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AI-Driven Strategy: Aligning Business with Human Behavior and Consumption Pattern

Nataliia Zaviziena[1]
Lilya Shienko[2*]

[1,2]*Arts, Communications, and Social Sciences Department, University Canada West, Canada.*
[1]*Email: nataliia.zaviziena@ucanwest.ca*
[2]*Industrial-Organizational Psychology, Adler University, Canada.*
[2]*Email: lilya.shienko@ucanwest.ca*

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(Corresponding Author)*

Abstract

The economic impact of artificial intelligence (AI) is often examined in terms of labor market disruptions and productivity gains. However, AI's growing influence on consumer behavior introduces a new dimension of economic significance. This study explores how AI reshapes online consumption through psychological targeting, affecting demand structures, market segmentation, and business strategy—particularly for local and digital-first firms in the next two decades. This paper argues that AI is not merely a tool for automation but a strategic asset that transforms the behavior of both firms and consumers in digital markets. The study contributes to business economics by linking technological adoption with behavioral change and economic performance in the evolving landscape of e-commerce.

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1. Introduction

Artificial intelligence (AI) is an increasingly important area in marketing and business that has recently attracted significant attention. Just as in the past, sales have been built on marketing strategies, today AI is redefining the foundation of those strategies. When considering the impact of AI on online consumer behavior, the first and most critical change lies in the evolution of marketing strategy itself. Marketing experts argue that AI has the potential to transform the field beyond recognition (Wahid, 2025). While AI already influences human behavior in the realm of online shopping, we are still in a phase dominated by digital marketing—a model that has significantly optimized the sales process. However, a new paradigm is emerging, which some experts are beginning to call AI marketing. This approach combines human intuition with the speed and efficiency of machines, promising a highly optimized online sales environment (Arias-Pérez, Vélez-Jaramillo, & Callegaro-de-Menezes, 2025). As a result, both the quality and speed of online shopping are expected to improve significantly.

Currently, businesses already employ AI to handle routine tasks such as processing purchase orders, storing transaction data, and managing inventory. More advanced AI systems utilize intelligent algorithms to process unstructured data, analyze consumer behavior, and generate tailored product suggestions (Rodgers, Mukherjee, Melamed, Baveja, & Kapoor, 2024). This form of AI engages directly with psychological patterns in human behavior and is typically found in tools such as virtual agents and chatbots. Recommender systems,

for instance, analyze user behavior to provide personalized product suggestions, thereby improving the user experience, boosting sales, and increasing customer satisfaction (Wahid, 2025). Even more sophisticated AI applications are now used to anticipate customer needs. These systems employ algorithms that suggest products related to those the customer has previously viewed or purchased—such as the familiar, 'customers who bought this also bought...' feature. These algorithms factor in copurchases, shared preferences, seasonality, and current trends (Li, Deng, & Gong, 2025). For example, if a user buys a laptop, they might be shown accessories like a laptop bag, mouse, or headphones. AI is now capable of predicting what a customer might search for or purchase in the future by analyzing both individual behavior and broader shopping patterns. This leads to more relevant recommendations and enhanced customer loyalty.

AI can also dynamically adapt the layout and content of an online store based on a user's actions. The homepage, for instance, may display different sections or products depending on a customer's interests, thereby increasing satisfaction and the likelihood of repeat purchases. At this level of AI integration, the traditional roles of consumer and producer begin to blur. The power to shape demand increasingly shifts to the business, which uses AI to generate consumer interest based on psychological insights into human consumption behavior (Li et al., 2025).

On the operational side, AI enables firms to forecast demand with greater precision, minimize inventory costs, and adopt just-in-time production models (Rodgers et al., 2024). Machine learning algorithms optimize logistics and pricing strategies based on real-time data, improving supply chain responsiveness and profit margins (Arias-Pérez et al., 2025). These shifts represent a reconfiguration of traditional supply and demand dynamics, where data becomes a key economic asset. Understanding its dual role—as both a psychological influence mechanism and an operational optimizer—is essential for forecasting future consumption patterns, assessing competitive advantage, and informing regulatory and ethical frameworks. By integrating insights from behavioral economics, we examine how Al-driven tools manipulate decisionmaking via emotional targeting, habit formation, and cognitive bias exploitation (e.g., anchoring, social proof, and scarcity effects) (Li et al., 2025; Wahid, 2025). These mechanisms increase conversion rates, enhance brand loyalty, and alter consumer surplus.

