

To what extent luxury retailing can be smart?

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Abstract

The aim of this paper is to explore how luxury brands use new technologies in the context of smart retailing. Building on qualitative data from multiple cases from the luxury industry, our analysis reveals that this sector is conscious of the benefits of using smart technologies as marketing tools, while the effective use of these innovative systems is still limited. However, studies on innovation forces affecting the retail industry are still limited in luxury sectors. The study provides an empirical contribution to the emerging topic of smart retailing with an emphasis on the luxury sector through its in-depth investigation of the usage of smart technologies by the firms studied.

Keywords: smart retailing; luxury retail; innovation management; technology management

1. Introduction

In recent years, retail industry has witnessed an increasing number of technologies able to largely improve processes while entertaining consumers (Dacko, 2017; Demirkan and Spohrer, 2014; Hristov and Reynolds, 2015; Kumar et al. 2014; Pantano et al., 2017; Willems et al., 2017). These technologies can be classified into 3 main typologies: (i) digital technologies, which include social media and the online channel for e-commerce (Gao et al., 2013; Groß, 2015; Hsiao, 2009; Pantano and Verteramo, 2015); (ii) mobile technologies, which include retailers' mobile app (i.e. Hermés app to find the perfect match between the tie and the shirt) (Pantano and Priporas, 2016; Varnali and Toker, 2010); and (iii) immersive/pervasive in-store technologies, which include ibeacons, interactive storefronts and displays, etc. (Pantano and Verteramo, 2015; Papagiannidis et al., 2017).

The rapid diffusion of Internet technologies provides consumers with new online platforms where they can purchase directly at home 24/7 (recognized as I-commerce, e-commerce, e-tailing, or e-store) (Pantano and Verteramo, 2015), which is perceived by consumers as a more convenient shopping environment (Harris and Dennis, 2011; Hsiao, 2009; Jiang et al., 2013). In fact, the new retail settings provide a superior shopping experience, which thanks to a flexible architecture and layout can be updated more frequently than a physical store, with a limited investment in software and programming, enhanced 3D graphics able to enhance product display and interaction, the offer of a wider range of services, such as recommended systems for supporting a consumer's purchase decision, enhanced information on the product (i.e. video explaining the manufacturing process), home delivery policies, etc.; and convenience in terms of location, parking, opening hours and access, because it consists of a store, accessible anytime (24/7) and anywhere where an desktop internet connection is available (Pairin and Keng, 2003; Pantano and Verteramo, 2015).

Mobile technologies provide marketing with new tools able to distribute interactive and personalized information which overcomes the traditional time-space paradigm where traditional marketing took place (Pantano and Priporas, 2016; Rippè et al., 2017; Varnali and Toker, 2010), in other words it involves new marketing services delivered through ubiquitous networks that consumers may access anywhere and anytime from their own mobile device, based on a high level of connectivity and context-awareness (Gao et al., 2013; Pantano & Priporas, 2016). This is based on the mobile devices' ability to adapt their behaviour to users' individual usage (to reply to consumers by automatically recognizing some information about them, such as their location) (Pantano and Priporas, 2016).

The emerging Internet of Things (IoT) technologies, such as indoor positioning, augmented reality, facial recognition, and interactive display support the development of innovative solutions for smart store implementations. The utility of these technologies can be argued especially when referring to the possibility of crossing machine data on customer behavior and direct interaction between sales staff and customers. Merging this information, it is possible to extract more powerful knowledge about customers while providing more exciting shopping experiences. In this scenario, Cisco Systems proposed the concept of the Internet of Everything (IoE), defined as “the intelligent connection of people, process, data and things” (<http://ioeassessment.cisco.com>), which luxury retailers replied proposing new interconnected watches (i.e. Tag Heuer's Connected, Apple Watch Hermès and Michael Kors' Access line in collaboration with Fossil). IoT, in fact, focuses on machine-to-machine (M2M) communications, while the more expansive IoE concept includes M2M communication, machine-to-people (M2P), and people-to-people (P2P) interactions (Parise et al., 2016).

Due the large profitability characterizing luxury sector, luxury retailing can be the sector able to better exploit these innovations to increase the business profitability (Jones,

2016). To this end, LVMH Moët Hennessy- Louis Vuitton hired a chief digital officer to increase the exploitation of digital technologies online and offline in late 2015, while the group in 2017 announced the creation of the LVMH Innovation Award to celebrate new ideas devoted to any startup working on issues related to the luxury sector, and become the first luxury partner of the VIVA Technology event (since 2017) built around innovation Labs dedicated to enhance the collaboration between sector leaders and promising startups.

The introduction of advanced technologies at the points of sale changes and influences consumers' shopping experience, which might emerge from the interaction with the technology/automated system (interactive displays, storefronts, signage, etc.), by soliciting the feeling of entertainment and pleasure, by providing more access points and elements able to engage more consumers.

Therefore, a new question arises in luxury industry: can luxury retail be smart? Starting from the definition of smart technologies for retailing provided by Pantano and Timmermans (2014), the aim of this paper is to understand if luxury retail can be smart, by deeply understanding luxury retailers' preparedness for the emerging phenomenon of smart retailing, in order to figure out the extent to which smart technologies might result in a smart luxury retail industry. Specifically, the paper is structured as follows: the next part defines the smart retailing phenomenon and the luxury retail industry, while the subsequent one analyses five case studies research from luxury fashion retailing actually adopting different technology management strategies to enhance the retail process. Finally, implications for scholars and practitioners are discussed.

