers IT and business processes as digital services. It enables omni-channel infrastructures.	PAC (2014) Piotrowicz and Cuthbertson (2014), IBM (2015)
	Intelligent self-service kiosks and checkouts	Customers place orders for out-of-stock items using self-service kiosks and, process their own purchases via self-service checkouts.	Saeed et al. (2003) Pentina and Hasty (2009) Cao (2014), PAC (2014) Piotrowicz and Cuthbertson (2014)
	QR codes and barcodes	A way to access online store more quickly than entering a URL manually. It can also be used in-store product labelling.	Cao (2014), PAC (2014) Piotrowicz and Cuthbertson (2014)
	In-store Wi-Fi access	Customers can easily use their internet connected devices.	Saeed et al. (2003) Pentina and Hasty (2009) Cao (2014) Piotrowicz and Cuthbertson (2014) Verhoef et al. (2015)
RFID (Radio Frequency Identification)	RFID collects data from product tags and barcodes and match those items with customer profiles in the store.	Loebbecke et al. (2008) Al-Kassab et al. (2009) Yoon and Zhou (2011) Bjork (2014) Piotrowicz and Cuthbertson (2014)	

2.3. Omni-channel Retailing in Fashion Industry

In today's fashion industry, the range of products change frequently in order to respond to consumers' demands for the latest trends in terms of fabric, colour, style and affordable prices (Wallace and Choi 2011). The full range of products in stores are available during relatively short (6–8 week) selling seasons (Mason-Jones et al., 2000). For this reason, fashion retailers require from their suppliers to provide more frequent and timely product changes for the latest fashion trends (Burnes and Towers 2016).

On the other hand, the ultimate objective of fashion industry is customer satisfaction. If fashion retailers understand customers' requirements and solve their problems, the customers will be satisfied. Satisfied customers have high loyalty, and these customers increase repeated purchase intention, so the retailer's market share and return on investment affect (Bolton and Drew, 1991). In the purchasing process, fashion consumers expect a consistent experience across all the channels. Technology blurs the boundaries between the offline and online channels (Contreras 2014). Therefore, fashion retailers have started to adopt omni-channel strategy. They have lots of implementation in terms of omni-channel according to their customer's expectations. For example, Louis Vuitton and J.C. Penney provide self-service or assisted online terminals in their physical stores to integrate online features into offline channels (Herhausen et al., 2015).

The fashion industry has surprisingly become a fast-growing segment of e-commerce. Some popular fashion retailers try to offer omni-channel experience to their customers. Omni-channel retailing become a popular strategy in the fashion industry at the beginning of the 21st century as driven by the consumer requirements, the advances in production and information technology, and the increasingly competitive market situation (Apegyei and Otieno, 2007; Mendelson and Parlaktürk, 2008; Merle et al., 2008; Franke et al., 2009). The omni-channel approach is vital for fashion retailers because they have become important global players. The fashion retailers were the fastest-growing and most profitable product sector in 2013 and 2014. Most companies are relatively small, with average retail revenue of US\$ 9.1 billion, they are nevertheless the most global. Eighty-five percent (41 of the first 48 in the List of Top 250 retailers are fashion retailers) operated internationally in 2014.

CHAPTER-3

SEMI-STRUCTURED INTERVIEW

3.1. Semi-structured Interviews

The list of Turkey's top 100 retail companies has been published in Perapost Magazine. This research is based on the balance sheets of 2014. It was prepared in cooperation with Perapost Magazine and CRIF Research Company by using company's own declarations or the financial statements on their website for companies that are not traded in the BIST (Borsa Istanbul). If the company trades in the BIST, they also will compile publicly announced financial data. According to this list, the biggest retail industry in Turkey is grocery. One company in grocery retail industry offers online channels to its customer. To implement and examine omni-channel retailing, both offline and online channels must be offered to customers by retailers. The second biggest retail industry is fashion (Retailer, 2017). Therefore, the fashion industry was selected to analyse omni-channel retailing in Turkey.

The target fashion retailers had to fulfil four criteria: (1) implementing omni-channel strategy, (2) operating in fashion (ready-to-wear, luxury, denim or apparel) industry, (3) operating in both physical and online store for minimum one year, and (4) of a significant size in terms of sales and number of physical stores (i.e., at least TL 200 million annual sales and at least 50 physical store in Turkey). The challenges for integrating on- and offline channels are especially relevant for large fashion retailers with established networks and economies of scale. Therefore, annual sales and number of physical stores were used as criteria.

The largest 13 fashion retailers were invited to this research. Three of them were foreign fashion retailers from Europe. However, they did not accept to participate in this research. Two of them were Turkish fashion retailers that did not respond to invitation. Eight leading fashion retailers from Turkey agreed to participate in this research.

The semi-structured interviews were conducted with the leading fashion retailers from Turkey regarding the main elements and sub-elements of omni-channel retailing. The main elements and sub-elements have been evaluated with the leading fashion retailers. Open coding, axial coding and selective coding methods were used to analyse the semi-structured interviews.

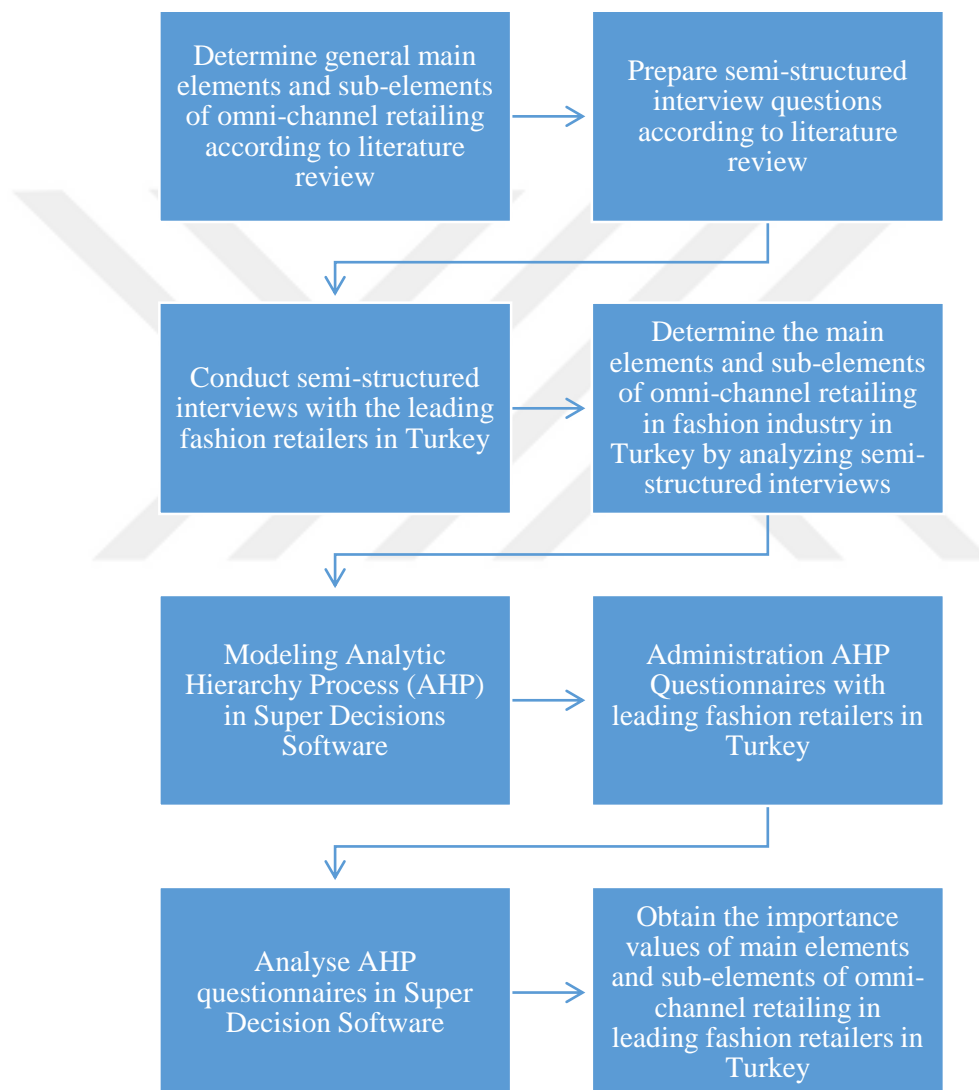


Figure 1. Steps of the Research Process

In a typical semi-structured interview, the researcher has a list of questions. Interview questions could be asked at any time to allow the conversation to flow naturally (Lindlof and Taylor, 2011). Also, the interviewer can probe answers, pursuing a line of discussion opened by the interviewee, and a dialogue can ensue. In general, the interviewer is interested in the content of the interview, how the interviewee understands the topic(s) under discussion (Edwards and Holland, 2013). It allows open response in the interviewees' own words rather than a 'yes/no' type answer. When conducting semi-structured interviews, it is possible to take notes or to audio/video record during the discussion (Miles and Gilbert, 2005).

The semi-structured interviews collect data and systematize structures without formulating inhibitive hypotheses in advance. Data was gained in a repetitive dialog between the interviewer and the reflective interviewee (Corley and Gioia, 2011). Semi-structured interviews explore more complex research questions and are a more appropriate format for discussing sensitive topics (Miles and Gilbert, 2005).

Primary data was collected through semi-structured interviews with leading fashion retailers. The eight semi-structured interviews were conducted in February and March. The positions of interviewees included e-commerce director, omni-channel project manager, e-commerce manager or project manager. The selection of managers was based on the fact that they are experienced in omni-channel projects, i.e., they have been directly involved in the project design and execution of omni-channel strategy. The interviews lasted around 45 minutes and audio typing was used for recording each interview. Callnote Audio recorder was used to record the interviews.

The content of the semi-structure interviews was determined based on the main elements and sub-elements of omni-channel retailing. The purpose of semi-structured interviews is to collect data on what sub-elements of omni-channel retailing are and how they can be categorized into main elements.

