

Changes in consumer behavior in the context of the digital economy and applied marketing approaches

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Abstract: The era of digital transformation has led to fundamental changes in consumer behavior, just as in many other fields. The widespread use of social media and social networks, e-commerce, and e-marketing has significantly altered consumers' decisionmaking mechanisms, purchasing habits, and forms of interaction with brands, making them more dynamic, interactive, and information-driven. These changes necessitate a reconsideration of traditional marketing approaches and highlight the role of digital transformation in applied marketing strategies. The article analyzes the main directions of consumer behavior transformation in the context of the digital economy. In particular, it explores the impact of personalized marketing, big data analytics, AI-based recommendation systems, and social media marketing on consumer behavior. It also emphasizes the increasing use of digital channels by consumers for information gathering, product comparison, and purchasing decisions. The research results show that, under the conditions of the digital economy, marketing approaches are evolving towards data-driven decision-making, real-time interaction, and optimization of customer experience. This plays a crucial role in shaping competitive advantage for enterprises. In conclusion, the digital economy not only transforms consumer behavior but also requires marketing strategies to be more flexible, innovative, and technology-oriented.

Keywords: Digital economy Consumer behavior Digital transformation E-commerce Social media

1 Introduction

Marketing science has a long tradition of embracing new challenges, new methods, and new disciplines. The field today is built upon the diverse efforts of researchers who, for almost 50 years, have synthesized solutions from a variety of disciplines to provide new insight to marketing problems. More often than not, the crucible of marketing science has given back to other disciplines, models, and methods that are better and more robust. For example, in the early 1980s, consumer packaged goods firms experienced a data revolution. No longer dependent upon aggregate, time-

delayed data such as warehouse withdrawals, the advent of scanner data enabled marketing scientists to observe the behavior of individual consumers making purchases over many shopping trips and for many product categories [1].

Expansion of e-commerce, growth of digital platforms, application of artificial intelligence-based algorithms, and processing of big data — as the main driving forces of the digital economy — have fundamentally transformed the content of relationships between producers and consumers. By integrating technologies such as artificial intelligence and mobile access, e-commerce enables online transactions, expands market access, and transforms traditional trade to meet the demands of the digital era. As a result, global-scale, information-driven, personalized, and efficient virtual markets are emerging, creating broad opportunities for business entities (especially micro, small, and medium enterprises) as well as consumers, and fundamentally changing the ways goods and services are purchased, sold, and delivered. As noted, e-commerce is no longer limited to online sales; it also encompasses digital services, data flows, and intellectual ecosystems. This affects all areas — from supply chains to consumer behavior — expands the application of innovation, and stimulates economic growth.

The impact of the digital economy on trade has significantly transformed consumer decision-making mechanisms, turning consumers not only into passive buyers of products and services but also into active subjects who generate, share information, and influence market behavior. Unlike traditional markets, the abundance of choices in the digital environment, accessibility of information, public opinion formed on social networks, and personalized advertising mechanisms have enriched consumer behavior beyond rational models, incorporating elements of behavioral economics. In this regard, revisiting classical consumer behavior models such as Engel–Kollat–Blackwell and Stimulus–Response within the context of the digital economy emerges as a relevant scientific problem.

The main purpose of the article is to analyze the transformation of consumer behavior in the digital economy based on theoretical approaches and to identify the real manifestations of these changes through empirical research. Within the framework of the study, the following tasks are set: to explain the essence of the concept of the digital economy; to systematize the main theoretical models of consumer behavior; to analyze the mechanisms of the digital environment's influence on consumer decisions; to identify key trends based on empirical data; and to propose practical recommendations.

While existing literature extensively covers the macroeconomic benefits of the digital economy and general e-commerce trends, there is a notable research gap regarding how classical consumer behavior models (e.g., the Engel–Kollat–Blackwell and Stimulus–Response frameworks) interact with modern socio-psychological anomalies like the digital Veblen and Snob effects under algorithmic personalization. Most studies treat these models in isolation. This paper addresses this gap by synthesizing classical consumer behavior theories with data-driven

marketing realities, exploring how AI-driven recommendation landscapes alter the traditional linear customer journey into a dynamic, non-linear loop.