2. Theoretical background

2.1. Smart retailing

The large diffusion of smart technologies pushes towards a new concept of cities and processes that can become smart through the “smart” integration of new technologies (Pantano and Timmermans, 2014). Within the broader idea of smart cities, Pantano and Timmermans (2014) proposed the concept of “smart retail” that emerges as a new competitive scenario for retailers characterized by the intelligent usage of smart technologies to engage consumers in more efficient and satisfying shopping experiences. Since the idea of smartness goes beyond the idea of intelligent application of new technologies by including more essential dimensions such as the organizational processes and selling activities, Pantano and Timmermans (2014) proposed extending the smart usage of technology to the retail process to evaluate if it can become a “smart process”. In particular, this usage impacts both the organizational process and selling activities, in terms of development of ad hoc capabilities, changes in knowledge management, and creation of smart partnerships; and consumers’ access to product/service, relationships with retailers/sellers, products/service consumption. From a retailer prospective, these technologies support new methods and techniques to collect and manage data on market trends useful in adapting retailing strategy accordingly (Bennett and Savani, 2011; Fiorito et al., 2010; Pantano et al., 2017). Indeed, these technologies provide information in real time on consumer behaviour (i.e. purchases, products accessed but not bought, time spent in the store, etc.) (Li et al., 2017). Moreover, they improve the service to the increasing consumers’ involvement in the service co-creation (Blitz, 2016; Pan, 2016).

More specifically, concerning the organizational process, smart technologies affect the methods of collecting data from consumers, managing information, transferring knowledge from firms to consumers and *vice versa* (Leitner and Grechenig, 2009; Pantano et al., 2017;

Wood and Reynolds, 2013). Simultaneously, these technologies allow creating a sort of partnership with clients, who become active actors working in cooperation with retailers towards the common goal of producing a more satisfying service, while pushing retailers to develop new capabilities for actively responding to changeable markets and successfully managing innovation (Hagberg et al., 2015; Kindstrom et al., 2013). Concerning selling activities, smart technologies are able to change the way in which consumers access and consume services and products, as well as the building and maintenance of relationships with sellers. In particular, smart technologies allow consumers to access products and services from anywhere, anytime (through a system equipped with an Internet connection), or buy the product before effective consumption (i.e. buying in the store and delivery at home, buying outside (while standing in city parks, squares, travelling via trains, waiting at the bus stops, etc.) and delivery at home, buying at home and delivery in store, etc.), by separating the moment of purchase and effective consumption (Xie and Shugan, 2001), without the direct assistance of a salesperson. Moreover, these systems allow both consumers and retailers to easily communicate with each other, share comments on products and services, and collaborate in the creation of the service (highly facilitated by self-service systems) (Kowatsch and Maass, 2010, Pantano and Verteramo, 2017). As a consequence, these systems affect the way consumers interact with sellers and retailers since their requests might be submitted directly through these technologies, which mediate all interactions (Pantano and Gandini, 2017).

Summarizing, smart technology for retailing implies the development of (novel) ad-hoc capabilities, new (consumer) access to services, changes in knowledge management, the creation of smart partnerships, and a new consumption of products/services. The benefits emerging from smart retailing are (i) greater availability of products, services, and information (i.e. the usage of apps for locating products in the physical stores allow retailers to collect data

on consumers' behaviour within the store in terms of searched products (Landmark and Sjøbakk, 2017); (ii) knowledge sharing between firms and consumers (such technologies as mobile apps allow firms to create and submit personalized offer for each consumer) (Blázquez, 2014); and (iii) smart partnerships among retailers, sellers (e.g. frontline employees), and consumers through the building of smart partnerships (which overcome traditional vendor-client relationships) (Pantano and Timmermans, 2014).

2.2 Luxury retail

The luxury market encompasses several industries, from automotive to apparel, jets, fashion accessories, etc., implying differences in the technological/innovation orientation among the industries (Caniato et al., 2011; Ko et al., 2017).

Past studies demonstrate the extent to which people create an impression of others on the basis of the clothing brands they wear (Eckhardt et al., 2015; Willems et al., 2012), while the evoking social status affect the object evaluation in terms of estimated price, value and willingness to pay for it (Guinn et al., 2015). In this scenario, luxury usually reminds images of rich people with rich lives, a sort of exclusive and inaccessible lifestyle (Dion and Borraz, 2017; Kapferer, 2012). The consumption of luxury brands is driven by social attributes such as self-expression and self-presentation, and by the need to exhibit social standing (Bian and Forsythe, 2012; Dion and Borraz, 2017; Eckhardt et al., 2015; Willems et al., 2012). Therefore, luxury brands can be seen as a symbol of personal and social identity (Tynan et al., 2010), while representing characteristics such as premium quality, heritage of craftsmanship, recognizable style, premium price, uniqueness (represented by the intrinsic scarcity value), and global reputation (Bian and Forsythe, 2012; Dion and Borraz, 2017). Luxury brands offer a hedonic, multisensorial appeal and attract consumers at an emotional level, in terms of the

