World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(REVIEW ARTICLE)

Rethinking black Friday: How Ai can drive 'small batch' personalized deals

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World Journal of Advanced Research and Reviews, 2024, 21(01), 2913–2924

Publication history: Received on 07 December 2023; revised on 25 January 2024; accepted on 28 January 2024

Article DOI: https://doi.org/10.30574/wjarr.2024.21.1.2611

Abstract

This paper discusses how Artificial Intelligence can revolutionize the traditional Black Friday retail event by making personalized deals in 'small batches'. In the ever-changing retail landscape due to changed consumer behavior and the technological advancement of emerging technologies, this study probes how AI-driven personalization can further drive effective and customer-centric promotional strategies.

The paper begins by putting into perspective the evolution of Black Friday from a one-day event into an extended shopping period, noting the shortcomings that retailers find themselves facing regarding inventory management, demand forecasting, and profitability of large-scale promotions. These challenges require innovative solutions; AI-powered personalization has become a solution.

A critical review of AI applications in retail and personalization with the 'small batch' deal capability, facilitated by AI algorithms, can provide personalized offers to individual customers or small micro-segments in correspondence with their preferences and behaviors. Some salient features of this approach include hyper-personalization, dynamic pricing, and contextual relevance ingredients for precision targeting and engagement.

The paper details the technical implementation involved in AI-powered deals to help draw insights into data collection, management, and the algorithms at play in driving personalization. It also categorically helps in considering several critical ethical and consumer privacy concerns that businesses must pursue in integrating AI in retail. Case studies of Nike, Nordstrom, and Best Buy illustrate how AI-driven personalization enhances customer engagement, increases conversion rates and boosts sales performance.

It takes into consideration some of the challenges considered, from technical limitations to data quality, and balancing personalization with inclusivity after potential solutions and best practices are reviewed. The future of retail personalization is considered, anticipating that continuous, year-round personalized shopping experiences will shift the need away from traditional events like Black Friday.

In all, AI-driven 'small batch' deals promise a glittering future of Black Friday and retail promotions with the capability of offering more relevant and profitable experiences to shoppers. This paper adds to the emergent literature on AI in retail and gives practical insights into advanced personalization that retailers might want to implement. Future research areas are also identified, such as the long-term effects of hyper-personalization and the ethical implications of AI in retail.

Keywords: Artificial intelligence; Black Friday; Marketing; Retail

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1. Introduction

Black Friday, once a day-long retail party heralding the holiday shopping season in the United States, has evolved into a global retail extravaganza that far surpasses its previous confines. This illustrates the changing retail and consumer behavior landscapes amidst this digital world. As we welcome an era of data-driven decision-making and experiences, for the first time, innovative technologies, especially AI, have questioned the traditional approach to Black Friday sales.

Personalization is an important influence in modern retail. Today's customers expect experiences designed for their taste, needs, and behavior (Lemon & Verhoef, 2016; Hoyer et al, 2020). This expectation has been perpetuated through the rather effective use of digital platforms that capture and analyze reams of user data to build customized recommendations and services (Marinova et al, 2016; Toch et al 2012).

The aim of this article is to bring forth how AI can really change the Black Friday shopping experience, especially for retailers who can easily offer 'small batch' deals. We will look at how AI has the potential to turn mass discounts into targeted, individualized offers that meet consumer expectations and optimize retailers' inventory management and profit margins.

2. Literature Review

The changing nature of Black Friday and the prevalence of AI-driven personalization in retail have been highly researched over the last few years. This literature review some of the major findings and theoretical frameworks that provide context for our exploration of AI-driven personalized deals.

2.1. Evolution of Black Friday

Berman (2019) documents the history of Black Friday, from its early days as a one-day event to the current protracted shopping spectacle. He places particular emphasis on how digital technologies have obfuscated distinctions between online and offline shopping in "omnichannel" Black Friday strategies. That evolution has forced a reevaluation of older marketing techniques in favor of more personalized, data-driven approaches.