In the Internet of Things (IoT) consumer products like coffee machines and smoke detectors are connected with the Internet, which effectively expands the Internet to the physical world. Such products have the ability to collect and share data from the user's environment and, thus, their broad emergence will affect well-established concepts presented in the extant marketing literature [5].

2 Methodology

This study adopts a secondary data analysis and synthesis methodology. To evaluate the empirical shift in consumer behavior, we examine secondary empirical datasets from Eurostat (2023) tracking e-commerce penetration within the European Union over a ten-year horizon (2013–2023). Additionally, to analyze the impact of electronic Word-of-Mouth (eWOM), we utilize comparative meta-synthesis based on causal models (specifically the Information Adoption Model - IAM) from recent empirical literature, analyzing regression metrics to weight the influence of anonymous reviews versus social media recommendations.

3 The Concept of the Digital Economy and Theoretical Foundations of Consumer Behavior

The digital economy, in scientific literature, is characterized as an economic system based on information and communication technologies, where digital data plays a decisive role in the processes of production, distribution, exchange, and consumption. As a global network of economic activities grounded in digital technologies, it encompasses online connections, transactions, and data flows, covering sectors such as retail trade, finance, and healthcare. The digital economy includes a wide spectrum ranging from e-commerce, online banking, electronic taxation, digital customs, and digital marketing to the core infrastructure of the internet, mobile technologies, cloud computing, artificial intelligence, and the Internet of Things (IoT). All of these enable producers and consumers to interact within the digital environment and create new value. In essence, the digital economy significantly strengthens the economic activity of digital resources, fundamentally transforming the ways goods, services, and information are produced, exchanged, and consumed.

The advent of the digital transformation era signifies more than just adopting digital technologies; it represents a profound shift in how organizations operate and

innovate in the digital age. Beyond mere digitalization, this era heralds a holistic reimagining of business models, processes, and customer interactions [9].

Among the classical models of consumer behavior, the “Engel–Kollat–Blackwell” model, Kotler’s “stimulus–response” model, and other behavioral frameworks hold an important place. According to the Engel–Kollat–Blackwell model, the consumer’s decision-making process consists of the stages of problem recognition, information search, evaluation of alternatives, purchase, and post-purchase behavior. The digital environment influences each of these stages, particularly accelerating and expanding the phases of information search and comparison of alternatives.

In the “stimulus–response” model, alongside marketing stimuli, social, cultural, and personal factors are presented as the main determinants of consumer behavior. Under the conditions of the digital economy, these stimuli have taken new forms such as algorithmic advertising, personalized content, influencer marketing, and user experience (UX). Thus, theoretical analysis shows that although classical consumer behavior models remain relevant in the digital economy, their content must be integrated with new technological and social realities. This makes it necessary to study the transformation of consumer behavior models both in theoretical and empirical dimensions.

4 Transformation of Consumer Behavior in the Digital Environment

As noted, the formation of the digital economy has created systemic changes in the structure and content of consumer behavior. In traditional market conditions, consumers relied mainly on information flows limited to mass media and physical sales spaces, whereas in the digital environment, the volume of information is vast and increasingly personalized. For this reason, the essence of the consumer decision-making process has changed at all stages — recognition of need, information search, evaluation of alternatives, purchase, and post-purchase behavior — making it necessary to adapt the aforementioned behavioral models to the digital economy.

Digital platforms have significantly reduced consumers’ information costs, simplified product and service comparisons, enabled price monitoring and access to user reviews, and made decision-making faster, while at the same time more directed through algorithmic recommendations and social proof mechanisms. As we know, artificial intelligence-based recommendation systems applied by Amazon, Google, Meta, and other platforms shape the choice environment based on consumers’ previous behavior, thereby placing consumer economic behavior under the influence of technological architecture.

