

Luxury adapts to artificial intelligence & digital transformation - A case study of Burberry

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Abstract

In the realm of luxury brands, the era of digital world and digital integration has seen a fundamental transformation. High-end clothing firms are demonstrating a strong interest in understanding digitalization in order to provide customers with an omni-channel buying experience. In this study, the main goal is to investigate the usage of Artificial Intelligence and its applications by luxury labels, as well as the impact that this technology has on the brand's performance in the market. Based on a case study, this article examines how luxury major

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retailers such as Burberry have successfully implemented an online strategy by repositioning themselves in fear of missing high-end customers and thus attempting to solve the existing trade between uniqueness and magnitude of economic system. Findings within the paper have been derived from a systematic bibliometric analysis which has taken into consideration a significant number of relevant publications such as conference proceedings and scholarly articles, as well as case studies of major global luxury fashion firms, among many other things. As the first study of its sort, this article will be useful to industry professionals in building their digital solutions; for scholars and academicians, the study will provide an ability to look at the issue in the context of consumer and technological innovation.

Subject Classification: 90B90.

Keywords: Artificial intelligence, Bibliometric analysis, Case study, Digital transformation, e-commerce, Luxury market, Technology.

1. Introduction

Technological advancement changes the business world. The widespread use of the internet has shifted product and service marketing online, emphasising global brand recognition (Davenport et. al., 2020). The world wide web helps businesses to use digital platforms like social media and e-commerce portals to attract more customers to buy their products (Chen, 2019). The world is changing; technologies are now part of our daily lives and people are more connected.

In current history, artificial intelligence has had a profound impact on individuals, industry and the globe. Currently, Artificial Intelligence (AI) is widely utilised in operational management to identify hazards, target customers, advertise brands and product pricing so as to increase revenue (Marinchak et. al., 2018). In the technological environment, AI transforms promotional strategies and platforms and brings out a significant change (Qiao et. al., 2019).

Artificial Intelligence (AI), has transformed many industries (Cheng and Jiang, 2020a; Kietzmann and Pitt, 2020). It predicts sales, appearance and market demand along with textile behaviour and thus has improved managing technique for decision-making, lowering costs and enhancing production efficiency.

2. Research Objectives

- (1) To identify that luxury brands are employing Artificial Intelligence.

- (2) To study new and revolutionary approaches of AI applications, highlighting the effects.

3. Review of Literature

Bibliometrics is a method broadly used to draw the big picture (Porter et. al. 2002) in a literature review. It start with the definition of questions to be answered, which include some questions like Who, What, Where, When, With, Whom (Börner and Polley, 2014). Who refers to authors, What to keywords, Where to countries or other geographical locations, When to years or periods defined, With and Whom to the cooperation in research, which can indicate authors or affiliations.

Uniqlo transformed the customer shopping experience by implementing AI-powered UMood kiosks in some of their stores. These kiosks show customers a variety of products and measure what their reaction to the colour and style is through neurotransmitters. The customers brain signals allow to know what is his feelings about each product. Thanks to these kiosks, Uniqlo can collect data about what customers like and dislike without even asking them questions. Then, based on that, the kiosk is able to make personalized recommendations. Therefore, through this bespoke experience, customers are sure to get the product matching their tastes. Products are made by customers themselves according to what their dream product is, what we call 'dream increments' are adding value to it (Alcouffe, J. 2020).

In their stores, Luxury brands can also use AI for inventories management. *Detego*, an inventory management software, allows to track inventory and create AI-informed "planograms": a dynamic plan that recommends ideal sizes and placement of stock within a store. Through the algorithm, the store can also know what particular size is in demand allowing the store to readjust its inventories in the future. This AI software also allows to gather products in the merchandising based on what products customers are likely to buy (Alcouffe, J. 2020).

Customization represents the extent to which AI-powered chatbot marketing activities can offer customers customized assistance to satisfy their needs (Godey et. al., 2016). For instance, Gucci sends personalized messages to individual customers and specifically designs products based on customers' preferences (Sangar,2012).