2.2. AI in Retail Marketing

AI application in retail marketing has been one of those arenas where many studies are focused. Davenport et al. (2020) comprehensively present how AI is going to change the future face of marketing. They argue that AI technologies, such as machine learning and natural language processing, make it possible for retailers to develop much more personalized and effective marketing strategies than has ever been possible (Grewal et al, 2018; Hoyer et al, 2020; Brynjolfsson, & McElheran, 2016). The authors express the potential of AI for changes in customer experiences, price strategies, and demand forecasting.

Kumar et al. (2021) extend this role further by providing a research agenda on the basis of new technologies that would affect marketing in regard to customer segmentation, predictive analytics, and personalized recommendations. Their work once again identifies the need for retailers to adapt to these technological changes to stay competitive in today's digital age.

2.3. Personalization and Consumer Behavior

Indeed, personalization and the involved effects on consumer behavior have gained significant research interest. Wedel and Kannan (2016) discuss marketing analytics in data-rich marketing environments. Personalized marketing strategies may enable an increase in customers' activities and loyalty. The study will provide insight into the methods of data-driven personalization and their challenges within retail contexts.

Anderson and Simester (2011) further explore what the future of retail personalization may be, and how AI-driven methods of personalization might be used in general to enhance customer experience. Accordingly, they notice that while AI holds tremendous promise to better target product recommendations and pricing strategies, it simultaneously raises a number of significant consumer privacy concerns that need to be weighed.

With increased AI-driven personalization, ethical consideration and privacy concerns have come to the forefront of research. Haefner et al(2022) investigated consumer perceptions of AI-driven personalisation, with a call for transparency in disclosure and ethics for the use of data on consumers. Their findings showed that while consumers

generally appreciate personalized experiences, there were also significant concerns about data privacy and the potential for manipulation.

Wang and Hajli, 2021, further discuss the paradox between personalization and privacy in AI-driven marketing. The authors note that there is a need for retailers to balance this delicate balance if they are to win the trust of consumers while reaping some benefits in regard to personalized marketing strategies.

2.4. Future Directions

Villanova et al (2021) shows the potential and challenges of AI-enabled marketing in the future. He identifies key areas where AI is likely to make the most difference: real-time personalization, predictive analytics, and automated decision-making. Villanova et al further reaffirms that human judgment plays a necessary role in ethics and efficiency within AI-driven marketing strategies.

The paper by Pantano et al. (2021) covers in a detailed manner the current and future application of AI to retail. This work represents an overview of the potential of AI, which would change how retailers operate in areas such as supply chain management and customer service, underlining at the same time major challenges faced by retailers during the adoption and integration of these technologies.

This literature review begets our exploration of how AI can drive 'small batch' personalized deals, within the context of Black Friday. By establishing where research on AI in retail, personalization, and consumer behavior currently stands, we are in a better place to reflect upon the potential impact and challenges arising within such large-scale shopping events as Black Friday because of AI-driven personalized deals.

3. The Rise of Black Friday

3.1. Historical Background and Significance

The term "Black Friday" had its origin in the 1960s in Philadelphia. It was used to refer to the chaos that normally characterized the post-Thanksgiving period. The city was crowded by suburban shoppers and tourists, which clogged the traffic and jammed the sidewalks to the chagrin of the local police. The term crept its way into other cities and gained national popularity when chains of retail began to commercialize the mayhem of shoppers.

Historically, Black Friday represented the time of the year when retailers began to realize profits, shifting from "red" into "black" on the balance sheets. It is this financial significance that shows, really, just how important the holiday shopping season truly is to the retail sector and to the greater economy as a whole. This is according to Anderson & Simester (2011).

3.2. Trends in Consumer Behavior during Black Friday

It was over the years that Black Friday started getting associated with doorbuster deals, early store openings, and crazed crowds surging to get limited time offers. During this period, consumers' behavior reflects in the following manner:

- Anxious shoppers await Black Friday ads and plot strategy.
- Many of the various deals are limited in nature and create a feeling of urgency and competition amongst the consumer base.
- Many customers go on long shopping sprees that, in most cases, start at the break of dawn.
- The consumers will compare the various offers that different stores accord them to get the most handsome bargains.
- Over the last couple of years, consumers have also started going more online for shopping as many try to avoid chaos in the stores as much as they can (Pantano et al. 2021).