Consumer purchasing behavior has been shaped by artificial intelligence-based recommendation systems and providing customer satisfaction has been relatively more important for companies. Businesses should also focus on ensuring that these systems operate on a transparent, secure and ethical basis. Only in this case can it be said that the systems work successfully and effectively. The fact that the consumer acts with the recommendations of these systems in all stages before, during and after the purchase is an important determinant in the purchasing decision process. From this perspective, businesses operating in the electronic environment in particular need to be sensitive in the functionality of artificial intelligence-based recommendations and have a futuristic structure [6].

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The Fourth Industrial Revolution and the development of digital technologies have led to social transformation in human history, changing many areas — from communication styles to work practices, from concepts of entertainment to

socialization and shopping habits. Customer–brand/company interactions have been transformed, giving rise to new trends. Overall, the modern digital world plays a special role in the transformation of consumer behavior, as user reviews, ratings, and influencer content formed in digital networks enjoy higher levels of trust compared to traditional advertising tools. As a result, consumers possess extensive information and make decisions not only based on firms’ provided data but also on the experiences of other users and the norms formed by digital communities. This demonstrates that the “subjective norms” factor highlighted in Ajzen’s Theory of Planned Behavior has stronger influence in the digital economy environment.

Digitalization has also transformed relationships among producers, consumers, and brands. Whereas in the traditional model interaction was mainly limited to the act of sale, in the digital environment these relationships acquire a continuous character through ongoing communication, personalized offers, online services, and post-purchase support. This increases the importance of factors such as user experience (UX), digital trust, and data security in shaping consumer satisfaction and brand loyalty.

The Snob Effect, which explains consumer behavior, in the digital economy is characterized by consumers rejecting mass-produced products and preferring rare, exclusive, and status-oriented digital goods and services. In this context, the snob effect manifests itself in consumers choosing products and services to differentiate from mass use and to demonstrate social status. Platforms reinforce this behavior through artificial exclusivity, premium memberships, and limited access mechanisms. The reasons that further strengthen the snob effect in the digital economy include:

- Status visibility (likes, followers, badges, blue ticks)
- Ease of comparison
- Artificial creation of exclusivity

Among the socio-psychological effects explaining consumer behavior, the Veblen Effect in the digital economy is characterized by high prices creating social status and symbolic capital rather than functional value of digital goods and services. This leads to increased demand through premium subscriptions, expensive NFTs, and elite platform models.

As we know, the Bandwagon Effect refers to the behavior of people choosing a product, service, or idea simply because others do. In this case, demand is driven not by individual need but by the tendency to join the crowd.

In the digital economy, this effect is stronger because:

- User numbers are publicly visible
- Social proof is constantly presented visually
- Decisions are often made emotionally and quickly

Thus, in the digital economic environment, consumer behavior is transformed not only technically but also socio-psychologically, turning the consumer from a passive market

5 The Impact of Data on Consumer Behavior

In the era of digital transformation, big data has become a critical tool for all economic actors. Through analytical instruments, businesses gain opportunities to better understand consumer needs, design personalized offers, and optimize decision-making processes. Research results show that big data enhances the effectiveness of marketing strategies and influences consumer behavior.

As we know, the main components of big data technology include several key stages: data collection, data storage, data processing, and data analysis. The initial stage involves gathering information from multiple sources such as social media, online transactions, sensor data, and customer interactions. The volume of collected data is enormous, and effective collection, integration, and analysis often require automated tools and technologies. Traditional data storage solutions may struggle with the size and complexity of large-scale information, which is why cloud-based storage systems are increasingly applied.

Advanced analytics — including machine learning, predictive analysis, and data mining — can be used to inform business strategies, improve customer experience, and foster innovation. By analyzing consumer behavior and preferences, companies can personalize marketing campaigns more effectively, increase engagement and sales, and thereby accelerate the growth rate of the global economy.