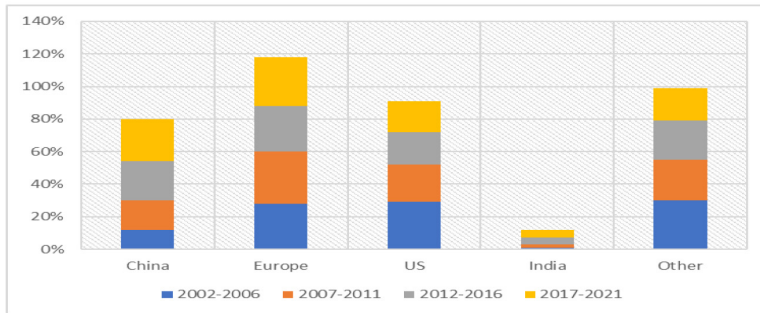


Figure 1
Percentage of Global Publications

4.0 Methodology

The methodology is divided into two parts:

4.1 Bibliometrics Analysis

Bibliometric analysis, a mixed method tool, is a rapidly developing method of research worldwide (Roig-Tierno et. al. 2017). This section provides an overview of AI-based luxury market research. Then comes bibliometric study of accessible publications.

4.1.1 Analysis of Publication Count from the year 2002-2021

This section gives a full bibliometric study of available publications. Many scholars have sought to study and solve problems in the field of luxury using AI concepts in recent years (as shown in Figure 1). It shows many researchers worked for AI in luxury sector. As shown in the graph below, scholars' interest in the topic is almost increasing as AI technology advances and its rising use in luxury industry.

4.1.2 Statistical Analysis

Publication Type Based Statistical Analysis

Based on the information gathered on the publication count (as evidenced in Table 1), chapters and journal articles contribute the most towards luxury sector utilising artificial intelligence, as evidenced in Figure 2. Conference proceedings publish only some information. Conference review, monograph, preprint and editorial produce negligible publications.

Table 1
Publication Type using AI in
Luxury

Type of Publication	No. of Publications
Article	167
Review	1
Conference Proceeding	38
Chapter	108
Preprint	3
Monograph	5
Edited Book	1

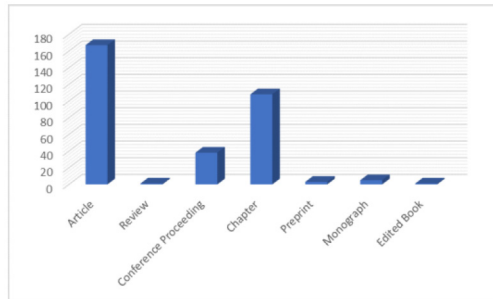


Figure 2
Analysis of Publication Types

Citation based Analysis

Citations are an important metric of a published work's usability and should be considered for study. Table 2 shows the citation count each year. It shows a total of 2795 citations for considered publications. As evidenced in Figure 3, the maximum percentage of citations were done in the years 2020 and 2021.

Table 2
Publication Citations using
AI in Luxury Sector

Year	Citations
<2017	615
2017	187
2018	271
2019	452
2020	842
2021	780
Total	2795

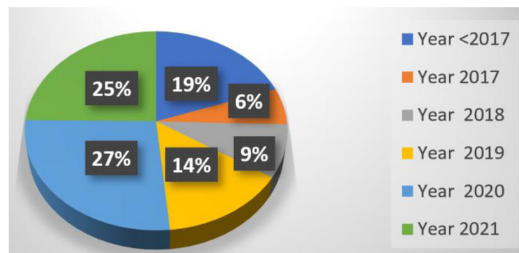


Figure 3
Analysis of Publication Citations

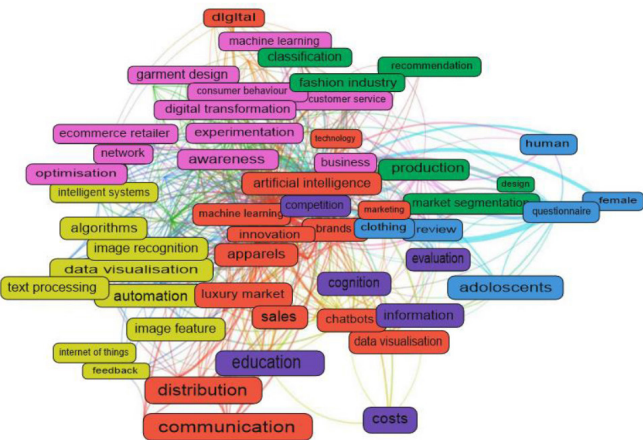


Figure 4
Visualization of Keywords and Source labels

4.1.3 Network Analysis

This is done using software applications like *VOS viewer*. Nodes indicate associations or links amongst distinct properties in network visualizing layouts.

Figure 4 depicts network mapping for all keywords and source labels. Nodes (keywords from reference headings) are represented by frames. 5 is the minimal keyword occurrence limit. The image depicts 6 clusters in varied colours.