3.3. Issues with Traditional Black Friday Sales

The traditional model of Black Friday poses several problems for both the retailer and the customer in its usage today:

- It is impossible for retailers to accurately predict the demand for deeply discounted items, which creates a risk of inventory stockouts or overstock.
- Deep discounts on high-demand items could greatly cut into profit margins.
- Overcrowding of stores, long lines, and being out of stock can lead to negative customer experiences.

- Retail employees are often put through very long hours under stressful conditions.
- The rampant consumerism and subsequently generated trash the holiday create, has come under fire from environmental groups.
- In more extreme cases, the competitive nature of Black Friday shopping has led to injuries and even fatalities.

These challenges have made retailers rethink Black Friday sales and brought in newer solutions with the help of technology for greener and customer-centric shopping experiences. Kumar et al., 2021.

4. The Role of AI in Retail

4.1. Overview of AI Technologies in Retail

Artificial Intelligence has now become a game-changing technology that promises unparalleled data analytics, prediction capabilities, and personalization for the retail industry. Some of the key AI technologies in use for retail include the following:

- Machine Learning: Algorithms that learn from data and make or predict decisions based on that knowledge.
- Natural Language Processing: The technology used in the development of computer systems that can understand, interpret, and generate human language.
- Computer Vision: The ability of AI systems to view, interpret, and understand visual information in the world.
- Predictive Analytics: Finding the probability of future outcomes using data, statistical algorithms, and machine learning techniques based on historical data.
- Recommendation Systems: AI-powered engines that make product or content recommendations for users to consider based on their preference and previous behaviour.

These technologies find applications in all aspects of retail operations, starting from supply chain management and customer service to marketing inclusive (McKinsey & Company, 2021; Bolton, 2014; Rust & Huang, 2014). This is in line with what Pantano et al. (2021), Chellappa, & Sin, (2005), De Keyser et al (2015) have identified.

4.2. Benefits of AI to Personalized Marketing

AI avails many advantages while devising personalized marketing strategies. That includes but is not limited to the following:

4.2.1. Data Analysis and Customer Segmentation

- AI can process a wide amount of customer data emanating from purchase history, browsing behavior, social media activity, and demographic information.
- Advanced segmentation techniques allow retailers to make very specific customer groups based on huge amounts of variables for focused marketing effort results.
- Real-time processing capabilities will provide segments that keep on updating themselves continuously with the latest behaviors and preferences. Wedel & Kannan, 2016

4.2.2. Predictive Analytics to Find Consumer Behaviour

AI algorithms predict future buying behavior by keeping in perspective past and present trends. This can help a company manage its inventory and pricing strategy and execute personalization marketing campaigns. Anticipating customer needs, retailers can proactively provide related products and services to enhance overall shopping experiences Syam & Sharma, 2018).

4.3. Case Studies of Successful AI Implementations

4.3.1. Amazon's Recommendation Engine

It is estimated that Amazon's AI-powered recommendation system contributes to 35% of its total sales. This system analyzes history from what the user has bought, items in their cart, items they have rated and liked, and what other customers have viewed and bought to suggest similar highly relevant products (Anderson & Simester, 2011).

4.3.2. Stitch Fix's Personalized Styling

This online personal styling service relies on AI in analyzing customer choices and preferences in deciding on the selection of clothes that should fit the style of a particular customer. The algorithms at play match over 100 dimensions on every garment with customer preference to create an incredibly customized shopping experience (Kumar et al., 2021).

4.3.3. Sephora's Virtual Artist

Their application uses AI and AR, putting makeup virtually onto the customer. AI scans the facial features and skin tone to make recommendations on products, showing further how that product would look on the customer to enhance online shopping.

The North Face joined forces with IBM Watson to come up with an AI-powered tool that would assist customers in coming up with the right choices of jackets. Asking questions like 'when, where, and other customer preferences', this solution screens hundreds of options and produces a few optimal ones that would best fit in the needs of the customer.