superior material, experience and symbolic value they provide (Dion and Arnould, 2011; Joy et al., 2014). Consequently, luxury retail relates to products that have an intangible value that outweighs the price of the product (Dion and Arnould, 2011). Therefore, these superior qualities have to emphasize the orientation of the individual consumer and the needs of luxury customers (Hennigs et al., 2015). Moreover, the size of the store and the atmosphere synthesized in the flagship stores represent a key element for both positioning strategy of luxury brands (Cervellon and Coudriet, 2013) and identifying the consumers who believe they are socially legitimate to access that spaces (Dion and Borraz, 2017). In this way, the stores synthesize a specific etiquette that consumers are required to align to benefit from those places (luxury stores) (Dion and Borraz, 2017). For this reason, luxury retailers usually locate their flagship stores in the main shopping street of the most important cities (i.e. Bond Street and Sloan Square in London, and the 5th Avenue in New York house the majority of the luxury retailers) (Moore et al., 2010). Through the art, design, prestige and creativity expressed in their stores, luxury retailers generate a sense of “adoration” by customers (Cervellon and Coudriet, 2013; Dion and Borraz, 2015, 2017), which is not influenced by employees in-store (either negative or positive) behaviours (Wang et al., 2008) and allow highlighting their brand value in unfamiliar markets. Moreover, the luxury brands usually emphasize the iconic and brand heritage of the first flagship store in their collection, communications and products (Dion and Borraz, 2015), by making them points of interest from a tourism perspective, such as the Chanel’s first boutique in rue Cambon 31, Paris which collects many positive tourists’ reviews on TripAdvisor who suggest to “visit absolutely!”, or Salvatore Ferragamo who drew the famous flagship store in Florence in one of the silk scarves in several collections.

Preliminary studies compared online and offline (in-store) luxury buying behaviour by highlighting the different consumer drivers: in the online context consumer motivations rely

on price, convenience, product availability and online shopping attitude, while in the offline context, consumers are more interested in the aesthetic appeal, shopping experience and consumer in-store service (Liu et al., 2013). While other authors argued that luxury brand managers should focus on experiential marketing strategies to better promote the essence of the luxury product and emphasize it as a set of tangibles, physical and interactive experiences that reinforce the perceived value (Wu et al. 2015). For instance, House of Fraser in the store in Bond Street, London (UK) in December 2017, only for the Christmas period, introduced interactive storefront windows where consumers might interact with the products through touch-screen displays. In particular, through the touch of the hand they could choose to move some products, switch on the lights, etc.

Although new technologies can provide a new shopping experience (Dacko et al., 2017; Demirkan and Spohrer, 2014; Johnson et al. 2015; Kim and Ko, 2012; Willems et al., 2017), there is still a gap in the literature about the possible usage of new technologies, with emphasis on the smart ones for enhancing the luxury retail from a managerial perspective.

3. Methodology of Research

The present study is explorative in nature, since it aims to investigate a recent and emerging phenomenon which still requires more in-depth analysis. Thus, this research employed a multiple case study approach, as it increases the robustness of the findings (Eisenhardt, 1989; Yin, 2014). Case studies are appropriate to provide responses in *why* and *how* questions for the phenomena being investigated (Yin, 2014), to bring rich data to light (Gerring, 2009) and are suited to capturing knowledge from practitioners (Bonoma, 1985; Kapoulas and Ratkovic, 2015). A case study is defined as ‘an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-world context, especially when the boundaries

between phenomenon and context are not clearly evident’ (Yin 2014:16). Such a method enables researchers to investigate in depth practice-based phenomena and events, in their natural settings (Benbasat et al, 1987).

3.1 Selection of the case study

Following Ellonen and colleagues (2009), we chose five information-rich cases that our preliminary evaluation identified with similar characteristics. Specifically, we considered five different companies engaged in the selling of luxury goods for private purposes by using specific sampling criteria (Yin, 2014; Silverman, 2000; Eisenhardt, 1989). All these companies are large-sized (based on the sales volume), with their headquarters in London and at least one point of sale in Regent Street or Sloan Square in London (UK), and aware of the importance of innovation in their retail activities (in other words with a digital or online marketing office/department, or an innovation office/department). Data was collected in December 2016. For each company, we evaluated the usage of social media, mobile apps and immersive technologies at the points of sale. Table 1 lists case companies, considering the specific retail sector.

Table 1: Case companies, considering the specific retail sector

Company	Retail Sector	Number of interviewees
Alpha	Fashion	4
Beta	Fashion	4
Gamma	Fashion	4
Delta	Accessories	3
Epsilon	Private jet provider	2

3.2. Data collection

The data collection procedure included face-to-face interviews with key people in charge of innovation or digital marketing strategies (Ellonen et al., 2009, Kapoulas and Ratković, 2015; Kapoulas et al., 2002). In particular, 17 key informants were interviewed. All of them held University degrees, had more than five years of experience, and were between 30 and 40 years of age. 15 were males. None of the companies (cases) has a specific office devoted to the innovation research and development of selection and integration for marketing. The emerging data have been further triangulated with secondary data (consulting annual reports and observation of the effective integration of social media, mobile apps and pervasive technologies at the points of sale to get additional information) as the literature suggests (Tellis, 1997; Yin, 2014). The interviews took place at the respondents' workplace and lasted from 40 to 50 minutes. For confidentiality purposes, we agreed with the respondents not to reveal the company's name, the respondents' identity nor the interview's context (Towers and Xu, 2016). The interview guide was sent to the interviewees prior to the interviews, so that they could be prepared.

The semi-structured interview guide included two main sections: the effective/wished integration of innovation in the marketing strategies, and the motivation pushing the company to innovate. In particular, we considered Facebook, Twitter, Pinterest, Instagram, YouTube, Google+ for social media, considering the level of usages by the company per week, month, etc., and the motivation (i.e. to organize event, propose new collections, advertising, etc.). Concerning the mobile applications, we asked them to identify their main apps, the functionalities and offered services for clients, we collected further data on the interactivity level, availability and frequency of updates by downloading and testing the mentioned apps. Concerning immersive technologies for the points of sale, we asked during the interview how

these technologies work, which changes emerged in the organizational process and on selling activities, we collected further data on functioning and interaction possibilities for consumers.