The content of the semi-structure interviews is predetermined as follows;

- Percentage of offline and online channels in the annual turnover
- Differences between the multi-channel and omni-channel retailing
- Exemplary retailers
- Omni-channel implementations
- Integration of product range, price, promotion and coupons, and customer data

- Customer service implementations
- Forward distribution management
- Backward distribution management
- Information technologies infrastructures

3.1.1. Transcribing

Transcribing is a part of data management and analysis. In this study, Microsoft Word and Excel were used to analyse and to manage the interview data as a word processor. The interviews were transcript in Microsoft Word. Then, the related parts of interviews were assigned a specific code that is based on the main elements and sub-elements in Excel. In the findings section, relevant information with sub-elements of omni-channel retailing was placed based on the leading fashion retailers in a matrix.

3.1.2. Coding

Interview questions allow the interviewees to tell about important information and related experiences with the research topic. The researcher reveals such experiences important to the interviewee by assigning a conceptual label, known as a code (Strauss and Corbin, 1998). Several codes can be grouped into more abstract categories which will eventually form the basis for the developing theory (Gorra, 2007).

Coding is the initiative of data analysis, as it helps to move away from statements to more abstract interpretations of the interview data (Charmaz 2006). Some codes or concepts will share the same or similar characteristics and can be pulled together into more abstract categories, which can typically be interlinked and build the basis for a theory (Gorra, 2007).

In open coding process of breaking down, examining, comparing, conceptualising and categorising data are used. In this sense, open coding involves discovering categories, developing categories and labelling phenomena. In labelling phenomena, asking questions about notes is another feature of open coding (Charmaz 2006).

In this study, questions were asked to interviewee about omni-channel retailing related to the selected determinants from literature review such as sales and marketing, customer service, forward distribution, backward distribution and information technologies. Further, labelling phenomena were named according to interviewee's answers.

Interviewee's answers provide the codes related to the omni-channel retailing. In this sense, retailer's activities, implementations, and processes are important since they help us to develop codes. Further, post-it notes for each category is a helpful method because it provides to see overall categories since colouring of each category is important to see generalized codes.

The next step of coding is axial coding in which data assembled in new ways after open coding, by making connections between categories (Gorra, 2007). Further, at the end categories now represent our "phenomena". The axial coding includes strategies such as actions and implementations.

Consequently, the last step of coding is selective coding which is selecting the core category and validity of the coding is substantial (Gorra, 2007). Furthermore, the final step of selective coding is validating the theory against the data.

3.1.3. Validity

Reliability and validity are significant properties of semi-structured interviews. Reliability assessment contains specific time for pilot-testing the interview schedule, during interviewer training, and periodically throughout use of interview respondents and reliability of instrument itself. Validity of interview information is a complicated issue and invalidity of interview contains lack of meaning, differences in situations, respondents modifying their responses to fit their responses and fit their perceptions of social requirements Also, validity can be checked by collecting information external to the interview situation to check the accuracy of responses (Waltz et. al., 2010).

The logical validity is that coding system must be internally consistent and clearly articulated and also investigator asks knowledgeable observers to evaluate whether coding is coherent and comprehensive (Lazarsfeld and Barton, 1969). The construct validity in which coding system should show relationships to other observable

variables predicted from the researcher's theoretical network. The representational validity is defined as ensemble of meaningful constructs or message functions identified by the scheme, which must be consistent with subjects' shared interpretations (Poole and Folger, 1981a).

One major method was used to ensure reliability and validity of our data analysis. Triangulation is one of the most persuasive and powerful techniques for ensuring the reliability and validity of qualitative research. The researcher seeks the same information through different methods or different information sources and if they find the same results, this is evidence that the results are probably credible. Triangulation for qualitative methods such as participant observation, this can be reflected in "multiple comparison groups" (Glaser and Strauss, 1965a) to develop more confidence in the emergent theory. In short, 'within-method' triangulation essentially involves cross-checking for internal consistency or reliability while "between -method" triangulation tests the degree of external validity (Jick, 1979).

During the semi-structured interviews, open-ended questions were asked to eight interviewees about omni-channel retailing. Transcribes of the interviews were checked. The emerging findings were triangulated with minimum three interviewees to gain confidence that the emergent theoretical framework was sensible as well as realistic and validated by those in charge.

Table 6. Open codes, axial codes and selective code

Open codes	Axial codes	Selective code
Call centres	Channels and touch points	Main elements and sub-elements of omni-channel retailing
E-mail		
Mobile app		
Online store		
Physical store		
Private shopping site		
Social media	Data integration	
Centralized inventory		
Coupon and promotion integration		
Customer data integration		
Customer loyalty cards		
Price consistency	Order fulfilment and delivery	
Same assortment		
Centralized distribution centre(DC)		
Click and collect		
Home delivery		
Integrated omni-channel DC		
Reserve and collect	Returns management	
Store fulfilment		
Return mode both via CEP (carrier, express and parcel provider) and physical store	Front-end technologies	
Return process both in physical store and DC		
In-store free Wi-Fi		
Hand terminals		
Ibeacon		
Quick Response (QR) codes	Back-end technologies	
Self-service kiosks		
Customer relationship management (CRM)		
Integrated point of sale (POS) system		
Order management system (OMS)		
Radio frequency identification (RFID)		
Warehouse management system		

3.2. Findings of Semi-Structured Interview

Table 7 below gives information on eight leading fashion retailers in Turkey. This table was created based on the findings of semi-structured interviews.

Table 7. Brief information of the leading fashion retailers in Turkey

Retailers	Market Information	Annual turnover rates of channels	Interview Duration	Position
Retailer A	Market leader in fashion industry	A rate of 13.5 % through e-commerce channels A rate of 40% for e-commerce channels through mobile channel	45 minutes	E-Commerce Director
Retailer B	The third largest fashion retailer	A rate of 15 % through omni-channel retailing (click & collect, reserve & collect in-store kiosks)	45 minutes	Omni-channel Trading and Operations Manager
Retailer C	The second largest fashion retailer	A rate of 4% through e-commerce channels	70 minutes	E-Commerce Operations and Logistics Manager
Retailer D	One of the top fashion retailers	A rate of 2.5 % through e-commerce channels	45 minutes	Strategic Marketing Manager
Retailer E	One of the top three retailers in denim market	A rate of 3 % through e-commerce channels	65 minutes	Project Manager
Retailer F	The biggest department store	A rate of 8-9% through e-commerce channels	70 minutes	Omni-Channel Project Manager
Retailer G	Market leader in luxury fashion industry	A rate of 7% through e-commerce channels	45 minutes	E-Commerce Director
Retailer K	Market leader in menswear	A rate of 3 % through e-commerce channels	45 minutes	E-commerce and CRM Manager

3.2.1. Channels and Touch Points

The occurrence of omni-channel retailing has required retailers to take a more proactive approach to engage customers. In the digitalized world, knowledgeable shoppers do not distinguish between channels regarding technology (Van Bruggen et al., 2010; Deloitte 2016). Because of the multiple channels and customer touch points,

omni-channel retailing aims at uninterrupted channel integration. The main objective in omni-channel retailing is to integrate offline and online customer touch points to make it possible for customers to experience the brand in a unified way all of them (Rigby 2011; Bellaiche et al., 2013).

Channels and touch points are retailer's points of customer contact and interaction from start to finish of shopping experience. The omni-channel companies effectively operate as a single channel, orchestrating continuously customer shopping experiences across all channels and touch points. The customer shopping experience should be seamless, consistent and personalized, so that customers can interact whenever, wherever and however they want across all channels. The customer views the company as being one company and expects that the company will likewise have one view of them as a customer across all channels. The customer expects that there is no channel boundaries, physical and digital channels will be integrated. When customers desire to purchase something, renew a service, or resolve a problem, their preferred channels now include "all of the above"—physical stores, online store, social media and call centers (Accenture, 2015).

The findings of semi-structured interviews support the literature review. Both of them show that channels and touch points are the main elements of omni-channel retailing. The leading fashion retailers in Turkey use call center, physical store, social media, mobile app., online store, e-mail and private shopping site as channels and touch points. The several managers below said their channel and customer touch points as follows;

Our customers can reach us through our physical stores, our online site, our mobile application, our call center, our social media platforms and e-mail. While we use social media for promotion, customer information, advertising and customer feedback, on the other hand we sell our products by other channels. In addition, at the end of the season, the rest of our products are sold in private shopping sites. Everything in the omni-channel retailing depends on the customer's preference. The channel border is not set by the retailer. The customer makes his / her transactions by choosing his / her own operations such as purchasing, delivery, return, exchange.

Thus, we provide service for every channel that customers can use (Retailer B).

We use e-mail and social media platforms for providing information on product and campaign, public relations, and advertisement. We sell our products on our online site and at physical stores. In our mobile app, our customers can review our products in all seasons. We also sell season-end products in private shopping sites. We have a call centre. There is a separate team at the centre for online / offline channels. Every channel and touch point that reaches the consumer in omni-channel is a part of the same ecosystem, and the systems used must talk to each other and provide information flow (Retailer D).

While selling through physical stores, mobile application, online site and private shopping site, on the other hand, we use social media platforms for promotions and customer relationship management purposes. Our customer can also reach us through a call centre and e-mail. They cannot purchase anything by phone, mail and social media but they can report their complaints and feedbacks about purchasing, order tracking, returns and exchange. In the physical store, if we do not accept returns or change the products, we will sell it on the online site or mobile application. We would be conducting multi-channel operation. If there is no problem regarding operational pass-through between the channels, we can call it omni-channel (Retailer A).

3.2.2. Data Integration

The goal of omni-channel retailing is to provide a seamless shopping experience for the consumers without channel border. This is possible through information and data flow between the applications and systems that support each channel. The well-integrated multiple channel strategy involves product or service consistency across channels, integrated promotions and information system that shares customer, price and inventory data across channels, a store pickup possibility of online orders (Berman and Thelen, 2004). Five key challenges for retailers are data integration across

channels, coordination of channel strategies, understanding customer behaviour, channel evaluation and, allocating resources across channels (Neslin et al., 2006). The know-how requirements for integrated multiple channel retailing are data integration, organizational structure, consumer analytics, evaluation and performance metrics (Zhang et al., 2010). Customer data integration for customer across channels provides access during each stage of the decision process. Data integration enables managers to understand consumer behaviour and evaluate channel performance (Neslin et al., 2006).

