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Understanding Consumer Behaviour in the Digital Era: A Literature Review

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Abstract

In the rapidly evolving digital age, it is crucial for marketers to understand consumer behaviour to develop effective strategies. This literature review explores the complex dynamics that shape consumer behaviour in the digital realm. Based on a comprehensive analysis of existing research, this article explores the key factors that influence the consumer decision-making process, including the impact of technology and artificial intelligence on personalised marketing strategies. Additionally, the role of trust, privacy concerns, and empowerment in shaping digital consumer behaviour is explored. The findings provide valuable insights for marketers seeking to adapt and thrive in an increasingly digital marketplace.

Keywords: artificial intelligence (AI), consumer behaviour, digital marketing, technology integration.

JEL Classification: M31, D11.

1. Introduction

In a timeframe defined by quickly developing technology, the comprehension of consumer conduct constitutes a requirement for the marketers aiming to draw action plans to attain business goals. The digital marketing landscape is significantly reshaped by the integration of novel technologies, for instance artificial intelligence (AI), consumers' interaction with brands and their acquisition decisions being impacted in this sense. In response to these matters, it is highly necessary to obtain a profound understanding of the factors which alter consumer behaviour in the digital space.

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The central goal of this research is to assess the intricate dynamics that decide the behaviour of consumers in the digital age, across the published research. Placing attention on aspects such as the inclusion of new technology in marketing activities, the role of AI in personalising marketing deliverables for consumers, and the impact of trust and privacy issues, this study seeks to offer actionable insights to marketers. Provided that organisations understand these factors, they can become accustomed and flourish in a persistently digital marketplace, as well as to conduct consumer interaction and fulfil their developing needs.

By performing literature review on this subject, the current study ensures an inclusive analysis of the matters, intending to emphasise the main items directing the consumer decision-making process in the digital era.

2. Problem Statement

The main problem of the marketers nowadays is the deeper understanding of the consumer needs in the digital era. Starting from this statement, this research specifically explores how digital interactions and the newest technologies influence consumers' decision-making process, preferences, and loyalty. The main challenge is to synthesise existing research to identify key trends, themes, and gaps in the current researched published until now, thereby laying the foundation for future studies and practical applications in digital marketing and consumer engagement.

3. Aims of the Research

How does the rise of new technologies influence consumer decision-making process regarding trust, privacy, and empowerment?

The purpose of this study is to review the existing literature published based on the digital consumer behaviour subject and to identify common themes and trends regarding the impact of technologies such as artificial intelligence, which are raising ethical problems.

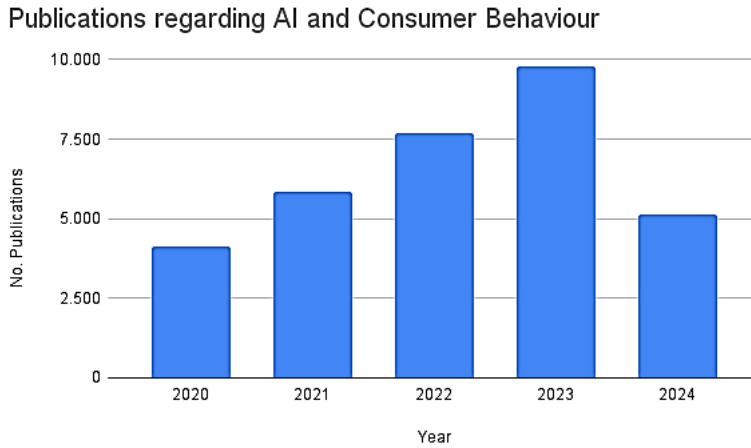
Furthermore, the goal of this literature review is to synthesise the findings into actionable insights for business and researchers.

4. Research Methods

For conducting this literature review, the search strategy included a systematic approach to ensure a comprehensive coverage of relevant studies. The databases used were Google Scholar and Science Direct, which were chosen for their extensive collection of peer-reviewed articles.

The main findings for the articles which describe the use of artificial intelligence on Google Scholar are: 17.600 articles published regarding this topic and its use in consumer behaviour during 2020-2024. From the figure listed below, it can be seen that the interest in the influence of this new technology has increased, especially during the launch of ChatGPT in November 2022 (Acres, 2023).