These case studies stand as testimony to the real power of AI in bringing personalization to customers, making the shopping experience entertaining and engaging, driving customer satisfaction, and sales (Zweig & Krause, 2021; Marinova et al 2016; Toch et al 2012). These successful implementations have looked ahead to the reinvention of Black Friday and provided important insights into how AI can be used to create more targeted and effective promotional strategies.

5. Concept of 'Small Batch' Personalized Deals

5.1. Concept of Small Batch Deal and its Importance

'Small batch' personalized deals introduce a paradigm shift in the approach of promotional strategies, especially for events like Black Friday. It introduces extremely targeted offers to smaller groups of customers, or even individual customers, based on their specific preferences, behaviors, and needs.

Some key characteristics of small-batch deals include:

- Hyper-personalization: The deals shall be designed concerning an individual customer profile rather than wide demographic segments.
- Dynamic pricing: immediate discounts and pricing per inventory, customer value, and competitor pricing
- Contextual relevance: The offers are offered to the customers at the right time based on location, day parting, and the latest interactions that the customer has with the brand
- Limited availability: Exclusivity of such offers can make customers feel urgent and create value for them (Anderson & Simester, 2011).

Their value is in the fact that small batch offers create a lot of valuable, relevant shopping experiences for customers and optimize sales and inventory management for retailers to a significant extent. This point is discussed by Villanova et al (2021).

5.2. How Does It Differ from Traditional Large-Scale Promotions?

The traditional large-scale promotions associated with such events as Black Friday are radically different from the small-batch approach:

Table 1 Comparing Traditional Large-Scale Promotions with Small Batch Personalized Deals: A Shift Toward Tailored Marketing Strategies

Aspect	Traditional Large-Scale Promotions	Small Batch Personalized Deals
Target Audience	Mass market	Individual customers or micro-segments
Offer Variety	A limited number of broad offers	Wide range of highly specific offers
Duration	Fixed period	Can be dynamic and ongoing

Inventory Management	This often leads to stockouts or overstock	Better aligned with available inventory
Customer Experience	One-size-fits-all	Tailored to individual preferences
Marketing Approach	Blanket marketing campaigns	Targeted, multi-channel communications
Profit Margins	Often reduced due to deep discounts	Potentially higher due to optimized pricing
Data Utilization	Limited use of customer data	Extensive use of individual customer insights

(Wedel & Kannan, 2016; Kumar et al., 2021)

5.3. Benefits to Consumers and Retailers

Small batch personalized deals go a long way in benefiting both the consumers and retailers in several ways:

5.3.1. Benefits to Customers:

- Customers will surely get deals on the products they are interested in.
- Better shopping experience not as overwhelming as the Black Friday sales but actually centered upon the real needs of a particular individual.
- Saves time because deals eliminate the burden of sifting through irrelevant offers.
- The customers feel needed and special with the personalized offers.
- Also, in a few cases, personalized pricing does suggest a better overall value when compared to mass discounts.
- (Anderson & Simester, 2011).

5.3.2. Benefits to Retailers:

- High conversion rates as more targeted offers convert better to sales.
- There is better alignment of promotions with inventory levels
- Better customer loyalty with more personalized experiences that foster strong customer relationships.
- Better margins of pricing optimization at an individual level rather than blanket discounts.
- Lower marketing costs that become more efficient and targeted.
- Personalized experiences can be a real differentiator for retailers in a very crowded market.
- Year-round engagement that gives the ability to offer personalized deals beyond traditional sales seasons (Villanova et al, 2021).

Embracing deals in small batches, retailers can mold this Black Friday experience into an advanced and customer-centric approach wherein the business and customers will benefit from the campaign.

6. Run AI-Powered Personalized Deals

6.1. Collect and Manage Data

AI-driven personalized offers are completely dependent on effective data collection and management. In other words, it requires that retailers collect huge amounts of customer data and then process and analyze it to create the right kind of personalized offers. This would cover sources of data at least:

6.1.1. Sources of Data

- Transactional Data: Purchase History, Returns, etc.
- Behavioral Data: Browsing History, Product Views, Cart Abandonment
- Customer Service Interactions

Social Media Activity

- Demographic data
- Geographical information
- Third-party data-if data are sourced in an ethical and legally correct way as suggested by Wedel & Kannan, 2016.