Table 2 summarizes the different technology used by each case company.

Table 2: Different technology used by each case company

Company	Retail Sector	Innovation typology		
		Social media	Mobile apps	Immersive technologies in the points of sale
Alpha	Fashion	Facebook Twitter Pinterest Instagram YouTube Google+	Not available	Temporary interactive displays
Beta	Fashion	Facebook Twitter Pinterest Instagram YouTube	Not available	Not adopted
Gamma	Fashion	Facebook Twitter Pinterest Instagram YouTube Google+	Not available	Interactive displays Smart mirrors RFID readers
Delta	Accessories	Facebook Twitter Pinterest Instagram YouTube Google+	5 different apps	Not adopted
Epsilon	Private transport systems	Twitter Instagram Google+	1 app	Not adopted

The discussions were recorded digitally and transcribed. For validity purposes a copy of the analyzed data was forwarded to interviewees to confirm their authenticity, and for reliability, a common interview guide was used (Moustakas, 1994). Also, the same interviewer conducted all interviews while two additional colleagues performed the independent coding of the transcripts, which reduces the potential for bias (Lincoln and Guba, 1985; Strauss and

Corbin, 1998). The data was analyzed for each case company separately and as well as cross-case analysis (search similarities, differences across the cases and in contrast to theory) by using a thematic approach (Eriksson and Kovalainen, 2015).

4. Key findings

Data collected have been analyzed following a framework based on Pantano and Timmermans (2014) definition of smart retailing as retailing exploiting the smart usage of technologies based on factors influencing organizational processes and selling activities. The main organizational processes considered are: (i) development of ad hoc capabilities, (ii) changes in knowledge management, and (iii) creation of smart partnerships; while the selling activities have been distinguished into: (i) product/service access, (ii) relationships with sellers, and (iii) product/service consumption. This section summarizes the findings from the multiple-case analysis, by reporting the five cases smart retailing profile. On the basis of our findings, we further define the extent to which the smart technology has an impact on each of the factor from 1 to 4 in terms of absent (1), weak (2), moderate (3), and strong (4), while a simultaneously strong influence on the organization factor and selling activity would characterize the smart retailing process.

4.1 Alpha

Organizational process

The usage of social media does not require the development of ad hoc capabilities, which differs from the adoption of in-store interactive displays supporting the optimization of warehouse and shelves refurbishment. Thus, even if the technology has been adopted on a fixed-term basis, it requires the development of ad hoc systems to evaluate the changes on

retail and distribution management, and on controlling sales trends. Similarly, these displays support the company in product knowledge transfer to consumers, and acquiring data on consumers' behavior, which are stored in an integrated database. Also, social media support the company' in product knowledge transfer to consumers, and in acquiring data on consumers behavior, by taking into account the number of followers, comments, likes, etc. Both social media and interactive displays further represent a new, direct channel used by both consumers and company to communicate, without effectively creating collaborations and partnerships.

Selling activities

The introduced in-store displays modify product access, which can be “virtually” accessed through the system, with additional information (apart the purchase option, which still takes place through the traditional process), without the direct assistance of a real sales assistant, thus impacting their specific duties. Indeed, they also require sales assistants to be trained to learn the system's functions in order to support consumers whilst they use it or to manage a certain number of system fails when needed. Meanwhile, social media only support the online access to product information.

4.2 Beta

Organizational process

This company only adopts social media, which does not require the development of ad hoc capabilities for the right adoption, since they are established and largely diffused technologies, which produces some changes on the knowledge transfer. In fact, the company uses Facebook to transfer information on products to consumers through posts, articles and video of the latest' fashion shows, while it acquires data on consumers' preferences through

the number of “likes” and posted comments. However, Beta does not use social media to develop a direct communication channel with consumers, who are not invited to share opinions and experiences.

Selling activities

In contrast to Alpha, Beta allows access to and the purchase of products directly from their Facebook page; for this reason, it separates the moment of product purchase (online through social media) from the moment of consumption (purchase collection), which differs if compared with the traditional in-store product purchase and consumption.

4.3 Gamma

Organizational process

Similarly to Beta, Gamma adopts social media, which does not require the development of ad hoc capabilities for the right adoption. In addition, it adopted interactive displays and iPads that require the availability of sellers/sales assistants with ad hoc competences in order to use these technologies as supporting tools for their tasks, and to support consumers’ usage. While the adoption of RFID terminals includes the introduction of certain RFID readers/writers to provide information on all available products, requiring an updated database and monitoring systems for the products on shelves and in the store warehouse. All these technologies transfer knowledge about products and acquire information on consumers whilst used, collected and managed through specific management software. Most especially, iPad usage involves consumers in the creation of a partnership between retailer and consumers, by requiring users’ registration, setting of preferences and suggestions of improvements.

Selling activities

The introduced interactive displays, smart mirrors and RFID systems change the way consumers access a product. Although the purchase option is not supported by these technologies, consumers might access all the product information through the new technologies without the direct assistance of an employee, by consulting the new collections, the information about material and product availability, prices, etc. Similarly, employees are provided with iPads to support their tasks and provide additional information on clients (i.e. on their previous purchases, etc.) and products when needed. iPads are further equipped with a portable POS that employees can provide portable payments for customers within the store (not limited to the cash desk), requiring an extension of their competences and duties.