In omni-channel retailing data integration includes same assortment, price consistency, centralized inventory, coupon and promotion integration, customer data integration across all channels and customer loyalty card for data collection. The findings of semi-structured interviews support the literature review. They show that data integration is the main element of omni-channel retailing. The several managers below explain data integration as follows;

Omni-channel retailer should centralize coordination of product and information flow between channels. We follow customer habits and expenditures with customer loyalty program. It provides historical data regarding customer's shopping. We prepare personal campaigns and plans by analysing past trends. The main principle is to follow customers' shopping habits and determine their shopping potential. In my opinion, omni-channel retailers should use customer loyalty cards or programs, and the name could be anything. We first focus on the channel variety, then same assortment and centralized inventory across channels. We get more sales as we integrate more data. Data involves information on the product, price, customer, coupon, and inventory. The same assortment is very important. We integrate customer data into both online and offline channels. Our prices are same for all channels, and also some promotions and coupons are available for both online and offline channels with separate online and offline-specific campaigns and discount coupons (Retailer F).

It is essential for omni-channel retailing that data flows seamlessly between the channels and that all data are integrated into the online and

offline channels. There should be same assortment and centralized inventory in the online and offline channels. Furthermore, retailer needs to provide price integration. If you keep prices low in the online channel, you cannot sell anything in the offline channel. Customer loyalty cards offer communication with customers. If we do not remind ourselves to customer, we might lose our customers. According to customer's history data, we can offer customer-based discounts and services. Customer loyalty card is very beneficial but if only we analysis our customer's data (Retailer C).

The meaning of the term "omni" is "integrated", so serving same shopping experience to each customer on each channel and removing the borders between channels. The company does not allow the customer to make an online store, a physical store or mobile app distinction. Thus, channel signalization can be successful through data integration and removing borders. If customers know they will get all kinds of services from the channel they want, then it means that omni-channel strategy is implemented. Data integration should cover same assortment, price consistency, customer data integration, centralized inventory, and coupon integration across channels. We have focused on the same assortment and centralized inventory firstly, at the same time customer data are integrated through customer loyalty card (Retailer K).

3.2.3. Order Fulfilment and Delivery

Omni-channel distribution serves the physical and virtual channels conveniently and supports order fulfilment, delivery and after sales services (Rudi et al., 2001). Integrated order fulfilment supports that customers may choose a channel to complete their purchases. Also, they may order products in the online channel and then pick them up at the nearest stores. Their coupons may be redeemed either online or offline channel (Wallace et al., 2004).

The customer purchases a product at anywhere and at any time in the online channels (Balasubramanian et al., 2002). If a retailer offers Click and Collect, it will need to decide order fulfilment location such as a physical store or an e-commerce distribution

centre (Baird and Kilcourse, 2011). Click and Collect and Click and Reserve differ from pick-up services. Click and Collect offers pick-up of products bought online in-store, whereby the product is sent from a warehouse to the store. Click and Reserve leverages store inventory for online orders. It connects the inventories of warehouses to inventories of stores. Click and Reserve increases overall availability of inventory sources are utilized (Hübner et al., 2016).

Omni-channel retailers may use both stores and DCs to fulfil customer orders. Retailers should select order fulfilment methods based on the number of distribution centres they operate, number of stores they have, and inventory they need for online sales. Most retailers prefer an integrated distribution centre as per the scale and volume of online sales. If the scale and volume of online channel is not enough, retailers will prefer dedicated facilities with separate channel-specific distribution centre for omni-channel fulfilment. However, this separation results in extra cost and a lack of synergy because of two separate pool of inventory and operational expenses. For this reason, if retailer's e-commerce grows, retailers will shift to use of integrated distribution centre (Ishfaq et al., 2016).

Omni-channel retail requires more than only efficient order fulfilment. Omni-channel strategy forces physical stores to become both order fulfilment and order delivery centres, in addition to all their traditional activities. The findings of semi-structured interviews support the literature review. They show that order fulfilment and delivery is the main element of omni-channel retailing. The order fulfilment and delivery involves in-store pickup, click and collect, reserve and collect, ship from store, ship to store, and home delivery activities. The several managers below explain order fulfilment and delivery as follows;

We have the goal of keeping the product in one spot and integrating all the channels of the group companies and managing the product in one spot. One of the biggest developments in the last 2 years is the Click & Collect application. So, customer can complete offline shopping starting from online. We do not keep all our products in the physical store or distribution centre. If there are three Prada shoes in company stock, they are displayed in the physical store and they will be shipped from the store if they are ordered online. Therefore, we focus on the order fulfilment both in the

physical store and distribution centre. We have integrated omni-channel distribution centre because we did not separate stock of online and offline channels. The distribution centre is centralized for all Turkey orders (Retailer F).

The distribution of orders to our customers is in the form of home delivery, click & collect and reserve & collect. Most fashion retailers in Turkey ship their products from separate-channel online distribution centres for online orders. Our online orders can be shipped both from our integrated omni-channel distribution centres and from our physical stores. Customers can view the product stocks of the physical stores in the online channels, reserve this product for 48 hours, and go and shop at the physical store. The online and offline stocks are integrated and we can track whether the customer has bought the product or not. There is integrated omni-channel distribution centre in Cerkezkoy, which is connected to Logistics Directorate. There is inventory integration between the online and offline channels (Retailer B).

The orders from online channels are distributed from our centralized distribution centre if the customer selects home delivery. However, the stocks of online and offline channels are separate in distribution centre. Our customers can take their orders from the nearest store and ask them to send it to their homes free of charge. The stock of our physical stores has not been sold in online channels but customers can see their stocks online. We have launched click and collect in the past months (Retailer A).

3.2.4. Returns Management

The acceptance of customer product returns and the processing of return management have become a sensitive activity for retailers. For new challenges of returns management, retailers integrate returns, processes, information systems, inventories and performance measurement systems. The importance of managing returns within an omni-channel strategy is increasing because the online sales have been rapidly growing in time (Bernon et al., 2016).

The return management of omni-channel retailing is complicated because customers demand to select a channel for product returns. There are two return modes. The first standard return mode is CEP (carrier, express and parcel provider) delivery which reduces both integration and process challenges across channels. Returning goods at the stores is the second return mode, regardless which channel customers ordered in. Store return mode is more advanced and extended solution than CEP return mode (Hübner et al., 2016).

Return processing locations include three options. First location is the distribution centres of omni-channel retailers. A dedicated area is reserved in the distribution centres for returning products. Second location is the separate return centres. They are operated by the retailer or a service provider. If return process is work-intensive and distribution centre capacity is not enough, it will be used. Final return processing location is the store (Hübner et al., 2016).

Fashion industry in retailing has higher returns level of products than other industries. Key factors of an accomplished omni-channel returns management were the easy returns process, the number of return locations, and minimum distance travel times. The superior fulfilment channel for online sales was found to be “Click and Collect” and “return to store” was also the prior return option for customers (Bernon et al., 2016).

In omni-channel strategy, the more successful retailers are highly likely to be offering free returns and wide return options of the product for more satisfied customers. Shoppers wish to be able to return their purchase through different channels whether that means returning the product to a physical store or shipping it back to a distribution centre. The findings of semi-structured interviews support the literature review. They show that returns management is the main element of omni-channel retailing. The several managers below explain returns management as follows;

Within 30 days, customers may return or change a product to the physical store with the invoice. We send the returns to our distribution centre in Esenyurt if we cannot decide to sell it again in the physical store. If the return is season product or can be sold again, it can be re-stocked in the

physical store. Our customers may also send returns to our distribution centre with free shipping (Retailer E).

The products purchased from online channels can be returned to the physical store, or free of charge by courier to the distribution centre. The products purchased from the physical store can be returned only to the stores. If the product is in the season and does not have a quality defect, it can be re-stocked to the physical store (Retailer G).

The customers may return the product to the physical store, but after we receive the product at the distribution centre, then the return process can be started systematically. Customer shopping channel does not matter. We do not reflect our problems to the customers in relation to the stock and accounting that cause us difficulty. If the product is purchased from the online store, the product will be re-stocked to online store after the quality control is performed. If the product is purchased from the physical store, it will be re-stocked to the physical store. Customers can also return to our distribution centre with free cargo (Retailer K).

3.2.5. Front-end Technologies

The changes of retailing are driven by new technologies related to the mobile devices, in-store and software such as mobile apps and payments, location-based services, intelligent self-service kiosks, vending machines and dynamic menus, and QR codes. All these technologies interact with the customer shopping experience and focus on the operational improvement. They also need to be fully integrated between channels (Piotrowicz and Cuthbertson, 2014). Retailers communicate with their customers and track their behaviour through in-store Wi-Fi access and customer's mobile devices (Verhoef et al., 2015).

Mobile technologies and their availability in stores such as mobile applications, in-store kiosks, and free in-store Wi-Fi allow customers to access to the enlarged product range and information, thus improving their shopping experience. For instance, customers can use in-store kiosks or they can serve themselves using their mobile

devices via mobile application, which allows them to scan the quick response (QR) code of the products displayed in-store, find more detailed information (Cao, 2014).

New digital sales channels demand investment in web-shop solution, mobile apps, mobile payment solution and networking. In the omni-channel retailing, barrier between the offline and online is removed as mobile devices are used in stores. Some retail's online websites are still not designed nor optimized for mobile devices. Customers are willing to use their own device to search, look for cheaper options, compare products, and ask for advice (Piotrowicz and Cuthbertson, 2014).

The foundation of providing an omni-channel shopping experience starts with a retailer's front-end technologies. The ability to submit an omni-channel shopping experience rests on having a single commerce platform that unifies front-end and back-end technologies, and provides a centralized order management and inventory, and integrated customer data. The front-end technologies provide customer interactions and a competitive advantage from perspective of customer experience. Therefore, retailers have started to invest in front-end technologies such as hand terminals, self-service kiosks, ibeacon, in-store free Wi-Fi and QR codes. The several managers below explain front-end technologies as follows;

Through ibeacon technology, omni-channel retailers send SMS, MMS and email regarding advertisements and discounts to their customers when the customers are near the physical stores. I think that QR codes is the best application of omni-channel retailing that allows customers to switch between channels. How can you integrate online and offline channels if you do not have free Wi-Fi in your stores? Apart from this, employees can order products that are stock out in physical store by means of hand terminals for customers. Self-service kiosks are used for online operations in physical stores such as purchasing a product, placing an order, mobile check-out systems, and online shopping experience while in-store and reserve the items (Retailer D).