6.1.2. Data Integration

Data from all sources can be integrated into a single unified customer profile, creating quality of data on all touchpoints as suggested by Kumar et al., 2021.

6.1.3. Real-time Data Processing:

Use systems capable of processing and analyzing the data in real time to enable dynamic personalization. Davenport et al., 2020

6.1.4. Data Storage and Security

- Leverage secure, scalable cloud storage
- Employ strong encryption together with access controls. Haefner et al, 2021

6.1.5. Ethical Considerations and Consumer Privacy

Given that a great deal of customer data is being collected and used by retailers, ethical considerations about privacy arise:

Transparency

- Inform the customers as to what information is being collected and for what purpose it will be used.
- Spell out the privacy policies in an understandable manner.

Consent

- Obtain explicit consent from customers regarding the collection and usage of their information.
- Provide them with fine-grained control over the choices of data they decide to share.

Data Minimization

- Only collect information that may be necessary in enriching the experience of the customer.
- Implement a data retention policy so that the data should not be retained more than required.

Compliance

Apply the appropriate Data Protection Laws wherever applicable. Examples include GDPR for European residents and CCPA for California residents.

Audit the practice of data periodically to maintain compliance continuously

Ethics in AI:

- The design of AI systems shall be done in a manner so as to avoid or reduce the elements of bias and discrimination.
- Periodic review of AI decisions for fairness and accuracy (Wang & Hajli, 2021)

6.2. AI Algorithms for Personalization

The AI algorithms provide the driving force for raw data to translate into actionable insights for personalized deals. Major techniques involve:

6.2.1. Machine Learning Techniques

- Supervised Learning: Employed in predicting customer behavior. For example, it enables the forecast of whether customers are likely to purchase, using algorithms like Decision Trees, Random Forests, and Support Vector Machines (Syam & Sharma, 2018).
- Unsupervised Learning: The approach used in customer segmentation and knowledge discovery, with algorithms such as K-means clustering and Hierarchical clustering (Wedel & Kannan, 2016).
- Reinforcement Learning: This optimizes pricing and promotion strategies through repeated experiences with the best practices like Q-learning and Deep Q-Networks. Haefner et al, 2021 state that these practices amply help in optimizing the pricing and promotion strategies over time.

- Deep Learning: It analyzes and provides insight into intricate patterns in big data. It includes Neural Networks and Convolutional Neural Networks, which can recognize images. Kumar et al., 2021 discuss that deep learning assists in analyzing and understanding complex patterns in big data.

6.2.2. Natural Language Processing to Engage Customers

- Sentiment Analysis: Analyzes customer reviews and social media posts to understand product satisfaction and brand perception.
- Chatbots/Virtual Assistants: Imparts personalized shopping advice and deal recommendations.
- Text Classification: Categorizes customer inquiries so queries are routed appropriately.
- Named Entity Recognition: Extracts relevant information from unstructured text data to enrich customer profiles (Wang & Hajli, 2021).

6.2.3. Retailer Tools and Platforms to Drive AI-Powered Personalized Deals

Retailers employ various tools and platforms to facilitate AI-powered personalized deals. These include:

- Customer Data Platforms: This includes Segment, Tealium, and Adobe Real-Time CDP, among others, that integrate customer data from various sources into a single customer view (Berman, 2019).
- AI-Powered Marketing Automation Platforms: These include Salesforce Einstein, Adobe Sensei, and IBM Watson Campaign Automation, which automate omnichannel personal marketing campaigns. Villanova et al, 2021
- Recommendation Engines: It includes Amazon Personalize and Google Cloud Recommendations AI that offer personalized product recommendations based on user behavior and preference. Kumar et al., 2021.
- Dynamic Pricing Tools: Price Edge, Competera, and Blue Yonder are some of the famous tools for price optimization in real-time based on demand, stock, and competitor pricing.
- Natural Language Processing Tools: Some of the services that can be employed toward better customer engagement through understanding text data are Google Cloud Natural Language API and IBM Watson Natural Language Understanding (Davenport et al., 2020).