4.4. Delta

Organizational Process

While the adoption of social media does not require the development of ad hoc capabilities, the usage of mobile apps solicits the presence of employees with specific competences in computer science in order to maintain and manage mobile apps. Through social media and apps, Delta transfer product information and acquire consumers' information that can be successfully managed to improve retail strategies. However, these technologies do not actually support the effective collaboration between clients and company.

Selling activities

Although the purchase must take place in the physical store through the traditional cash desks, consumers can access additional information on goods through the mobile app. Thus, the influence on selling activity is quite limited.

4.5 Epsilon

Organizational process

The introduction of an app forces the company to have employees with specific competences in computer science to ensure the success of the app (which must be constantly updated). Similar to Delta, the adoption of social media does not require the development of ad hoc capabilities, while the usage of mobile apps solicits the presence of employees with specific competences in computer science in order to maintain and manage the mobile apps. Epsilon further uses the app to acquire information on consumers' preferences in order to better customize its offers. In particular, this app is devoted to the creation of a smart partnership between client and company, which aims at providing a highly customized and ad hoc product.

Selling activities

The app allows consumers to access information on the product, which they contribute to the customization of, anywhere and anytime, while there is no effect on the consumption experience (the product can be ordered, purchased and collected only at the physical point of sale). Table 3 summarizes these results. Insights show that the actual technologies are not simultaneously influencing all factors characterizing 'smart retailing.

Table 3: Level of technology influence on organizational process and selling activity, starting from the definition of smart retailing.

	Features of smart retailing	Alpha	Beta	Gamma	Delta	Epsilon
Organizational process	Developing ad hoc capabilities	Moderate (3)	Absent (1)	Strong (4)	Weak (2)	Strong (4)
	Changes in knowledge management	Moderate (3)	Moderate (3)	Strong (4)	Moderate (3)	Moderate (3)
	Creation of smart partnership	Absent (1)	Absent (1)	Moderate (3)	Absent (1)	Moderate (3)

Selling activities	Access to product/service	Moderate (3)	Absent (1)	Moderate (3)	Absent (1)	Absent (1)
	Relationship with sellers	Weak (2)	Absent (1)	Moderate (3)	Weak (2)	Moderate (3)
	Product/service consumption	Absent (1)	Moderate (3)	Absent (1)	Absent (1)	Absent (1)

A smart technology for luxury retailing would have an average of 3 (strong) on all the components for organizational process and selling activities.

5. Discussion and conclusion

Drawing upon Table 3, companies' smart retailing strategies might be placed on a Cartesian system $x y$, considering x the level of influence of the technology on selling activities and y the level of influence on the organizational process (Figure 1).

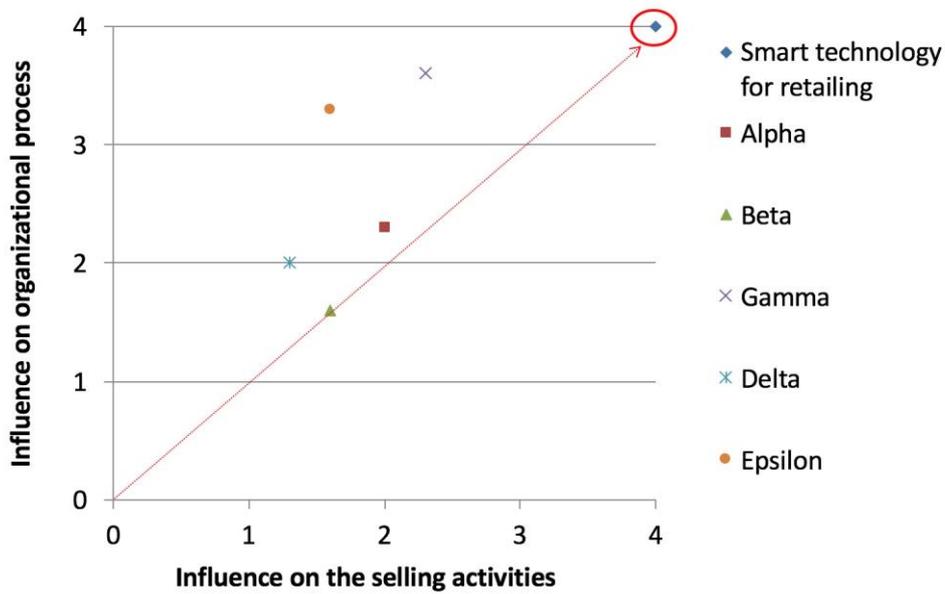


Figure 1: Factors characterizing luxury smart retailing.

Since none of the investigated companies are actually reaching a strong influence on all the components of smart retailing, we might assume that smart retailing is suitable but not

yet adopted, due to the lack of smart technologies influencing (improving) selling activities and organizational process. Indeed, only one company is investing towards the introduction of technologies supporting a smart process, achieving so far, a strong impact on two of the components of smart retailing. Indeed, the adopted technologies strongly influence different factors, but not simultaneously, thus retailing might be smart with a technology able to influence all of them at the same time.

A noteworthy result emerges in the organizational processes section, which represents the feature that is more affected by the actual smart technologies. Indeed, when introducing a technological change in organizations there is a strong (both positive and negative) effect on internal processes, necessary skills, and relationships between people. This change might be further suffered or totally managed by the organization, accordingly to the organizational processes trying to recover both static and dynamic consistency.