Customers can research products, compare details, check ratings and reviews before making a purchase through in-store free Wi-Fi that integrates offline and online channels. Hand terminals provide in-store

ordering system. Ibeacon is a bridge between the physical stores and the digital channels that allow retailers to interact with consumers. Quick Response Code provides a way to access a retailer's website more quickly than entering manually. Self-Service Kiosks present online shopping experiences in physical store (Retailer F).

The customer can access the product online using the QR code on the product. If customers want to purchase through the website at physical stores, self-service kiosks can be used. Beacons interact with customers through personalised messages regarding promotions or discounts of the retailers to their mobiles devices. Customers can use their mobile or tablet devices without any frustrating connection issues through in-store free Wi-Fi (Retailer B).

3.2.6. Back-end Technologies

The back-end technologies transfer data to all channels, ensuring that accurate information across all customer touch points is delivered in real-time, creating efficiencies and opportunities to improve the customer shopping experience. By merging processes and IT solutions across all channels, utilisation of innovative data analysis tools can achieve the 360° view of the customer (PAC, 2014). Inventory management, customer relationship management and order management are the bedrock of omni-channel retailing.

The back-end technologies of omni-channel retailing synchronize inventory and consolidate data across multiple channels. The radio frequency identification (RFID) technology is a very popular technology in business operations, being widely used in applications including inventory management, transportation, manufacturing and production, retailing, toll payments, and supply chain solutions (Yoon and Zhou, 2011). The fashion industry manage supply chain efficiently through the deployment of Radio Frequency Identification (RFID) technique at item - level (Loebbecke et al., 2008).

An omni-channel retailing where the customer at the same time interacts and moves among offline and online channels needs an Order Management System (OMS). It is significant because it integrates orders and delivery channels seamlessly. The OMS processes the orders, and submits a visible inventory, delivery and customer information. It assists order and returns management, tax calculations, payment processing, partial shipments, real-time inventory information of stores, drop-ship vendors, internal delivery centres, in-transit inventory and allocated stock across the organization, regardless of which channels are accessed. The OMS helps to manage store fulfilment, store shipments, and store pickup for Click and Collect (Deloitte, 2015). The ERP system harmonizes stock management across channels and makes supply chain flexible (PAC, 2014).

The findings of semi-structured interviews support the literature review. They show that back-end technologies are the main element of omni-channel retailing. The several managers below explain back-end technologies as follows;

When we started to serve in different channels and tried to be omni-channel retailer, the operational workload was increased. The back-end technologies enable all omni-channel's implementations. One of the most important back-end technology is CRM to recognize customers. All channels with integrated CRM provides a 360-degree view of customers. Warehouse and order management systems revise stocks, customer orders and physical store requirements in every second. RFID is essential for inventory accuracy. It is a system that embellishes my dreams. For return modes to physical stores or distribution centre, the integrated PO system is another important system to accept all returns without channel borders (Retailer K).

For us, omni-channel retailing is a project which will be finished in 2019, at this stage ERP, CRM and WMS are enough back-end technologies for us. When we start to serve on the mobile channel, we will have a CRM system to work behind it. Order management system integrates order fulfilments of different channels. It decides which order will be fulfilled from which physical store or distribution centre. RFID provides inventory accuracy and inventory visibility, which allows retailers to minimize out-

of-stock situations and reduce lost sales. In omni-channel retailing centralized inventory is very important. Integrated POS system provides a payment infrastructure across channels (Retailer E).

Omni-channel retailing requires a platform to record and manage all processes related to customers. CRM provides understanding individual preferences of customers for a 360-degree view of each customer. Stock accuracy and delivery speed are very important for customer satisfaction. Warehouse management system ensures the reliability of stocks at any time to speed up operations. Order management system is another essential system because omni-channel retailers need to optimize order fulfilment decision. It allows them to quickly update operations to fulfil both online orders and store orders. The single and centralized platform, integrated point of sale (POS), simplifies the financial transaction between online and offline channels for sales and returns. For omni-channel retailing to be successful, RFID provides real-time information to flow seamlessly through the supply chain to the consumer and vice versa (Retailer G).

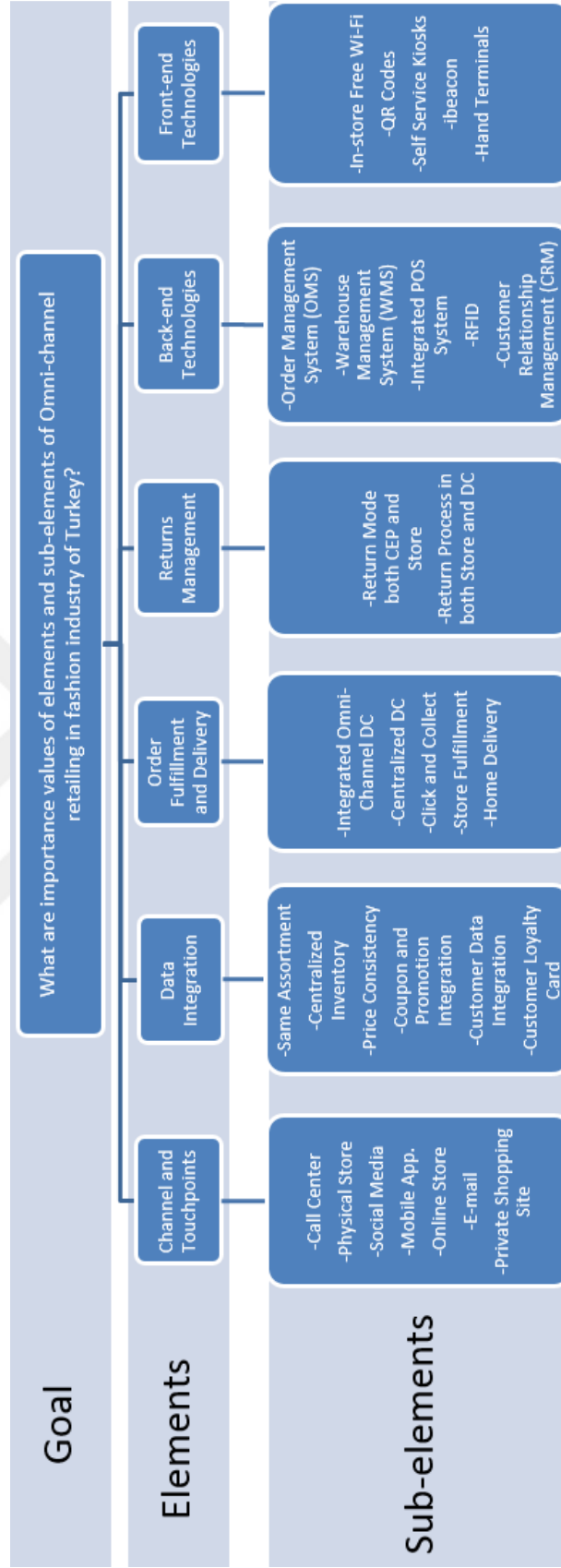


Figure 2. The hierarchical structure of main elements and sub-elements of omni-channel retailing in fashion industry according to findings of semi-structured interviews

CHAPTER-4

ANALYTIC HIERARCHY PROCESS (AHP)

4.1. Analytic Hierarchy Process (AHP)

AHP (Analytic Hierarchy Process) is a model developed by Saaty and is a technique used to solve a multi-criteria decision making problem. It is a technique that provides a systematic structure for evaluating and ranking the alternatives under various criteria. AHP is proven to be a useful tool especially when decision maker needs to evaluate the alternatives under both qualitative and quantitative criteria (Saaty, 1994).

After designing the hierarchy structure according to the analysis of semi-structured interviews, the stage below is data collection with AHP questionnaires. AHP questionnaires were administrated to rate each main elements and sub-element by using the fundamental scale for pairwise comparisons (Saaty, 1990).

Table 8. The Fundamental Scale

Intensity of importance	Definition	Description
1	Equal importance	Two activities contribute equally to the objective
3	Moderate importance of one over another	Experience and judgment strongly favour one activity over another
5	Essential or strong importance	Experience and judgement strongly favour one activity over another
7	Very strong importance	An activity is strongly favoured and its dominance demonstrated in practice
9	Extreme importance	The evidence favouring one activity over another is of the highest possible order of affirmation
2,4,6,8	Intermediate values between the two adjacent judgments	When compromise is needed

Source: Saaty, 1990

The hierarchy structure does not need to be complete. Each level may represent a different cut at the problem. Additionally, a researcher may insert or eliminate levels and elements as necessary to clarify the priorities or to focus on one or more parts of the model (Saaty, 1990).

Only main elements and sub-elements were compared because the aim of this study was to examine their importance values. This research does not include decision-making stage of AHP method. By using the AHP, the leading fashion retailers systematically compare and assign the importance values of the main elements and sub-elements of omni-channel retailing.

4.1.1. Determination of the Goal, Main-elements, Sub-elements and Construction of the Hierarchy

The goal of AHP method is calculation of the importance values of main elements and sub-elements of omni-channel retailing in fashion industry in Turkey. The hierarchical structure was created according to findings of semi-structured interviews. Definitions of main elements and sub-elements of omni-channel retailing are written below:

Main-elements;

- *Channels and touch points:* Retailer's points of customer contact and interaction from start to finish of shopping experience seamlessly.
- *Data integration:* The goal of omni-channel retailing is to provide a seamless shopping experience for the consumers without channel border. It is possible through data flow and integration between the applications and systems that support each channel.
- *Order fulfilment and delivery:* It involves the steps such as receiving, inventory storage, order processing and delivering orders to end customers.
- *Returns management:* Physical flow of the product is managed from the customer to the retailer. It is categorized according to return modes and return processing locations.
- *Front-end technologies:* Customer may finish their shopping in a channel they want without channel borders through the front-end technologies. It integrates online and offline shopping activities with technologies that customer can use, touch or see. The front-end technologies are the tools that users interact with.