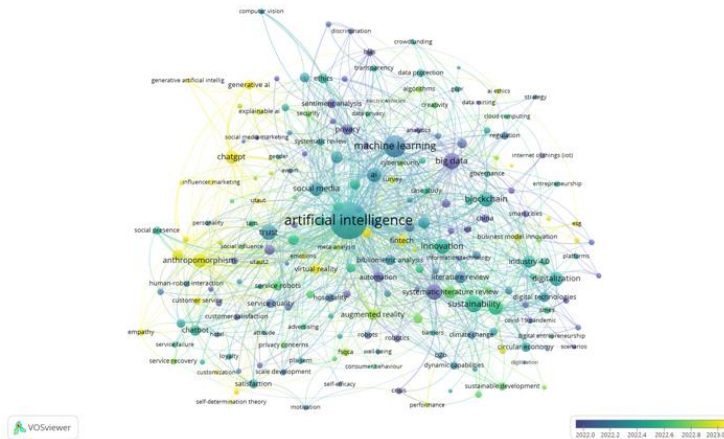
Figure 1. Publications regarding AI and Consumer Behaviour



Source: authors' own calculations based on Google Scholar Data Base.

The keywords were selected by analysing the researched studies found by the key phrase “AI consumer behaviour”, from Google Scholar and Science Direct data base, to determine the main studies and their keywords related to the topic as it can be seen in Figure 2, generated with VossViewer, listed above.

Figure 2. Articles correlation regarding AI and Consumer Behaviour



Source: Cloud Word generated with VossViewer (2024).

Furthermore, the keywords that were included such as “artificial intelligence” (AI), “consumer behaviour”, “digital marketing”, and “technology integration”, were selected. Specific key terms such as “consumer behaviour”, “consumer behaviour in digital era”, “AI in digital consumer” and “technological integration in marketing” were used to refine the search.

In order to focus on the latest developments in the field, only peer-reviewed articles and most of the publications from the past 10 years were used as inclusion criteria to ensure the relevance and quality of the studies examined. This ensured that the results were up-to-date and reflected the current trends.

The exclusion criteria were applied to filter out the non-English publications, articles without empirical data, and consumer behaviour studies on a single region to ensure a broad understanding of the consumer behaviour in the digital age. The purpose of this approach was to bring together a diverse and high-quality set of studies for analysis.

The articles, publications and books which were not excluded are written by relevant researchers in the consumer behaviour subject such as Daniel Kahneman and Jim Blythe.

5. Findings

Nowadays understanding the complexity of human beings is vital in order to survive as a specialist from various domains but also in the dynamics of economic.

The development of technology has grown rapidly starting with the beginnings of 2000 until now and in order to survive in the marketplace, businesses should adapt a strategy where the human is centred in all areas of the strategies developed. To understand the implications of nowadays technology, in the following paragraphs is presented an extended literature review based on consumer behaviour and the understanding of the implications of artificial intelligence in purchase decisions.

5.1 Consumer Behaviour and Cognitive Biases

The American Marketing Association (2024) is defining consumer behaviour as the study of how customers (individuals and organisations) choose, buy, use, and dispose of goods, ideas, and services to satisfy their needs and wants. Consumer behaviour helps marketers understand the factors that influence purchasing decisions. This knowledge can help marketers to identify the products and services which meet consumer needs, and starting from this statement, they can fill the gaps in the market.

The consumer is defined by “*someone who is enjoying the benefits of the product by obtaining it*” (Blythe, 2016). This may include all activities leading up to a purchase, including searching for information about products and services and evaluating alternatives.

The need of understanding the human behaviour behind the purchase decision have gained popularity among neuroscientist researchers by predicting consumer Decisions Empirical research in the field of consumer neuroscience and neuromarketing uses imaging technologies as biomarkers to assess responses to marketing stimuli such as brands, advertisements, and packaging, and to predict consumer decisions (Plassmann et al., 2012).

Based on how cognitive biases and consumer behaviour work, it is more likely that the usual rules and rational model might be ignored, because the conclusions

can be drawn from the similar situation using some logic. This happens from a simplified way of processing the information, influenced by various factors such as subjectivity, emotional, and moral motivations and social influence. In reality, people's biased way of thinking influences their decisions and judgments because it is neither logical nor objective (Hilbert, 2012). This decision-making process might be different from other alternatives. The Eurasian phenomena simplify the decisions by reducing the cognitive instability and its complexity. These Eurasian beliefs may include rules of thumb, educational requirements, intuition, or simple laws. This approach allows speeding up the decision-making process and increasing efficiency. It is easy, fast and convenient to provide information and highlight three important details.