2. Literature Review and Hypothesis Development

2.1. Methodology for Changing Microeconomic Principles: New Formation of Supply and Demand

Sen (2004); McFadden (1981); Akerlof (2000); Stiglitz (2004); Daniel. Kahneman (2011) and Smith (2003) though influential in economics—do not directly study the human psyche in economic processes (Akerlof & Kranton, 2000; Daniel. Kahneman, 2011; McFadden, 1981; Sen, 2004; Smith, 2003; Stiglitz & Boris, 2003). However, their research touches on aspects of economic phenomena shaped by psychological and sociological factors. These scholars acknowledge a general model of human psychology at work in economic behavior, even though their works do not explicitly delve into typologies of the human psyche, as seen in the writings of Keynes (1936) and Marshall (1961).

Sen (2004); Sen (2006) and McFadden (1981) raised questions about whether consumer behavior can be influenced to the extent that preferences shift under external pressure—whether from advertising or, in today's context, AI algorithms. If such influence is possible, economists argue that the market loses its role as the economy's regulator. In this scenario, the consumer is no longer an independent agent determining market dynamics. The core idea behind traditional market theory is that the consumer must remain sovereign and immune to psychological manipulation.

Only under such conditions can we speak of the 'old' principles governing market regulation.

So, how does a consumer make choices? According to these scholars, choices are guided by genetically programmed standards of taste and preference. They attribute the independence and sovereignty of consumer decision-making to genetic predispositions. McFadden (1981) for example, views psychological factors such as motivation and emotion as secondary. His framework suggests that consumer preferences function as a set of utilities that correlate with both product and personal characteristics. Psychology research distinguishes between observable and unobservable traits in consumer behavior, and it is the unobservable—possibly genetic—characteristics that are now the target of advanced AI algorithms. These algorithms can analyze large datasets, identify complex behavioral patterns, and potentially influence unobservable psychological factors in consumers.

The authors of this paper argue that with further algorithmic development, AI may eventually interact directly with the genetic code, reshaping psychological traits. This could lead to uncontrolled consumption and fundamentally alter the structure and logic of the market system. At present, AI monitors and interprets consumer preferences in real time, shaping buying habits and cultivating dependence by nudging users toward specific product choices. We can now say that the online consumer is no longer sovereign, and that their decisions are no longer entirely independent. If this core principle of market autonomy is undermined, the entire economic model must be reconsidered.

Economists have long drawn on the work of psychologists to understand the interaction between economic choices and psychological influences. For instance, while McFadden (1981) sometimes contrasts psychological and economic theories of choice, he also acknowledges that attitudes and intuition play a key

role in purchase decisions. Currently, it remains unclear how AI might influence intuition directly. Nevertheless, McFadden (1981) maintains that innate preferences remain the dominant force in consumer decision-making, again placing emphasis on genetics and neurophysiology.

Sen (2004); Amartya. Sen (2006) emphasizes that consumption is also shaped by habit, social class, and lifestyle. In such cases, we can speak of a full legitimization of consumer behavior. After all, AI algorithms are precisely designed to study lifestyle patterns and recommend goods suited to specific social groups. Large datasets already exist that reflect the genetic tendencies of regional populations—providing AI with an opportunity to tailor demand strategies for specific geographic areas. Sen argues that rather than focusing on individual preferences, economic policy should consider group-level data such as real income to better direct financial resources toward demand stimulation.

Stiglitz and Boris (2003) and Akerlof (2000) also explore the informal rules that guide economic behavior. They analyze real-world economic phenomena—such as unemployment, monetary policy, and financial stability—through the lens of psychological patterns. One important insight is that many modern consumers live on credit. This enables individuals to make more online purchases than their actual disposable income. Such trends underscore the deep transformation underway in today's market economy. Consumers are increasingly losing control over their budgets, which are now largely digital and abstracted from physical currency. As AI's influence on consumer psychology grows, traditional links between income and expenditure weaken. Most consumers no longer live within their means, relying instead on various forms of credit. While credit systems are not new, there is a notable difference between taking out a loan for a house and financing many small purchases. In our view, this significantly alters the architecture of economic processes.

As we know, Keynes's General Theory made a major contribution to the development of behavioral economics. He attributed market failures to irrational consumer behavior (Keynes, 1936). Today, ongoing efforts to decode the human genome may grant even greater power over human behavior. If we can identify a gene for leadership, for instance, then why not also a gene for consumption? Such thinking— combined with AI-driven market strategies—could open a Pandora's box for producers, placing the consumer entirely under their influence.