Moreover, this study also confirms that although smart technologies are changing consumer-seller interaction (Pantano and Gandini, 2017; Pantano and Verteramo 2017), sellers still influence consumers and their emotional involvement with the product and the store. This leads to the idea that in the luxury sector, smart technologies should strengthen the (human) relationship between customers and salespeople, which requires a different involvement when compared with other sectors such grocery (Bian and Forsythe, 2012; Dion and Arnould, 2011; Joy et al., 2014; Keller, 2009; Wang et al., 2008).

This study extends previous research on innovation in retailing (Dacko, 2017; Demirkan and Spohrer, 2014; Hagberg et al., 2015; Hristov and Reynolds, 2015; Kumar et al., 2014; Willems et al., 2017), by focusing on the specific sector of luxury retailing with a definition of the extent to which luxury retailing might be smart. It also contributes to the literature on luxury retail experience (Bian and Forsythe, 2012; Cervellon and Coudriet, 2013;

Dion and Borraz, 2017; Eckhardt et al., 2015; Hennings et al., 2015; Willems et al., 2012) by adding new knowledge on the effective usage of smart technologies to improve retail management strategies. In other words, our findings extend the past studies focusing on consumers' perspective with a new focus from retail management towards the smart technologies.

Moreover, results reveal the large usage of social media by luxury retailers as the main technology to enhance management, while the adoption of mobile apps or interactive technologies is still limited.

As smart retailing has been defined from a managerial perspective (Pantano and Timmermans, 2014), the present study analyzed the process from the retailers' perspective. The adoption of smart retailing approach would be beneficial for retailers by providing a more efficient and technology-oriented retail management. Luxury retailers should be aware of the rewards emerging by investing in research and development oriented to the introduction of smart technologies (none of the analyzed companies has an office with this aim), which would include the development of ad hoc capabilities, changes in knowledge management and creation of smart partnerships, as well as a new consumer access to products and services, better relationships between consumer and seller, and new consumption experiences. Since luxury retailing is actually adopting some technologies in this sense without yet identifying the smart one (as the one capable of making the process smart), being the first one to identify and adopt this particular technology (the pioneer) would generate huge business advantage over competitors. In other words, retail managers have the possibility to make the retail process "smart" through the integration of digital technologies, mobile technologies, and immersive/pervasive in-store, which would simultaneously enhance organizational process and the selling activities. However, they are not actually exploiting this opportunity, by limiting

their usage of technologies. This means that despite the characteristics of luxury retailing (Bian and Forsythe, 2012; Dion and Arnould, 2011; Joy et al., 2014; Tynan et al., 2010), this sector is not excluded by the innovative force actually affecting the other sectors in retailing. In addition, our study shows that the luxury retailers are not reluctant to introduce new (or smart) technologies, because they made some preliminary attempts to move towards innovative marketing strategies through innovation, while they still lack of a culture of innovation.

Although this study provides interesting insights, there are some limitations that should be considered. First, the study involves a qualitative approach limited to five luxury companies adopting smart technologies, while quantitative data would reinforce the generalizability of results. Moreover, the companies we selected do not have a department of innovation to act digital ideas through the marketing strategies, in opposite companies working on fast fashion (including accessories and jewelry) are introducing IT retail innovation departments. Thus, a further comparison with fast fashion industry would provide a better overview on the extent to which the fashion industry might adopt smart retailing strategies in a broader sense and evaluating the willingness to become smart of the different retail industries. Finally, the investigated companies actually have not an office further studies might replicate the study on different luxury sectors to achieve more generalizable results

References

- Benbasat, I., Goldstein, D. K., Mead, M., 1987. The case research strategy in studies of information systems. *MIS Q.* 11 (3), 369-386.
- Bennett, R., Savani, S., 2011. Retailers preparedness for introduction of third wave (ubiquitous) computing applications: A survey of UK companies. *Int. J. Retail. Distrib. Manag.* 39 (5), 306–325.

- Bian, Q., Forsythe, S., 2012. Purchase intention for luxury brands: a cross cultural comparison. *J. Bus. Res.* 65, 1443-1451.
- Blázquez, M., 2014. Fashion shopping in multichannel retail: The role of technology in enhancing the customer experience. *Int. J. Electron. Commer.* 18 (4), 97-116.
- Blitz, A., 2016. Beset by the digital revolution successful retailers embrace technology that enhances customer value. *Strat. Leader.* 44 (6), 16-24.
- Bonoma, T. V., 1985. Case research in marketing: Opportunities, problems and a process. *J. Market. Res.* 22 (2), 199–208.
- Caniato, F., Caridi, M., Castelli C., Golini., R., 2011. Supply chain management in the luxury industry: a first classification of companies and their strategies. *Int. J. Prod. Econ.* 133, 622-633.
- Cervellon, M.-C., Coudriet, R., 2013. Brand social power in luxury retail: Manifestations of brand dominance over clients in the store. *Int. J. Ret. Distr. Manag.* 41(11), 869–884.
- Dacko, S.G., 2017. Enabling smart retail settings via mobile augmented reality shopping apps. *Techn. Forec. Soc. Chang.* 124, 243-256.
- Demirkan, H., Spohrer, J., 2014. Developing a framework to improve virtual shopping in digital malls with intelligent self-service systems. *J. Retail. Consum. Serv.* 21 (5), 860–868.
- Dion, D., Arnould, E., 2011. Retail luxury strategy: assembling charisma through art and magic. *J. Retail.* 87 (4), 502-520.
- Dion, D., Borraz, S., 2015. Managing heritage brands: A study of the sacralization of heritage stores in the luxury industry. *J. Retail. Consum. Serv.* 22, 77-84.
- Dion, D., Borraz, S., 2017. Managing Status: How Luxury Brands Shape Class Subjectivities in the Service Encounter. *J. Mark.*