- *Back-end technologies:* The back-end technologies consist of a system, an application, and a database. It enables omni-channel capabilities. The elements are designed to work together and are integrated.

Sub-elements of channels and touch points;

- *Call centre:* Call centre is a touchpoint of retailers for customers via phone calls. Customers can get service or information regarding technical support or purchases.

- *E-mail:* It is digital message exchange method between two people using a digital device via mobile phones, tablets, computers and other electronics.

- *Mobile app.:* It is a software that can be used for shopping. It also works both on a phone or a tablet.

- *Online store:* It is electronic commerce channel which allows customers to buy goods or services from retailers on the Internet using a web browser.

- *Physical store:* It is traditional shopping channel that customer needs to visit the physical place for shopping.

- *Private shopping site:* It is e-retailer that provides discount for shoppers who join this sites. Retailers can sell their overstocks or the season-end products via discounts.

- *Social media:* Retailers share product information and advertisements. Customer service and marketing teams of retailers use social media for brand management and keep up to respond customers in real time.

Sub-elements of data integration;

- *Centralized inventory:* Inventory is integrated across online and offline channels for both customer orders and physical store. Customer can reach inventory of all channels.

- *Coupon and promotion integration:* Coupons and promotions are redeemed across all channels.

- *Customer data integration:* Customers data are integrated across all channels. Retailer can reach and track customer data both in online and offline channels.

- *Customer loyalty card:* A program or card is to build long-term relationships, drive profitable growth and understand customer behaviour according to customer experience before, during and after the sale.

- *Price consistency*: The price of products is integrated and same across all channels.
- *Same assortment*: The range of products is integrated and same across all channels.

Sub-elements of order fulfilment and delivery;

- *Centralized distribution centre (DC)*: Centralized DCs are responsible for one centralized location to fulfil store demands and customer orders for each market. The inventory in DC is separated according to the distribution channel.
- *Click and collect*: It provides store pickup for online orders. Customer's online orders can be collected from physical stores.
- *Home delivery*: Retailers ship orders from distribution centres, stores or prefer drop shipment to customer's home.
- *Integrated omni-channel distribution centre (DC)*: Integrated DCs supply store demands and online customer orders because they can leverage inventory pools and allocate inventories to stores and online customer orders flexible in line with demand. There are no separate channel inventories or layouts for products.
- *Reserve and collect*: If the retailers can manage real-time data access for an inventory and pickup abilities of physical stores, reserve and collect can be implemented and online orders can be shipped from available store inventory. It allows for reservation when the customers view products in the online channel. Customers may pick it up later and pay for it at a physical store.
- *Store fulfilment*: Customer orders are picked, prepared, packed and expedited for home delivery or store pick up from physical stores of the retailer. The online orders can be shipped from available store inventory.

Sub-elements of returns management;

- *Return mode both via CEP (carrier, express and parcel provider) and physical store*: Customers may return both via CEP and to physical store. Store return mode is advanced solution for distance purchases. CEP return mode is initial solution.
- *Return process both in physical store and DC*: Returns can be processed and reworked directly in the physical store and added to the physical stores' inventory. Additionally, the returns can be processed in the distribution centre. Store and CEP can send the returns to the DCs for further processing.

Sub-elements of front-end technologies;

- *In-store free Wi-Fi*: Customers can use their mobile or tablet devices without any frustrating connection issues. Customers can research products, compare details, check ratings and reviews before purchasing anything. The in-store free Wi-Fi integrates offline and online channels.
- *Hand terminals*: It is a handheld electronic device to use data transformation via Wi-Fi. They can also show product information, check stock inquiries, check price look-up, set up delivery booking, organize customer management, take price quotes and order. It provides stocktaking, inter-store transfers, price mark down, mobile POS, price checking, in-store communication, sales staff training, goods in and out management, and rental item management.
- *iBeacon*: When customers are near the physical stores, beacon Bluetooth devices in physical stores detect shoppers, they automatically interact with customers through personalised messages (SMS, MMS or e-mail) regarding promotions or discounts of the retailers to their mobiles devices. Beacons also gather shopper data, are a bridge between the physical locations and the digital experiences that allow developers and businesses to interact with consumers.
- *Quick Response (QR) codes*: Quick Response Code provides a way to access a brand's website more quickly than entering a URL manually. QR codes are used over a much wider range of applications, including commercial tracking, entertainment and transport ticketing, product and loyalty marketing, and in-store product labelling. It can also be used in storing personal information for use by organizations.
- *Self-service kiosks*: Customers produce a service independent of direct service employee involvement. Self-Service Kiosks present electronic and interactive shopping options, which have a large touchscreen kiosk monitor and reduce wait times for customer. It is used as a system that responds to the customer's requirements such as making a reservation, purchasing a product, placing an order, mobile check-out systems, online shopping experience while in-store and reserve the items what they want to purchase through the website at physical stores.

Sub-elements of back-end technologies;

- *Customer relationship management (CRM)*: Customer relationship management (CRM) refers to practices, strategies, and technologies that retailers use to manage and

analyse customer interactions and data, customer-based performances with the goal of improving business relationships with customers, assisting in customer retention and driving sales growth. CRM compiles data from a range of different channels and touch points, including a retailer's website, mobile application, physical store, telephone, email, live chat, call centre, and social media. Omni-channel retailing requires a platform to act as the customer system of record and manage all processes related to the customers. For most retailers, this will be the CRM system because it allows to understand individual preferences of customers for a 360-degree view of each customers.

- *Integrated Point of Sale (POS) system*: The Point of Sale (POS) is responsible for scanning the receipt for the return transaction and the eligible items. It also communicates with the enterprise transaction database and returns management system to verify the return. Integrated POS system provides a payment infrastructure across channels. It is very important to accept returns from customers without channel border. The single and centralized platform, integrated point of sale (POS), simplifies the financial transaction between the online and offline channels.

- *Order management system (OMS)*: It is an electronic system that is a streamlined and organized order processing for business. OMS is used for inventory information, database of customers and vendors, customer returns, information about payment and billing and also order processing in the companies. Through OMS, customer relations and sales visibility are improved, order processing is organized with a minimum of delays and back-orders. It processes orders from multiple channels (online mobile, call centre, physical store and more), allocates orders to multiple sources of fulfilment (warehouse, drop shippers, retail stores), and tracks the order to the customer.

- *Radio frequency identification (RFID)*: RFID is a technology that enables to identify and monitor all kinds of products at a certain level by radio waves. It collects data from product tags and barcodes, and match those items with customer profiles in the store. Tags can be attached to any product and when it is close to the antenna, product codes are transmitted to the reader. RFID is used for transportation, inventory management, manufacturing, retail sales and supply chain solutions. For omni-channel retailing to be successful, real-time information needs to flow seamlessly through the supply chain to the consumer and vice versa. RFID provides the means to accurately track inventory in fulfilment centres and retail stores. When RFID system is implemented, inventory

accuracy is increased and inventory visibility allows retailers to minimize out-of-stock situations and reduce lost sales. It enables efficiently count of the stock in minutes.

- *Warehouse management system (WMS)*: Warehouse Management System helps companies for service demands of omni-channel retailing. Through WMS companies monitor the flow of products, increase of distribution accuracy, solve complex work flows and decisions, make orders from a lot of different channels and different inventory locations, getting products to customers on time, keep in safety stock, and move products when customer want the product at the right time.