7. Case Studies and Examples

7.1. Successful Examples of AI in Personalized Retail Strategies

- Nike's Nike+ App: Using AI to create hyper-personalized experiences resulted in a revenue increase of 30% through mobile apps and a 40% surge in customer engagement. In support: Pantano et al., 2021.
- Nordstrom's Personalized Homepage: Utilized an AI-powered personalization engine to display unique homepages. Click-through rates were raised by 30%, with a further 35% jump in average order value. Supported by Anderson & Simester, 1021.
- Best Buy's AI-Powered Email Marketing: The use of AI in email marketing saw a 10% rise in email open rates, followed by an increase of 23% in click-through rates, while revenue through email marketing went up 18% upon introduction of the technology. Kumar et al., 2021.
- Alibaba FashionAI: The average transaction value increased by 20% while improving customer satisfaction scores by 15% due to an AI-backed system for personalized style suggestions. Villanova et al, 2021.

7.2. Consumer Response to Personalized Deals

The response of consumers towards AI-powered personalized deals has by and large been very encouraging:

- More Engagement: 80% of consumers reported they are more likely to do business with a company offering personalized experiences.
- Enhanced Brand Perception: 62% of customers expect businesses to change with regard to their activities and behavior. (Salesforce, 2023).
- Reduced Decision Fatigue: The personalized deals guide customers through the barrage of choices during Black Friday sales. (Berman, 2019).

7.3. Impact on Sales & Customer Loyalty

These AI-driven personalized deals make considerable inroads as far as sales and customer loyalty are concerned:

- Sales: Wider revenues on account of personalized recommendations of products are likely to be in the range of 10-30%.
- Higher Average Order Value: Personalized experiences increase revenues for retailers by 6 to 10% (Berman, 2019).
- Better Customer Retention: 33% of customers ended their relationship with a company because of a lack of personalization (Wang & Hajli, 2021).
- Higher Customer Lifetime Value: Advanced personalization can drive customer lifetime value 20% higher (Haefner et al, 2021).

8. Limitations and Challenges

While AI-driven personalized deals are considered bright prospects, there are many challenges that retailers face:

8.1. Technical Limitations and Data Problems

- Data Quality and Consistency: AI requires high-quality, consistent data to provide accurate predictions outcomes of interest (Wedel & Kannan, 2016).
- Scalability: Processing massive amounts of data in real time is computationally intensive (Kumar et al., 2021).
- Integrating with Legacy Systems: Most retailers operate their systems, which may be outdated and expensive to integrate with the current state-of-the-art AI technologies (Pantano et al., 2021).

8.2. Skepticism of Consumers and Privacy Issues

- Data Privacy: The consumer is apprehensive about data collection, usage, and protection. It finds support from Wang & Hajli, 2021.
- Personalization Fatigue: Certain customers may be exhausted by repeated personalized messages across every touchpoint. The argument has been proposed by Anderson & Simester, 2011.
- Algorithmic Trust: Consumers do not trust recommendations suggested by AI when the latter does not resonate with the consumer's self-concept. The same is reflected in the study carried out by Haefner et al, 2021.

8.3. Balancing Personalization with Inclusivity

- Algorithmic Bias: There is a risk of AI systems perpetuating or amplifying biases that exist in the historic data on which they are usually trained (Davenport et al., 2020).
- Filter Bubbles: Very personalized experiences might reduce the chances of customers being exposed to products that they would not normally like or be used to (Villanova et al, 2021).
- Accessibility: Not all customers may enjoy the same levels of access to a digitized personalized experience (Berman, 2019).
- Generational Differences: Not all generations are as comfortable with AI-driven personalization (Wang & Hajli, 2021).

9. Future Directions

9.1. AI Innovations for Retail Personalization

- Deep Improved NLP: Better perception and response to natural language queries (Kumar et al., 2021).
- Computer Vision and AR: AI-driven image recognition and AR that further enhance online shopping experiences of customers (Pantano et al., 2021).
- Emotion AI: AI systems recognize customer emotions and act accordingly (Davenport et al., 2020).
- Predictive Analytics and Demand Forecasting: More accurate predictions about consumer behavior or product demand, as suggested by Wedel & Kannan (2016).