The SOR (Stimulus-Organism-Response) model is used to understand how various external factors affect the internal states of the people and their subsequent behaviour. In the context of online reviews, different factors such as the quality of the information and how similar might seem the reviews, influence the thinking and emotional trust of the consumers. This kind of internal states has an impact of the consumer behaviour, especially on buying intentions and testimonials. Therefore, the SOR model helps to understand cognitive biases by illustrating how external information and context shape internal psychological states and lead to certain behaviours. The model emphasises the importance of building trust elements on online platforms to influence consumer decisions (Wang et al., 2023).

The anchoring effect influences consumer behaviour, because consumers are relying on the initial information (anchors) when they are making a decision. For example, when they need to evaluate the characteristic of a product, consumers are usually using typical values based on memories as anchors. This mental trick can lead to errors: if the real value is higher than the referral value, consumers tend to underestimate it, and if it is less, they overestimate it. This bias affects a variety of judgments, including product selection, willingness to pay, and perceptions of fairness in employee compensation. Therefore, marketing strategies and regulatory policies must take these biases into account to ensure fair and accurate consumer reviews (Ziano & Villanova, 2022).

Extensional neglect in consumer behaviour refers to the tendency not to pay enough attention to size or quantity when evaluating something. Instead, people base their judgments on a representative example or typical situation. This cognitive error exemplifies a situation whereby the number of elements or the length of an experience provokes sensitivity in people. In most situations, such as environmental estimations or painful scenarios, the responses of individuals rely mainly on their affective reactions to representative examples rather than the actual degree or magnitude of the group. This kind of error can lead to inconsistent and erratic decisions because people tend to underestimate larger quantities unless explicitly asked to consider the quantity. (Kahneman et al., 1999).

5.2 Consumer Behaviour in the Digital Era

In the digital age, the various factors which have an impact on consumer behaviour include easy access to online information, e-Commerce businesses, social media influencers, and personalised marketing. Although consumers focus on viral phenomena and general availability, with a more dynamic and complex buying process, consumers can quickly compare products, read reviews, and read comments (Cummins et al., 2014).

It is known that in marketing that product is bought from an impulse which is an unplanned behaviour, determined by a spontaneous and irresistible desire to purchase a product immediately after exposure to a stimulus. In the online environment, this behaviour is intensified by digital stimuli such as promotional offers and positive reviews. The variety and accessibility of the products along with fast payment facilities and digital marketing increases the frequency of impulse buying (Bhakat & Muruganatham, 2013).

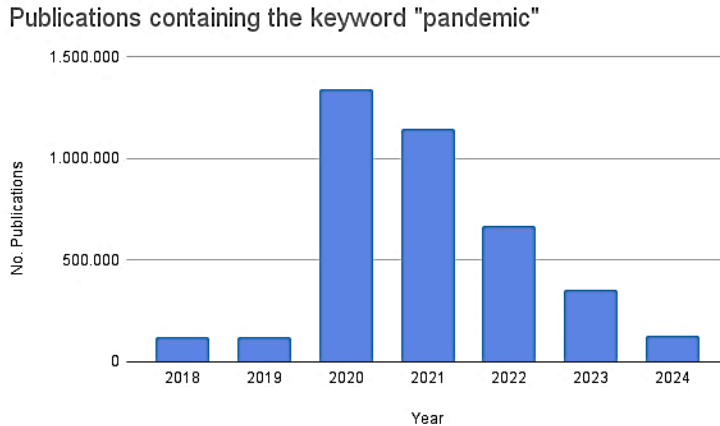
In this new era, the “digital consumer” can be defined as a new category of technological users who have a different mentality and behaviour compared to the traditional users. They are the early adopters, and they are integrating the technology in their daily life. The key factors that define digital consumers include the new skills and opportunities that the digital technology provides them, such as influencing other consumers by sharing opinions and broadcasting content on social media. This empowerment requires companies to reorganise around customer experience and continually create value paths to effectively engage these consumers. Digital consumers operate in a dynamic sociotechnological environment that requires companies to constantly adapt to evolving technology and consumer behaviour (Hafezieh & Pollock, 2023).