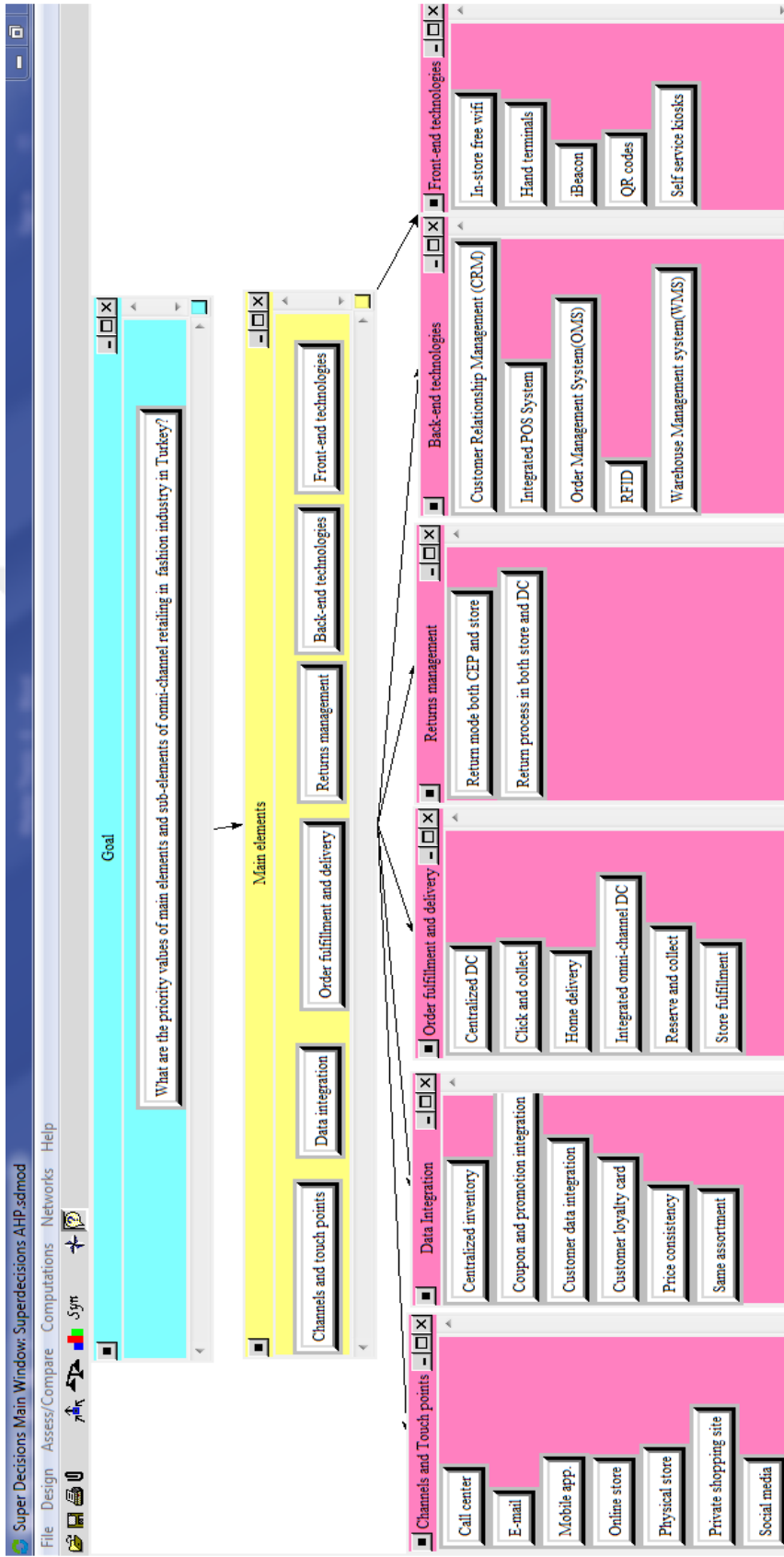


Figure 3. The hierarchy structure in Super Decisions Software

4.1.2. Make Pairwise Comparisons of Main Elements and Sub-elements

AHP method checks the inconsistency ratio of the pairwise comparisons in order to get a reliable solution. Inconsistency arises in different situations. The criterion comparison matrix is a (n x n) dimensional square matrices and the components on the diagonal of the matrix are 1's. When the components on the diagonal of this comparison matrix, $i = j$, the corresponding criterion is 1 as compared to itself (Saaty 1990). A typical comparison matrix (1.1) is shown below.

$$A = \begin{bmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \cdot & & & \cdot \\ \cdot & & & \cdot \\ \cdot & & & \cdot \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{bmatrix} \quad 1.1$$

The pairwise comparisons are made for values above the diagonal of which all values of the comparison matrix are 1. The comparisons are made for values above the diagonal of which all values of the comparison matrix are 1 (Saaty 1990). The formulation below is used for the components below of the diagonal (1.2).

$$a_{ji} = \frac{1}{a_{ij}} \quad 1.2$$

Considering that there are 3 elements (Back-end technologies, channels and touch points and data integration) are the subject of pairwise comparisons. If the decision maker makes a pairwise comparison between the back-end technologies and channels and touch points, he/she decides that back-end technologies has moderate importance compared to channels and touch points by using importance value 3. Furthermore, he/she decides that back-end technologies have much stronger importance than data integration, when back-end technologies are compared to the data integration. He/she gives importance value of 7 to back-end technologies. The corresponding reciprocals 1, 1/2, 1/3... ,1/9 are used for the reverse comparison. The decisions are then represented in a pairwise comparison matrix as shown in figure 4 and figure 5.

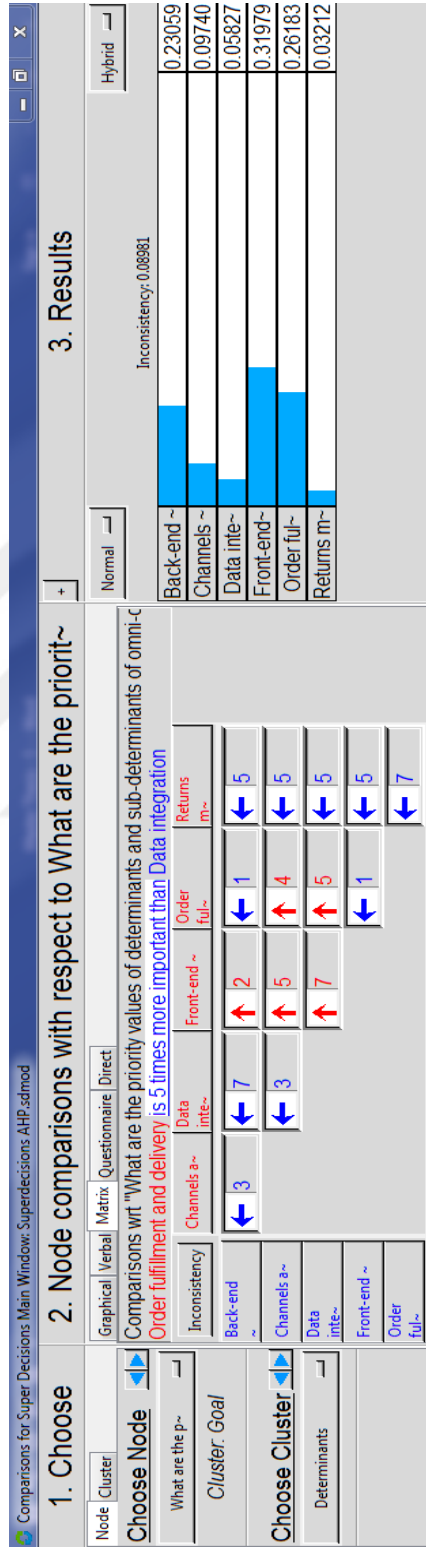


Figure 4. A sample of pairwise comparison matrix

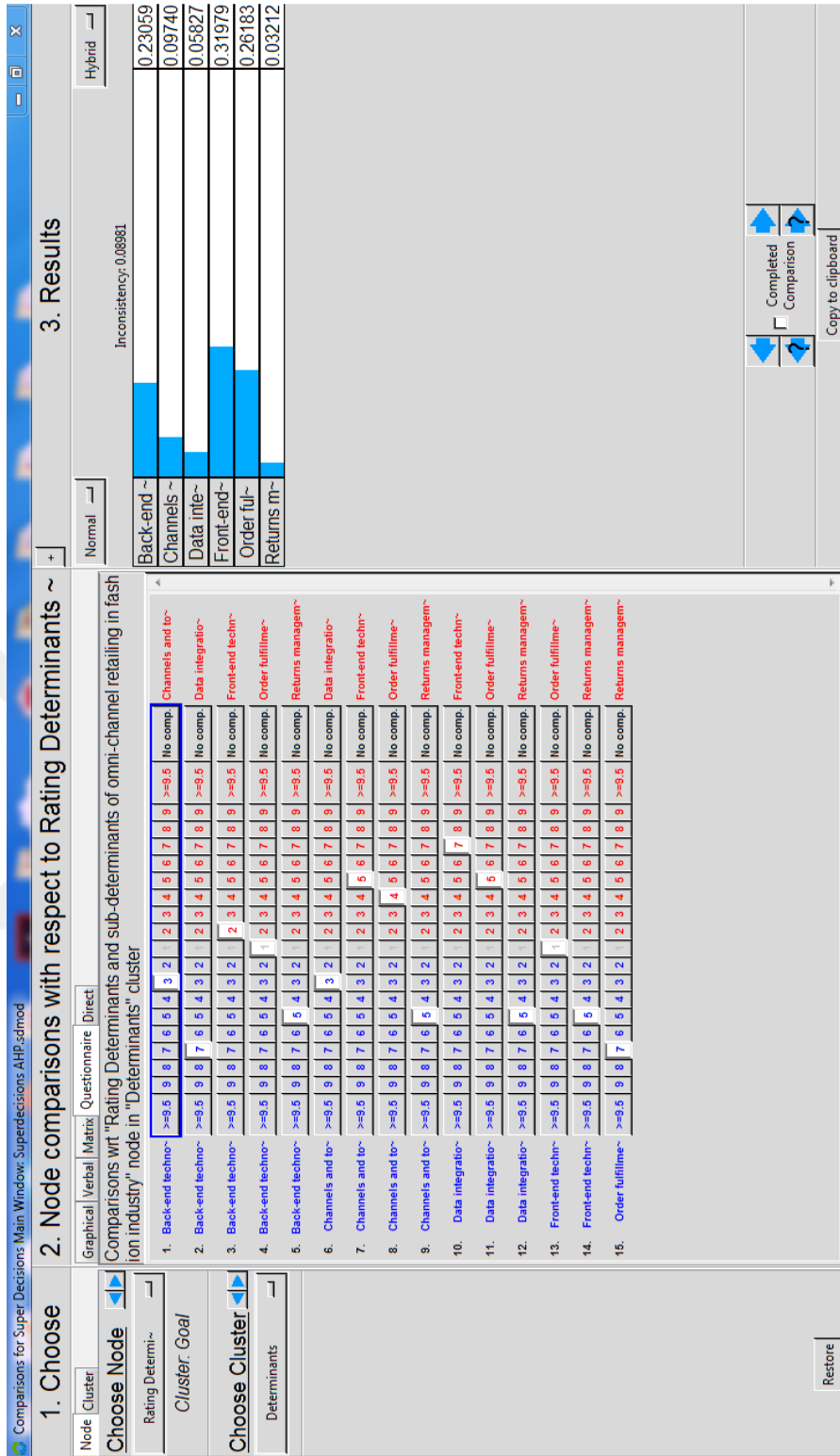


Figure 5. A sample of pairwise comparisons in Super Decisions Software

4.1.3. Calculation of Priority Vector

The next step consists of the computation of a vector of priorities from the constructed matrix. According to the AHP methodology, the eigenvector of the comparison matrix with the largest eigenvalue provides the priority ordering, and the eigenvalue is a measure of consistency of the judgment. The pairwise comparison matrix shows the importance levels of the elements according to each other within a certain logic. However, to determine the weight of all of these elements, in other words, to determine the priority values, the column vectors forming the comparison matrix are used (Saaty, 1994). The vector B is formed with n column and n components (1.3).

$$B_i = \begin{bmatrix} b_{11} \\ b_{21} \\ \cdot \\ \cdot \\ \cdot \\ b_{n1} \end{bmatrix} \quad 1.3$$

The formula is used in the calculation of column B vectors (1.4).

$$b_{ij} = \frac{a_{ij}}{\sum_{i=1}^n a_{ij}} \quad 1.4$$

When the above steps are repeated within other elements, the column B vector will be obtained by the number of elements. When the column B vector is put together in a matrix format, the matrix C (1.5) shown below will be created (Saaty 1990).