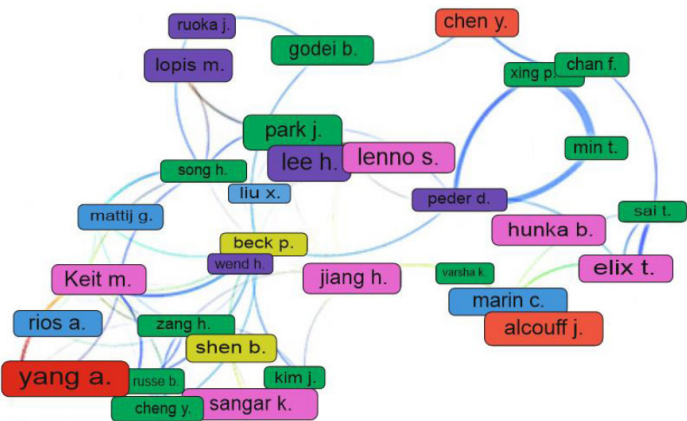


Figure 5
Author and Co-authors-Work Flow

Figure 5 indicates the author and co-author joint working flow of data. The dimensions of the nodes measure the number of mutual citations between the papers. 3 is the minimal author's file occurrence limit.

4.1.4 Report Summary on Bibliometric Analysis of AI for Luxury Fashion

Solving issues relating to luxury market and assisting in business decisions is vital. Artificial intelligence is a great answer in many fields. So, luxury sector is increasingly using AI. The authors used a bibliometric method for AI based luxury market analysis, thereby identifying the acceptance of AI in this sector. The study was analysed to find out critical insights such as publication volume, keywords, publication type and citation analysis. It also provides network visualisation, using VOS viewer tool, so as to learn about relationships between parameters like keyword-source title and author-co-authors.

4.2 Burberry: A Case Study

The second part involves a case study analysis, evaluating reports, conference papers, official company internet sites, academic journals, books and magazines. By analysing case studies, scholars can gain a complete understanding of complicated occurrences and develop an investigation that explains the “why” and “how”. This study revealed how *Burberry* shaped AI tools to boost the fashion system. Using this method of study, companies can see how AI can help them turn their established business models into creative ones.

Established in 1856

Headquarter: London

Collections: Ready to Wear, leather goods, footwear, clothing, accessories, eyeglasses, perfumes and beauty products.

Website: www.burberry.com

Burberry is a London-based global luxury brand. They create luxury apparel, leather goods, accessories, perfumes and makeup products using cutting-edge technology. Throughout its 165-year history, Burberry has been driven by their common belief in the power of creativity. Unlike other luxury firms, Burberry has chosen to invest in and integrate Machine Learning into its digital strategy.

4.2.1 Applications of AI used by Burberry

Launch of Facebook Chatbots: Burberry has been giving data-driven customised product suggestions online and in stores since 2006. By 2015, these campaigns apparently increased repeat purchases by 50%. BURBERRY debuted Facebook chatbots during LFW 2016. These “smart assistants” worked similarly to Amazon’s Alexa, selling things from the latest collection and showing behind-the-scenes inspirations. The chatbot could respond to user-generated sentences beyond pre-set buttons, showing natural language processing integration. Increasingly, organisations were switching from traditional customer support models to chatbot digital solutions (Forbes, 2017), due to several benefits as shown in Figure 6.

WeChat mini-programme: In July 2020, the first Social Retail store opened in Shenzhen, China. The shop appeared to be a destination of exploration, designed to encourage and thrill customers by allowing them to connect with the product and brand in novel and intriguing manner.

Visitors were invited to engage with the site and express their opinions on WeChat through the mini-programme. Customers could use the product swing labels to access additional content, retail excursions and a QR code reader. QR codes reveal additional content and were narrative. Each product category has its own QR code. Screening these barcodes sends information to display displays, enhancing the in-store experience. Clients could also schedule an appointment, meetings and meals at Thomas’ Cafe, their in-store restaurant and community centre, using the WeChat mini-program.

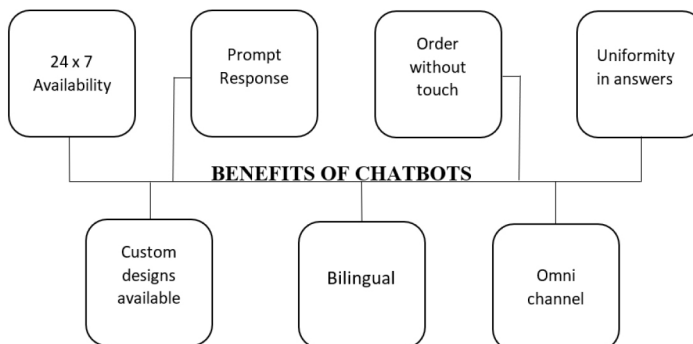


Figure 6
Benefits of Chatbots

Face recognition: It is used to recognize a consumer visiting a store so that the sales associate may quickly access their buying antiquity, likings and recommendations to give the most personalised experience possible (ODDONE, 2019).