- Eckhardt, G. M., Belk, R. W., Wilson, J. A. J., 2015. The rise of inconspicuous consumption. *J. Mark. Manag.* 31 (7/8), 807–826.
- Eisenhardt, K.M., 1989. Building theories from case study research. *Acad. Manag. Rev.* 14 (4), 532-550.
- Ellonen, H. K., Wikström, P., Jantunen, A., 2009. Linking dynamic-capability portfolios and innovation outcomes. *Technovation* 29 (11), 753-762.
- Eriksson, P., Kovalainen, A., 2015. *Qualitative Methods in Business Research: A Practical Guide to Social Research*. Second ed., Sage, London.
- Fiorito, S., Gable, M., Conseur, A., 2010. Technology: Advancing retail buyer performance in the twenty-first century. *Int. J. Retail. Distrib. Manag.* 38 (11/12), 879–893.
- Gao, T.T., Rohm, A. J., Sultan, F., Pagani, M., 2013. Consumers un-tethered: A three-market empirical study of consumers' mobile marketing acceptance. *J. Bus. Res.* 66 (12), 2536-2544.
- Gerring, J., 2009. *Case Study Research: Principles and Practices*. Cambridge University Press, Cambridge.
- Groß, M. 2015. Mobile shopping: A classification framework and literature review. *Int. J. Retail. Distrib. Manag.* 43 (3), 221-241.
- Guinn, T. C. O., Tanner, R. J. (2015). Turning to Space: Social Density, Social Class and the Value of Things in Stores. *J. Consum. Res.* 42 (2), 196-213.
- Hagberg, J., Sundström, M., Egels-Zandén, N., 2015. Digitalization of retailing: A review and framework. Paper presented at the 18th International Conference on Research in the Distributive Trades of the European Association for Education and Research in Commercial Distribution, July 1-3, 2015.

- Harris, L., Dennis, C., 2011. Engaging customers on Facebook: Challenges for e-retailers. *J. Cons. Behav.* 10, 338–346.
- Hennigs, N., Wiedmann, K. P., Klarmann, C., Behrens, S., 2015. The complexity of value in the luxury industry: From consumers' individual value perception to luxury consumption. *Int. J. Retail. Distrib. Manag.* 43 (10/11), 922-939.
- Hristov, L., Reynolds, J., 2015. Perception and practices of innovation in retailing: challenges of definition and measurement. *Int. J. Retail. Distrib. Manag.* 43 (2), 126-147.
- Hsiao M.-H., 2009. Shopping mode choice: Physical store shopping versus e-shopping. *Transp. Res. Part E: Logist. Transp. Rev.* 45 (1), 86-95.
- Jiang, L.A., Yang, Z., Jun, M., 2013. Measuring consumer perceptions of online shopping convenience. *J. Ser. Manag.* 24 (2), 191-214.
- Johnson, K.K.P., Kim, H.-Y., Mun, J.-M., Lee, J.Y., 2015. Keeping customers shopping in stores: interrelationships among store attributes, shopping enjoyment, and place attachment. *Int. Rev. Retail. Distrib. Cons. Res.* 25 (1), 20-34.
- Jones, S., 2016. Luxury brands ramp up digital efforts, show varied priorities: report. *Luxury daily*
- Joy, A., Wang, J. J., Chan, T. S., Sherry, J. F., Cui, G., 2014. M(Art)Worlds: consumer perception of how luxury brand stores become art institutions. *J. Retail.* 90 (3), 347-364.
- Kapferer, J-N., 2012. Abundant rarity: the key to luxury growth. *Bus. Horiz.* 55, 453-462.
- Kapoulas, A., Murphy, W., Ellis, N., 2002. Say hello, wave goodbye: Missed opportunities for electronic relationship marketing with the financial services sector. *Intern. J. Bank Market.* 20 (7), 302-313.
- Kapoulas, A., Ratković, D., 2015. E-CRM dilemmas in developing markets: The case of a

- tourism company in Serbia. *Europ. J. Tour. Res.* 9, 24–40
- Keller, K.L., 2009. Managing the growth tradeoff: challenges and opportunities in luxury branding. *J. Brand. Manag.* 16 (5), 290-301.
- Kim, A.J., Ko, E., 2012. Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand. *J. Bus. Res.* 65 (10), 1480-1486.
- Kindström, D., Kowalkowski, C., Sandberg, E., 2013. Enabling service innovation: A dynamic capabilities approach. *J. Bus. Res.* 66 (8), 1063-1073.
- Ko, E., Costello, J. P., Taylor, C. R., 2017. What is a luxury brand? A new definition and review of the literature. *J. Bus. Res.* <https://doi.org/10.1016/j.jbusres.2017.08.023>
- Kowatsch, T., Maass, W., 2010. In-store consumer behavior: How mobile recommendation agents influence usage intentions, product purchases, and store preferences. *Comput. Human Behav.* 26 (4), 697-704.
- Kumar, V., Umashankar, N., Park, I., 2014 Tracing the evolution and projecting the future of in-store marketing. *Rev. Mark. Res.* 11, 27-56.
- Landmark, A.D., Sjøbakk, B., 2017. Tracking customer behaviour in fashion retail using RFID. *Int. J. Retail. Distrib. Manag.* 45 (7-8), 844-858.
- Leitner, P., Grechenig, T., 2009. Scalable social software services: Towards a shopping community model based on analyses of established web service components and functions. Paper presented at the 42nd Hawaii International Conference on System Sciences, IEEE, 1-10.
- Li, Y.-M., Lin, L.-F., Ho, C.-C., 2017. A social route recommender mechanism for store shopping support. *Dec. Sup. Syst.* 94, 97-108.
- Lincoln, Y.S., Guba, E., 1985. *Naturalistic Inquiry*, Sage Publications, Beverly Hills, CA.