The main motivations for online shopping can be divided into two categories: utilitarian and hedonistic. Utilitarian motivations refer to functional, economic, and rational benefits such as convenience, control, availability of variety, economic utility, availability of information, personalisation, payment services, lack of social interaction, and anonymity. These factors greatly increase consumer satisfaction because they fulfil their practical needs and make the buying process more efficient and profitable. On the other hand, hedonic motivations refer to the emotional or experiential desire of customers who seek pleasure and personal satisfaction through the shopping experience. Both types of motivations are very important in shaping online buying behaviour. Utilitarian motivations usually lead to more frequent and better planned purchases (Pires da Silva et al., 2024).

Before 2019, the word “pandemic” was rarely used in scientific studies. However, COVID-19 drastically changed consumers’ behaviour. Despite the concerns and restrictions about the public health, people started looking for safer and convenient ways to buy. This accelerated digital transformation, integrating e-commerce into daily life and fundamentally changing market interactions, forced companies to adapt to new, digital-centric consumer habits. As it can be seen in the bar chart below, the interest in researching a possible pandemic outburst was low, about 240.000 articles were published during 2018-2019. But after the COVID-19

pandemic started, it was necessary to understand the implications of this medical crisis and in 2020 it was registered a boom, where 1.340.000 articles that contained the keyword “*pandemic*” were published. After 2020 the interest started to fade regarding this subject, but it is a clear fact that the human behaviour was affected by this crisis drastically.

Figure 3. Articles correlation regarding AI and Consumer Behaviour



Source: authors’ own calculations based on Google Scholar Data Base.

A new phenomenon has appeared and was classified by psychologists, after the global pandemic, and this is about digital burnout, which refers to the state of physical, psychological, and social exhaustion caused by excessive use of digital devices and platforms. This phenomenon affects consumer behaviour by changing the way individuals interact with online platforms. Despite the exhaustion and stress associated with digital burnout, affected consumers often continue to use digital consumer platforms. This behaviour can be viewed as a coping mechanism or a form of escapism to deal with negative emotions (Pires da Silva et al., 2024).

Another phenomenon that has increased in the last decade is the drive to purchase by impulse buying, without prior planning and considering long-term effects. Social media and digital platforms are enforcing this kind of behaviour through the targeted ads and personalised content. These online environments provide steady shopping opportunities, but encourage consumers to buy products on an impulsive basis. The existence of brands and influencers on social networks can determine consumers to make careless decisions. In addition, there is a direct linkage between low self-control and impulsive buying, namely individuals who have minimal self-control prove greater exposure to the instant gratification ensured by online shopping, this process determining to potential negative effects such as financial distress and buyer’s remorse (Nyrhinen et al., 2024).

Moreover, shifts have been made in consumer conduct as a result of COVID-19, boosting the development of online shopping. Individuals considered

online shopping as a safer and more appropriate option, given the restrictions and concerns associated with the pandemic. In response to these changes, digital commerce faced ongoing growth, even in the case of those individuals who were not frequent online shoppers prior to the pandemic. Certain key elements encouraged this process, for instance the convenient access to detailed product information, the easiness of price comparisons, together with the general convenience of making purchases while being home. Consumers' habits encountered digital transformations due to the pandemic, a primary point being the inclusion of e-Commerce in people's daily lives (Higueras-Castillo et al., 2023).

5.3 The Implications of Artificial Intelligence in Consumer Behaviour

For the better understanding of the Artificial Intelligence, it should be categorised in two major classes: predictive AI and generative AI (GenAI), where the first one focuses on improving decision-making through algorithms and machine learning, enhancing applications such as recommender systems and online advertising, where the second one focuses on the creation of new content, such as text, images, and videos, using advanced models like transformers. Compared to predictive AI, generative AI (GenAI) is different because of its advanced capabilities to create content and interact like a human. While predictive AI focuses on improving decisions based on predictions from data, GenAI can generate new content such as text, images, and videos that appear original. This technological leap has caused mixed reactions from consumers. On the one hand, GenAI's human-like performance and interactive behaviour can trigger positive reactions, including higher trust and perceived similarity. On the other hand, it can also cause negative reactions, such as weirdness, fear, and threats to human identity. The dual nature of these reactions highlights the complexity of consumer acceptance and the psychological impact of interacting with GenAI (Hermann & Puntoni, 2024).