Counterfeiting is being combated: Burberry is one of the world's greatest imitated brands, so it's no surprise that they already using AI and machine intelligence to combat it. As stated by Marr, B. (2018), the brand uses Entrupy's picture recognition technology to determine whether or not a product is authentic. It accomplishes so by examining minute features in texture and weave and can allegedly detect a fake with 98 percent accuracy. So vendors selling counterfeit goods can be immediately shut down and prosecuted.

4.2.2 Results and Discussion

Burberry's emphasis on decoding algorithm was clearly an essential strategy that helped the brand become one of the most renowned in the globe. It continues to draw attention due to rising sales volume, unique accomplishments that distinguish itself apart from rivals and a significant growth in market valuation.

- *Digitized Environment:* Customers will soon become accustomed to AI as we move towards a more digital world. According to this notion, even the most hesitant and disconnected consumers of tomorrow may be lured by AI. Thus, the role of strengthening is profoundly challenged as changing one or more of their attitudes, actions, or beliefs includes making the connection between two aspects congruent.
- *Reduced offline retail trade:* Offline retail is falling in China and the US, but online luxury sales are predicted to increase by 25% through 2025. As everything becomes machine dependent, unemployment will rise. Online sales have exploded in recent years, posing a serious threat to traditional retail. Online shops are redefining the conventional customer experience by using modern technologies, including AI.
- *Threatening of workmanship:* The humans behind the products are often forgotten in today's machine-driven society. Digital processes seem to attract customers more. Each Luxury product has an artisan who crafts it distinctive and revives age-old traditions. Using AI to create a luxury product is taking the artisan's knowledge.

- *Expanding the target market*- After years spent focusing on the wealthy sector, luxury fashion businesses are increasingly contemplating the mainstream market. As a result, the number of clients, shopping habits and interactions are rapidly increasing.
- *Omni - channel is the new reality* (ODDONE, 2019):Luxury storefronts are no longer the primary interface for elevated brands and their wealthy patrons. According to a study by Bain & Company, Boomers and Gen Z accounted for 85 percent of global premium development. Customers that are affluent are prepared to pay a higher price for uniqueness and recognition and they want to receive it all through a flawless, pleasant and engaging user experience.

5.0 Conclusion and Scope

Because of the vast range of applications, AI is perhaps the most effective and reliable tool for achieving these objectives. In actuality, Artificial Intelligence has already ushered in a big technological change in this industry. In the luxury retail industry, artificial intelligence is expected to be a key differentiator. The potential for AI adoption in luxury e-commerce appears to be apparently boundless. We have already experienced the benefits of AI; humanity has advanced greatly. Machines can now analyse data in sophisticated ways and complete complex tasks without human assistance. Thus, AI in retail can benefit both companies and consumers.

The application of AI in fashion is helping to digitalize the luxury business. It influences several elements in real-world settings such as customer buying behaviour, demand forecasts and optimal pricing. This research is crucial in terms of application and efficiency. Based on research, artificial intelligence for fashion analysis has gained prominence in recent years. Luxury firms must devise multi-faceted strategies to cater to an ever-widening customer base.

But such widespread use of technology contradicts with one of the key aspects attributed to luxury in literature: workmanship. A luxury or fashion brand's products are distinguished by their excellence, individuality and uniqueness. Industrial experts' promotional activities to encourage workmanship have been investigated. The main reason for this version to adopt new technologies is a lack of knowledge regarding AI's performance and ecological benefits. Thus, marketers must educate consumers on what Artificial Intelligence is and the benefits and drawbacks

of using it, reducing bias and thus the negative impact on luxury product perception.

AI certainly can be used to personalise the consumer journey from discovery to checkout. Designers will likely be supported and augmented by AI technologies rather than be replaced by them. While AI may eliminate certain jobs, it will also generate new ones. AI's potential is growing and the future holds more advanced technology. Amazon is currently developing cashier-less stores in the US. Thus, buyers could make it happen for the customers to upload their pictures online and try on clothes.

As per Luxe Digital, *"AI-powered customisation has become one of the driving forces to reshape luxury e-commerce from 2019 and far beyond."*

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