- Liu, X., Burns, A. C., Hou, Y., 2013. Comparing online and in-store shopping behavior towards luxury goods. *Int. J. Retail. Distrib. Manag.* 41 (11/12), 885-900.
- Moore, C. M., Doherty, A.-M. M., Doyle, S. A., 2010. Flagship stores as a market entry method: the perspective of luxury fashion retailing. *Europ. Jour. Mark.* 44 (1/2), 139–161.
- Moustakas, C., 1994. *Phenomenological Research Methods*. Sage, Thousand Oaks, CA.
- Pairin, K., Keng, S., 2003. Creating a virtual store image. *Comm. ACM.* 46 (12), 226-232.
- Pan, B., 2016. Smart systems for improved customer choice in fashion retail outlets, in: Choi T-M. (Ed.), *Information Systems for the Fashion and Apparel Industry*. Woodhead Publishing Duxford, UK, pp. 109-120.
- Pantano, E., Timmermans, H., 2014. What is smart for retailing? *Proced. Envir. Sc.* 22, 101-107.
- Pantano, E., Gandini, A., 2017. Exploring the forms of sociality mediated by innovative technologies in retail settings. *Comput. Human Behav.* 77, 367-373.
2017.02.036.
- Pantano, E., Priporas, C.V., 2016. The effect of mobile retailing on consumers' purchasing experiences: A dynamic perspective. *Comput. Human Behav.* 61, 548–555.
- Pantano, E., Verteramo, S., 2015. Placeless store or ubiquitous stores?: New technological frontiers in retailing. Paper presented at the 12th International Joint Conference on e-Business, IEEE, 2, 173-178.
- Pantano E., Verteramo, S., 2017. How technologies are changing the social relationships in the shopping experience? *Int. J. Tech. Mark.* 12 (2), 151-164.

- Pantano E., Priporas C.V., Sorace S., Iazzolino G., 2017. Does the innovation-orientation lead to retail industry growth? Empirical evidence from patent analysis. *J. Retail. Consum. Serv.* 34, 88-94.
- Papagiannidis S., Pantano E., See-To E., Dennis C., Bourlakis M., 2017. To immerse or not? Experimenting with two virtual retail environments. *Info. Tech. People* 34 (1), 163-188.
- Parise, S., Guinan, P.J., Kafka, R., 2016. Solving the crisis of immediacy: How digital technology can transform the customer experience. *Bus. Hor.* 59 (4), 411-420.
- Rippé, C.B., Weisfeld-Spolter, S., Yurova, Y., Dubinsky, A.J., Hale, D., 2017. Under the sway of a mobile device during an in-store shopping experience. *Psychol. Mark.* 34 (7), 733-752.
- Silverman, D., 2000. Analyzing talk and text, in: Denzin, N.K., Lincoln, Y.S., (Eds.), *Handbook of Qualitative Research*, Sage, Thousand Oaks CA, pp. 821-834.
- Strauss, A., Corbin, J. 1998. *Basics of Qualitative Research*. Second ed., Sage Publications, Newbury Park, CT.
- Tellis, W., 1997, Application of a case study methodology. *The Qual. Report*, 3 (3), 1-19.
- Towers, N., Xu, K., 2016. The influence of guanxi on physical distribution service quality availability in e-commerce sourcing fashion garments from China. *J. Retail. Consum. Serv.* 28, 126–136
- Tynan, C., McKechnie, S., Chhuon, C., 2010. Co-creating value for luxury brands. *J. Bus. Res.* 63 (11), 1156-1163.
- Varnali, K., Toker, A. 2010. Mobile marketing research: The-state-of-the-art. *Int. J. info. Manag.* 30 (2), 144-151.

- Wang, X., Chow, C. W. C., Luk, C. L., 2008. Does Service Employee Arrogance Discourage Sales of Luxury Brands in Emerging Economies? *Psy. Mark.* 30, 918–933.
- Willems, K., Janssens, W., Swinnen, G., Brengman, M., Streukens, S., Vancauteran, M., 2012. From Armani to Zara: Impression formation based on fashion store patronage. *J. Bus. Res.* 65 (10), 1487-1494.
- Willems, K., Smolders, A., Brengman, M., Luyten, K., Schöning, J., 2017. The path-to-purchase is paved with digital opportunities: An inventory of shopper-oriented retail technologies. *Tech. Forec. Soc. Chang.* 124, 228-242.
- Wood, S., Reynolds, J., 2013. Knowledge management, organisational learning and memory in UK retail network planning. *Serv. Ind. J.* 33 (2), 150-170.
- Wu, M. S. S., Chaney, I., Chen, C. H. S., Nguyen, B., Melewar, T.C., 2015. Luxury fashion brands: factors influencing young female consumers' luxury fashion purchasing in Taiwan. *Qual. Market. Res. Int. J.* 18 (3), 298-319.
- Xie, J., Shugan S.M., 2001. Electronic tickets, smart cards, and online prepayments: when and how to advance sell. *Mark. Sci.* 20 (3), 219-243.
- Yin, R.K., 2014. *Case Study Design and Research: Design and Methods*, fifth ed. Sage Publications, Thousand Oaks, CA.