In many industries, as within the beauty industry, AI has also been one of the major changes. This innovative technology has changed consumer behaviour.

and interact. This personalized strategies is a key element in this transformation

It attracts and engages consumers. Since the AI algorithms have the ability to analyze piles of data, it can take into consideration the personal tastes of an individual, their skin type and modern trends in beauty before recommending something for them. Also, during the virtual try-on experience, AI enables the buyers to visualize the products within their skin appearance, therefore boosting their confidence in selecting a product. Besides, artificial intelligence-powered chatbots and virtual assistants provide immediate support by responding to inquiries and providing product information. The optimisation of the customer's journey, coupled with the promotion of interactivity and engagement, serves to improve the overall purchasing experience (Roche et al., 2024).

Artificial intelligence can also be applied to many areas of daily life. Structurally, humans are mentally unable to process large amounts of data at once. The lack of processing skills leads to gaps and missing value in hidden information. Computers

can process data and provide reports that discover opportunities, trends, or potential threats (Gkikas & Theodoridis, 2022).

A common mistake is to believe that machines and technology are objectives and less unbiased. However, biases represent a major problem for AI, directly affecting the quality of AI software and the users' satisfaction. The issue of AI algorithm bias has received increasing attention in media, including concerns about biases in algorithms used in apps like Google Search, Facebook, and FaceApp. AI-driven products and services are based on machine learning, which uses large training data sets as input, based on which algorithms are developed. A major driver of AI bias is unbalanced and distorted training data. AI-driven products, especially those with high levels of interactivity, are increasing the amount and variety of consumer data collected, used, and transmitted, creating new challenges for consumer privacy (Du & Xie, 2020).

In order to understand better the consumers regarding the use of AI, consumers with higher certainty about their needs are more likely to accept AI chatbots. This acceptance is mediated by the perceived effectiveness of the chatbots. When consumers are certain about their needs, they perceive AI chatbots as more effective in providing relevant information and facilitating their decision-making. This effect is particularly pronounced for search products, where objective criteria can be evaluated before purchase. For experience products, the certainty of needs does not significantly impact AI chatbot acceptance due to the subjective nature of evaluation (Zhu et al., 2022).

Regarding the ethical impact on consumer decision making, it turns out that consumers are more likely to behave unethically when the AI identity is disclosed compared to when the AI is not disclosed. This trend is largely driven by perceived social judgment. Consumers feel less judged when interacting with public AI and therefore behave unethically (Li et al., 2024).

For the ethical principles of AI, the focus should be on ensuring that AI systems operate in a manner consistent with fundamental rights, democracy, and the rule of law. Respect for human autonomy means that AI should complement humans, rather than manipulate them, in order to preserve the right to self-determination. Harm prevention ensures that AI systems do not cause or exacerbate physical or mental harm and are protected from malicious use. Fairness requires that AI systems are free of bias and discrimination, ensuring equal opportunities and procedural fairness. Explainability requires that AI systems are transparent and that their decisions are understandable to those affected (Laine et al., 2024).

6. Conclusions

The development of technology and of the AI has deeply changed the way of how consumers behave in the digital era. A few of the central factors that work through the process of consumer decision-making are technology, AI, trust, privacy, and empowerment. Today's consumers have access to huge piles of information, and this information makes them capable of making smarter and more efficient decisions. Besides, AI-powered personalized marketing strategies engage and increase

customer satisfaction. Organizations need to competently manage ethical challenges related to trust and privacy issues through the integration of transparent and fair AI practices in a bid to retain consumer trust. This paper has emphasized that in making use of digital instruments, the requirement for constant adaptation and ethics arises with the end aim of satisfying the changing priorities and preferences of consumers. In view of these research findings, further studies should focus on some areas.

First, research into the long-term effects of AI and digital technologies on consumer trust and behaviour is needed, in particular within different cultural and demographic contexts. By doing that, one would be able to see what universal trends are and what are region-specific. Second, further study on the ethical setting for AI, involving bias and mitigation, is an important part of creating fair and transparent AI systems. It should also assess how well the numerous regulatory frameworks and industry standards in place facilitate ethical AI practices. One can further gauge the effect of new technologies—such as virtual or augmented reality—on consumer behavior. The last one is the longitudinal research in terms of changing consumer behavior that will give insight into the changing digital environment to help companies adapt to the future. The steps will help an individual to clearly understand the behavior of digital consumers and come up with strategies of effective and ethical engagement.

During the preparation of this work the author(s) used Chat GPT 4.0 in order to correct any misspellings and grammatical errors. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

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