$$C = \begin{bmatrix} c_{11} & c_{12} & \dots & c_{1n} \\ c_{21} & c_{22} & \dots & c_{2n} \\ \cdot & & & \cdot \\ \cdot & & & \cdot \\ \cdot & & & \cdot \\ c_{n1} & c_{n2} & \dots & c_{nn} \end{bmatrix} \quad 1.5$$

By taking advantage of the matrix C, it is possible to obtain the priority values of the elements with respect to each other. The arithmetic mean of the row components forming the matrix C is taken and the column W vector (1.7) called Priority Vector is obtained (Saaty, 1994).

$$w_i = \frac{\sum_{j=1}^n c_{ij}}{n} \quad 1.6$$

$$W = \begin{bmatrix} w_1 \\ w_2 \\ \cdot \\ \cdot \\ \cdot \\ w_n \end{bmatrix} \quad 1.7$$

4.1.4. Calculation of Consistency Ratio

Consistency check should be implemented for each judgment matrix. The consistency of the decision maker in the binary comparison between the elements will affect the results obtained with the AHP. Therefore, a process is proposed to measure the consistency of these comparisons in the AHP method. The resulting Consistency Ratio (CR) provides the possibility to test the consistency of the priority vector that found and the consistency of pairwise comparisons between the elements. In the AHP method, CR calculation is based on a comparison of the number of elements and of a coefficient called Factor Value (λ). For the calculation of λ , the D column vector (1.8) is obtained from the matrix multiplication of the priority vector A by the comparison matrix A given earlier (Saaty, 1994).

$$D = \begin{bmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \cdot & & & \cdot \\ \cdot & & & \cdot \\ \cdot & & & \cdot \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{bmatrix} \times \begin{bmatrix} w_1 \\ w_2 \\ \cdot \\ \cdot \\ \cdot \\ w_n \end{bmatrix} \quad 1.8$$

In addition, a base value (E) is obtained as defined. This value is found with respect to each evaluation criterion in the section of the intersection of the D column vector and W column vector. The arithmetic mean gives the basic value (λ) (1.10) for comparison (Saaty 1990).

$$E_i = \frac{d_i}{w_i} \quad (i = 1, 2, \dots, n) \quad 1.9$$

$$\lambda = \frac{\sum_{i=1}^n E_i}{n} \quad 1.10$$

After calculation λ , the value defined as consistency indicator (CI) (1.11) might be calculate by the help of below formulation.

$$CI = \frac{\lambda - n}{n - 1} \quad 1.11$$

The CI values found are divided by the standard correction value, referred to as the random indicator (RI) and shown in Table 8 obtained. The RI value corresponding to the number of elements in Table 9 is selected. For example, it can be seen that the RI value to be used for comparison of 3 elements in Table 9 is 0.58.

Table 9. The values of RI

N	1	2	3	4	5	6	8	9	10	11	12	13
RI	0	0	0.58	0.90	1.12	1.24	1.41	1.45	1.49	1.51	1.48	1.56

$$CR = \frac{CI}{RI} \quad 1.12$$

In this method, the CR (1.12) calculated by the decision maker must be less than 0.10 for the comparisons to be consistent. If the CR value is greater than 0.10, it indicates that there is a calculation error in the AHP method or that there is an inconsistency in the decision maker's comparisons (Saaty 1990).

4.2. Findings of Analytic Hierarchy Process (AHP)

The AHP analysis was conducted by using Super Decisions (2016 version 2.8). In this software, the hierarchies were designed, and the collected data by AHP questionnaires were analysed. The importance values were calculated via pairwise comparisons. For each of the main elements (channel and touch points, data integration, order fulfilment and delivery, returns management, front-end technologies, back-end technologies) pairwise comparisons were conducted. The pairwise comparisons are based on the 1-9 ratio scale of the AHP process (Saaty 1990). The importance values of the main elements with subject to the goal were derived. The same kind of pairwise comparisons were conducted for all sub-elements with respect to their main elements.

Taking the basis of geometric mean of the eight top-level manager's views about binary comparisons, the generated comparison matrixes were calculated. Once the components were compared pairwise, the whole pairwise comparisons were collected in a matrix called a pairwise comparison matrix. Another point that should be determined was the inconsistency index which is useful for identifying possible errors in judgements. In general, the inconsistency index should be less than 0.1 or so to be considered reasonably consistent (Saaty 1990). In the research, this index never exceeded 0.1. Accordingly, it can be said that the feedbacks of decision makers were consistent. So, it was not necessary to reassess the questionnaire.

To achieve the local and global importance values, a matrix of the different comparisons must be created. Then the sums of the columns are generated and the matrix is normalized. For the normalized matrix, the sums per line are calculated and divided by the number of items to achieve local importance value. For the global importance value, this local importance value is multiplied by the local importance value of the related element. For example, the sub-element 'call centre', the global importance value of 0.73% is achieved by multiplying its local importance value

(8.24%) with the importance value of the related main element 'channel and touch points' (8.80%).

4.2.1. The Importance Values of Main Elements

After calculation of importance values for six main elements (channels and touch points, data integration, order fulfilment and delivery, returns management, front-end technologies, back-end technologies), the aggregated importance values are defined as shown in Table 10. According to the data obtained from the questionnaires, three most important main elements were ‘order fulfilment and delivery, front-end technologies and back-end technologies’.

Order fulfilment and delivery as main-element had the greatest importance value on omni-channel retailing with 22.13%. Front-end technologies as main-element has the second greatest importance value on omni-channel retailing with 22.06%. The importance values of these two main elements are extremely close to each other. Although the importance of data integration and channel and touch points have been increasing over the past few decades, both interviewers that participated in the questionnaires from leading fashion retailers did not give weight sufficiently.

Table 10. Overview of importance values of main elements

Main Elements	Local Importance Values (%)
Order fulfilment and delivery	22.13
Front-end technologies	22.06
Back-end technologies	18.43
Returns management	14.86
Data integration	13.72
Channels and touch points	8.80

4.2.2. The Importance Values of Sub-Elements

Table 11 presents the overall importance values for each sub-element related to main elements. For order fulfilment and delivery, the most important sub-element was 'integrated omni-channel DC' which was followed by 'home delivery' according to the results obtained from research findings.

When the sub-elements of the front-end technologies were examined, it was found that the most important sub-element was 'hand terminal' while the least important one was 'self-service kiosks'. In the semi-structured interviews conducted with the leading fashion retailers in Turkey, the top-level managers said that the use of self-service kiosks in Turkey is not efficient, and their customers do not prefer to use it.

It was found that 'warehouse management system (WMS)' had more importance value than the other sub-elements for the back-end technologies. It means that the interviewers believe that warehouse management is very critical for serving customers at anytime and anywhere for omni-channel retailing.

For returns management, 'return mode both via CEP and the store' is more important than 'return process both in store and DC' for fashion retailers in terms of omni-channel retailing.

When the sub-elements of the data integration were investigated, it was found that the most important sub-element was 'price consistency' while the least important one was 'coupon and promotion integration'.

It was found that 'physical store' and 'online store' were the most important channels and touch points for omni-channel retailing. 'E-mail' had the least importance value.

Table 11. Overview of importance values of main elements and sub-elements

Elements	Sub-Elements	Local Priority (%)	Global Priority (%)
Order Fulfilment and Delivery		22.13	22.13
	Integrated Omni-Channel DC	34.82	7.71
	Home Delivery	33.55	7.42
	Store Fulfilment	10.84	2.40
	Click and Collect	8.66	1.92
	Centralized DC	8.63	1.91
	Reserve and Collect	3.50	0.77
Front-End Technologies		22.06	22.06
	Hand Terminals	32.83	7.24
	In-store Free Wi-Fi	23.51	5.19
	Quick Response (QR) codes	19.64	4.33
	iBeacon	13.90	3.07
	Self-Service Kiosks	10.12	2.23
Back-End Technologies		18.43	18.43
	Warehouse Management System (WMS)	28.35	5.22
	Customer Relationship Management (CRM)	25.38	4.68
	Integrated POS System	22.01	4.06
	Order Management System (OMS)	18.67	3.44
	Radio frequency identification (RFID)	5.59	1.03
Returns Management		14.86	14.86
	Return Mode both via CEP and to Physical Store	78.23	11.63
	Return Process both in Physical Store and in DC	21.77	3.23
Data Integration		13.72	13.72
	Price Consistency	28.70	3.94
	Same Assortment	23.74	3.26
	Centralized Inventory	20.74	2.84
	Customer Data Integration	15.92	2.18
	Customer Loyalty Card	7.87	1.08
	Coupon and Promotion Integration	3.03	0.42
Channels and Touch Points		8.80	8.80
	Physical Store	34.96	3.08
	Online Store	34.35	3.02
	Mobile App.	10.07	0.88
	Call Centre	8.24	0.73
	Social Media	6.67	0.59
	Private Shopping Site	3.74	0.33
	E-mail	1.97	0.17

CHAPTER-5

CONCLUSION

5.1. Discussion

The semi-structured interviews were conducted with the leading fashion retailers from Turkey to evaluate the main elements and sub-elements of omni-channel retailing and to construct the hierarchical structure. This research determined the sub-elements of omni-channel retailing in fashion industry in Turkey and categorised them into the main elements of omni-channel retailing. The main elements and sub-elements of omni-channel retailing are clearly identified and the hierarchy is structured systematically by analysing of semi-structured interviews. After that, qualitative data were collected via a questionnaire which was distributed to the top-level managers of each of the selected leading fashion retailers in Turkey. Because AHP evaluation is based on expert opinions, the number of questionnaires conducted depends on the study content. In this study, efforts were focused on especially receiving information from the right experts who are able to answer comprehensive questions and must have experience in all eight retailers currently or previously to obtain reliable information. AHP method enables the leading fashion retailers in Turkey to examine the importance values of omni-channel retailing by comparing them with respect to appropriate main elements and sub-elements.