Research shows that year after year, consumer behavior in the digital economy is characterized by high online activity (more than 85% of internet users engage in online shopping). The digitalization of trade influences consumer behavior in the following ways:

- **Influence of social media:** Especially in developing markets, social media plays a major role in product and service research.
- **Attention to brand values:** Focus on social and environmental aspects has increased, while traditional brand loyalty has declined.
- **Mobile shopping and digital payments:** These have become standard practices.
- **Trust in digital reviews:** Consumers rely heavily on digital reviews and information before purchasing, driven by convenience and the tendency to make informed decisions.
- **Demand for personalized experiences:** Consumers prefer individual and customized offers.

- **Convenience and informed decision-making:** Shoppers aim to make easier and more informed choices.

The digital economy can therefore be seen as a broad range of economic activities which use digitized information and knowledge as key factors of production. The internet, big data, cloud computing, financial technology (fintech) and other new digital technologies are used to collect, store, analyze, share information digitally, transform social interactions and create a globalized market place. The digitization of the economy brings about benefits and efficiencies as digital technologies facilitate innovation create job opportunities and foster economic growth. The digital economy also spreads through all facets of society. It is therefore influencing agent in consumer behaviour, other levels of interactions and bringing about great sociological changes [7].

6 Empirical Analysis of the Impact of the Digital Economy on Consumer Behavior

Various analyses have shown that approximately 81% of retail shoppers conduct initial online research before making a purchase decision. This once again demonstrates that online information search has become an essential part of the purchasing process for modern consumers.

In recent years, online shopping has gained significant popularity across the European Union, reflecting a profound structural shift in retail logistics and buyer habits. According to longitudinal data compiled by Eurostat (2023), 75% of surveyed individuals in the EU reported purchasing or ordering goods and services online for personal use within the preceding 12 months. This represents a substantial increase from 2013, where the e-commerce penetration rate stood at 57% (Eurostat, 2013). This macro-level growth highlights not only an increase in transaction volumes but also a qualitative evolution in consumer motivations. While the digital landscape in 2013 was primarily driven by basic functional conveniences such as online product browsing and home delivery options, the contemporary digital consumer in 2023 prioritizes advanced interactive values. These include 24/7 continuous platform availability, instant cross-platform price comparison mechanisms, and highly tailored, AI-driven personalized product recommendations that streamline the dynamic decision-making process.

Globally, the development of the digital economy is systematically transforming consumer online shopping behavior — more people are making purchases via the internet, prioritizing different product categories, and businesses are adapting their sales strategies to online platforms. These trends empirically support the impact of the digital economy on consumer purchasing decisions.

Erkan and Evans carried out a study on the influence of electronic word of mouth (EWOM) on consumers' online purchase intentions. Multiple linear regression analysis was employed to test each hypothesis. The study empirically tested and compared the influence of friends' recommendations on social media and anonymous reviews on shopping websites in the context of online purchase intention. The researchers analyzed the impacts of these two platforms based on the components of information adoption model (IAM) which were borrowed as information quality, information credibility, information usefulness and information adoption. Survey was conducted and the results revealed that anonymous reviews were more influential on consumer' online purchase intentions than friends' recommendations on social media [2].

Conclusion

The development of the digital economy has led to fundamental changes in consumer behavior. Analysis and empirical data show that digital platforms, social media, artificial intelligence-based recommendation systems, and big data technologies have accelerated, personalized, and made consumer decision-making more interactive. Classical consumer behavior models remain relevant in the digital environment, but their adaptation to technological and social realities is necessary.

In the digital environment, consumers are no longer passive buyers but have become active actors who generate information and influence market behavior. Socio-psychological effects such as the Snob, Veblen, and Bandwagon effects have intensified under the conditions of the digital economy, increasing the social and status motivations behind consumer choices of goods and services. Big Data and analytical tools expand opportunities for personalized offers and informed decision-making, thereby enhancing the effectiveness of marketing strategies.

Empirical findings confirm that the growth of online shopping, the influence of social media, and reliance on digital reviews validate the transformation of consumer behavior. This holds practical significance for business entities in terms of optimizing marketing strategies, strengthening consumer trust, and building sustainable business models.

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