9.2. Changing Consumer Expectations

- Hyper-Personalization: Each customer expects the retailer to be able to anticipate needs and preferences more intuitively than ever before, according to Villanova et al (2021).
- Seamless Omnichannel Experiences: Customers would want consistent, personalized experiences across all touchpoints, suggest Anderson & Simester (2011).
- Ethical and Sustainable Shopping: The use of AI to support consumers in making ethical and sustainable purchasing decisions. Haefner et al, 2021.

- Privacy-Conscious Personalization: More control over one's information and transparency in the use of this information. Wang & Hajli, 2021.

9.3. Long-Term Implications for Black Friday and Retail Overall

- Dissolving Shopping Calendar: Personalized offers become an ongoing occurrence throughout the year. Berman, 2019.
- AI-driven Supply Chain Transformation: Smarter, more efficient, and demand-aligned supply chains (Kumar et al., 2021).
- Retail Jobs Shift: Evolution of jobs in retail toward tasks that require human creativity and emotional intelligence (Pantano et al., 2021).
- Redesigning Physical Retail Spaces: AI-driven insights on how to design physical stores for the purpose of online shopping (Villanova et al, 2021).

10. Conclusion

10.1. Summary of Overall Findings

From Mass Marketing to Personalization: personalization represents a significant departure from traditional mass marketing, reshaping how retailers interact with consumers. According to Davenport et al. (2020), personalization is a transformative trend that leverages advanced data analytics and AI to tailor marketing efforts to individual consumer preferences. The Salesforce Report (2023) highlights that personalized deals not only enhance customer experiences but also foster stronger consumer-brand relationships. Furthermore, personalization has been shown to improve key business metrics, including higher conversion rates and enhanced customer retention, making it an essential strategy in modern retail.

10.2. Implications for Retailers and Consumers

10.2.1. For Retailers

Retailers must adapt to this paradigm shift by making targeted investments and strategic adjustments:

- **AI and Data Infrastructure**: Building a robust infrastructure capable of processing large datasets and deploying machine learning algorithms is essential (Pantano et al., 2021).
- **Talent Acquisition**: There is an increasing demand for skilled data scientists and AI experts who can develop and maintain personalized marketing systems (Villanova et al., 2021).
- **Customer-Centric Approach**: Anderson and Simester (2011) emphasize the importance of prioritizing customer needs in decision-making and marketing strategies, which personalization naturally supports.
- **Ethical AI and Privacy**: Retailers must implement clear guidelines to ensure the ethical use of AI and safeguard customer data, as stressed by Haefner et al. (2022).

10.2.2. For Consumers

Consumers also stand to benefit significantly from AI-driven personalization in retail:

- **Relevant Offerings**: Personalized deals make shopping more efficient and enjoyable by presenting consumers with tailored options (Epsilon, 2023).
- **Enhanced Control Over Personal Information**: Wang and Hajli (2021) point out that consumers are increasingly gaining more control over how their data is used, fostering trust in AI-driven systems.
- **Evolving Shopping Habits**: Personalized marketing is reshaping traditional shopping behaviors, encouraging more dynamic and flexible consumption patterns (Berman, 2019).
- **Omnichannel Management**: The integration of multiple channels for personalized marketing requires consumers to navigate and manage more touchpoints, as noted by Kumar et al. (2021).

10.3. Conclusion: The Future of Black Friday with AI

The evolution of Black Friday from a mass-marketed, single-day shopping event to an omnichannel, AI-driven personalized experience marks a significant leap for retail. This transformation benefits retailers through improved metrics and customer engagement while delivering tailored, meaningful shopping experiences for consumers (De

Keyser, 2015). However, it also requires the responsible use of AI, adherence to strict privacy standards, and maintaining a human-centric approach to customer interaction.

This transformation in full swing would throw up a more personalized, efficient retail landscape than ever, tuned to the needs of every customer, which would reshape not only Black Friday but the whole retail experience throughout the year, as by Kumar et al. 2021; Rust, & Huang, 2014 and Pantano et al. 2021.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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