The leading fashion retailers in Turkey try to offer omni-channel experience to their customers. It provides to remain competitive over their competitors and to continue its dynamic growth while improving profitability. The fashion retailers saw omni-channel strategy as one of the greatest opportunities. The fashion products and customers' shopping behaviours change so fast; it is very important that the retailer is equipped with a flexibility that allows it to adjust and adapt to changes very quickly. Omni-channel retailing aims to prevent dissatisfaction that may result from different experiences that customers may experience in multi-channel retailing. It enables customers to reach any service or product anytime and anywhere. Through this approach, which is implemented successfully by fashion retailers in Turkey, customers have a perfect, integrated and consistent shopping experience.

Omni-channel retailing offers an innovative and seamless consumer experience where consumers can start their shopping in one channel and complete it in another continuously without barriers. Consumers desire both responsive and adaptive interactions with the retailers (The Guardians 2013). A fully implemented omni-channel strategy seamlessly offers integrated and interchangeable distribution platforms for searching, shopping, ordering, purchasing, pickup, delivery, and returns (Lewis et al, 2014).

The literature review indicated that sales and marketing, customer service, information technologies forward and backward distribution are the key enablers for omni-channel. Logistics and supply chain are the backbones of omni-channel strategy (Deloitte, 2015; DHL, 2015). Supply chain investments are key issues in channel integration. Product range, delivery alternatives, reverse flows, and inventory across channels should be integrated. This integration needs goods and information flows across online and offline channels (Piotrowicz and Cuthbertson, 2014). Information technologies (IT) integrate activities of retailers such as, sales and marketing, logistics, distribution, and customer service to serve omni-channel retailing (Oh et al., 2012). Customer service, sales and marketing provides two-way communication (interactive) between the retailer and the customers by including customer touchpoints. Marketing is set of promises to customers (Hennig-Thurau et al., 2010; Carvalho and Campomar, 2014; Verhoef et al., 2015).

Omni-channel fulfilment must break down the barriers between the various channels to meet the increased complexity of orders coming from physical stores, showrooms, online channels, and mobile among others (Deloitte, 2015). The integrated omni-channel DCs are advanced and more complex solutions for omni-channel retailing (Hübner et al, 2016).

In this research, the findings of AHP analysis shows that integrated omni-channel DCs is the most important sub-elements of omni-channel retailing in the fashion industry. According to the leading fashion retailers, order fulfilment and delivery is the most important main element. This result supports that logistics and supply chain are the backbones of omni-channel strategy. The front-end technology is the second most important main element. It integrates online and offline shopping activities with technologies that customer can use, touch or see. The front-end technologies are the

tools that users interact with. The least important main element of omni-channel retailing is channels and touch points. Physical store and online store are still the most important channels and touch points. Physical stores are showrooms for omni-channel shoppers who need to physically see and touch goods, return them, or have a face-to-face conversation with a store associate (Lewis et al, 2014). E-mail is the least important channels and touch points because Turkish consumers do not prefer to communicate with fashion retailers.

The research was guided by fashion retailers to implement omni-channel retailing and to identify project stages, and to plan a budget for omni-channel project. In Turkey, fashion retailers may use these findings for an investment decision regarding omni-channel retailing, and findings show which element is more important than others. They can create precedence for their future investment plans. This research shows which main elements and sub-elements of fashion industry are the key to being successful at omni-channel retailing. It contributes to understand which main elements of omni-channel retailing are relied on today, how they are configured, and why retailers use them. It is also important to know how project budget can be managed for omni-channel retailing.

Omni-channel retailing is a very recent phenomenon. Existing literature focuses on mostly customer's point of view in terms of omni-channel retailing. This research contributes the retailer's point of view regarding omni-channel retailing. The literature lacks an empirically proven and systematic perspective on omni-channel retailing in the fashion industry. This research will help retailers to build their omni-channel strategies in the omni-channel transformation process, while the research is the groundwork of elements of omni-channel retailing for further empirical and fashion industry-based research. If new main elements or sub-elements emerge to satisfy changing needs of omni-channel retailing, then they can be included in the AHP model to evaluate importance values. Similarly, any new member can be included in the evaluation team to consider his or her input.

5.2. Future Study and Limitations

The research was carefully accomplished but there are limitations. The future studies might focus on the following topics.

First, the population of the sample group was small, and only eight leading fashion retailers were analysed. The future studies might interview a larger sample group than this one because researcher might obtain much more detailed information.

Second, after semi-structured interviews were analysed, all sub-elements of omni-channel retailing were categorized into six main elements. The future studies might focus on one of the main elements of omni-channel retailing in Turkey for more detailed research.

Third, it was difficult to find articles or information regarding omni-channel retailing in Turkey because omni-channel retailing is a new strategy that is still on project stage for the retailers. In the future, researchers can be examined to collect more information about omni-channel retailing in fashion industry in Turkey.

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APPENDIX A

AHP QUESTIONNAIRE

The following questionnaire was developed to reveal the importance values of the elements needed to implement the omni-channel strategy. In terms of the reliability of the work, questions must be answered in full. Thank you for your time and valuable contributions to work. General information about the scoring scale to be used when making the assessment and the use of this scale:

Intensity of Importance	Definition
1	Equal importance
3	Moderate importance
5	Strong importance
7	Very strong importance
9	Extreme importance
2,4,6,8	Intermediate values

Example 1

If you think that two elements have equal importance level when comparing elements, you need to mark the number 1 in the middle.

Channels and touch points	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Data integration
---------------------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	------------------

Example 2

If you think that the element on the left side has a much stronger importance than the element on the right side while comparing the elements, you need to mark the number 7 on the left side.

Channels and touch points	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Order fulfilment and Delivery
---------------------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-------------------------------

Example 3

If you think that the element on the right side is moderate plus important and, also it has less strong importance than the element on the left side; you need to mark the number 4 on the right side.

Channels and touch points	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Returns management
---------------------------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--------------------

QUESTIONS

1. Please rate the following main elements according to their importance in omni-channel retailing.

Channels and touch points	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Data integration
Channels and touch points	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Order fulfilment and delivery
Channels and touch points	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Returns management
Channels and touch points	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Back-end technologies
Channels and touch points	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Front-end technologies
Data integration	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Order fulfilment and delivery
Data integration	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Returns management
Data integration	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Back-end technologies
Data integration	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Front-end technologies
Order fulfilment and delivery	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Returns management
Order fulfilment and delivery	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Back-end technologies
Order fulfilment and delivery	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Front-end technologies
Returns management	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Back-end technologies
Returns management	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Front-end technologies
Back-end technologies	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Front-end technologies

2. Please rate the following sub-elements of channels and touch points according to importance in channels and touch points of omni-channel retailing.

Call centre	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Physical store
Call centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Call centre	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Social media
Call centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Call centre	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Mobile app.
Call centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Call centre	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Online store
Call centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Call centre	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	E-mail
Call centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Call centre	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Private shopping site
Call centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Physical store	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Social media
Physical store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Physical store	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Mobile app.
Physical store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Physical store	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Online store
Physical store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Physical store	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	E-mail
Physical store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Physical store	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Private shopping site
Physical store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Social media	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Mobile app.
Social media	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Social media	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Online store
Social media	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Social media	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	E-mail
Social media	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Social media	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Private shopping site
Social media	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mobile app.	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Online store
Mobile app.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mobile app.	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	E-mail
Mobile app.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mobile app.	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Private shopping site
Mobile app.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Online store	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	E-mail
Online store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Online store	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Private shopping site
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E-mail	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Private shopping site
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3. Please rate the following sub-elements of data integration according to importance in data integration of omni-channel retailing.

Same assortment	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Price consistency
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Same assortment	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Centralized inventory
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Same assortment	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Coupon and promotion integration
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Same assortment	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer data integration
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Same assortment	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer loyalty card
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Price consistency	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Centralized inventory
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Price consistency	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Coupon and promotion integration
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Price consistency	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer data integration
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Price consistency	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer loyalty card
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Centralized inventory	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Coupon and promotion integration
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Centralized inventory	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer data integration
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Centralized inventory	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer loyalty card
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Coupon and promotion integration	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer data integration
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Coupon and promotion integration	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer loyalty card
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Customer data integration	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer loyalty card
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

4. Please rate the following sub-elements of order fulfilment and delivery according to importance in order fulfilment and delivery of omni-channel retailing.

Integrated omni-channel DC	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Centralized DC
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Integrated omni-channel DC	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Click and collect
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Integrated omni-channel DC	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Reserve and collect
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Integrated omni-channel DC	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Store fulfilment
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Integrated omni-channel DC	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Home delivery
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Centralized DC	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Click and collect
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Centralized DC	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Reserve and collect
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Centralized DC	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Store fulfilment
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Centralized DC	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Home delivery
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Click and collect	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Reserve and collect
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Click and collect	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Store fulfilment
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Click and collect	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Home delivery
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reserve and collect	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Store fulfilment
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reserve and collect	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Home delivery
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Store fulfilment	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Home delivery
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

5. Please rate the following sub-elements of returns management according to importance in returns management of omni-channel retailing.

Return mode both CEP and store	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Return process in both store and DC
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

6. Please rate the following sub-elements of back-end technologies according to importance in back-end technologies of omni-channel retailing.

Order Management System	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Warehouse Management system
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Order Management System	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer Relationship Management
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Order Management System	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Integrated POS System
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Order Management System	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	RFID
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Warehouse Management system	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Customer Relationship Management
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Warehouse Management system	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Integrated POS System
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Warehouse Management system	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	RFID
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Customer Relationship Management	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Integrated POS System
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Customer Relationship Management	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	RFID
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Integrated POS System	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	RFID
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

7. Please rate the following sub-elements of front-end technologies according to importance in front-end technologies of omni-channel retailing.

Free in-store Wi-Fi	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	QR codes
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Free in-store Wi-Fi	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Self-service kiosks
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Free in-store Wi-Fi	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	iBeacon
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Free in-store Wi-Fi	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Hand terminals
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
QR codes	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Self-service kiosks
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
QR codes	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	iBeacon
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
QR codes	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Hand terminals
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Self-service kiosks	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	iBeacon
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Self-service kiosks	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Hand terminals
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
iBeacon	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Hand terminals
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	