Many psychologists argue that consumer decisions are shaped more by intuition, imitation, and experience than by rational analysis or algorithms. Much of this behavior originates in the unconscious mind. According to current research, these unconscious processes remain largely incompatible with AI.

2.2. AI and the New Era of Business

Marketing processes are focused with the help of artificial intelligence on the following areas.

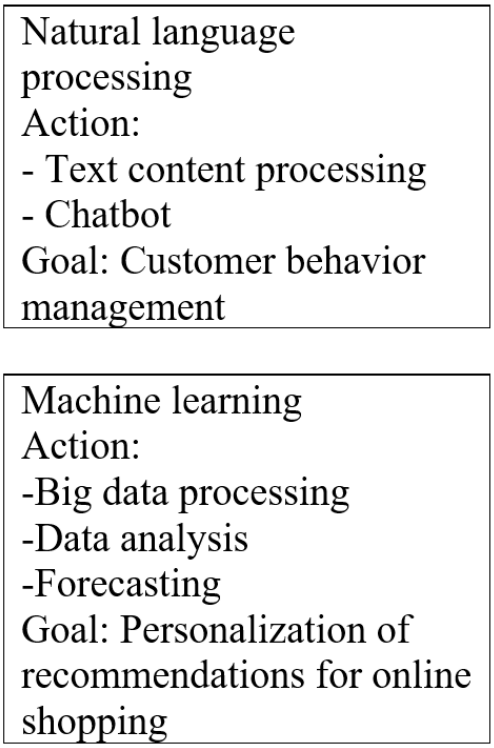

Figure 1. Marketing process using AI in online shopping.

We once understood the economy through pre-AI principles. However, with the integration of artificial intelligence into economic systems, much has changed. Take, for example, the classical principle that demand

creates supply. In the era of AI, this principle no longer holds in the same way. Increasingly, it is AI that generates demand by analyzing an individual's psychological traits and predicting what they might want—even if no prior desire existed (Morton & Trevino-Benavides, 2025). When consumers encounter products that align with their intuitive preferences, they often make unconscious or unplanned purchases. In such cases, it is not the consumer who creates the demand, but rather the manufacturer—guided by AI—who does.

This marks a shift in consumption strategy. The creation of supply has become more proactive and, arguably, more aggressive. In physical retail, consumers are exposed to the full range of available products. In contrast, AI-driven online stores selectively present only those items that align with a user's inferred preferences (Kumar, Mishra, & Kumar, 2024). This tailored presentation reduces choice overload and increases convenience, but also subtly steers behavior—encouraging faster, more intuitive purchases (Yang, 2025). Moreover, as AI technologies become increasingly embedded in sustainable consumption and circular economy frameworks, broader sociological patterns of consumption are also being reshaped (Nguyen, Tran, & Duong, 2025).

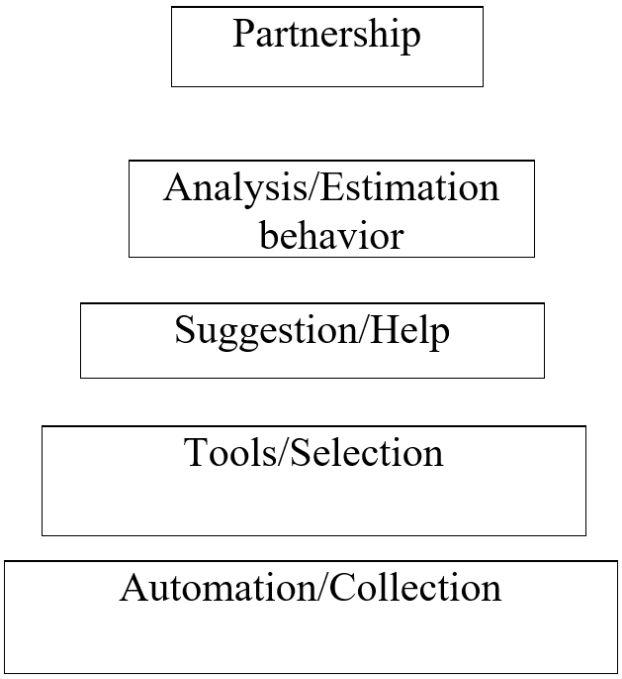

Figure 2. The AI pyramid in the context of online shopping.

Different consumers engage with AI at varying levels. For example, some make purely mechanical purchases without utilizing any additional AI features. Others, however, frequently interact with chatbots, leave reviews, and engage with AI on a more emotional and communicative level.

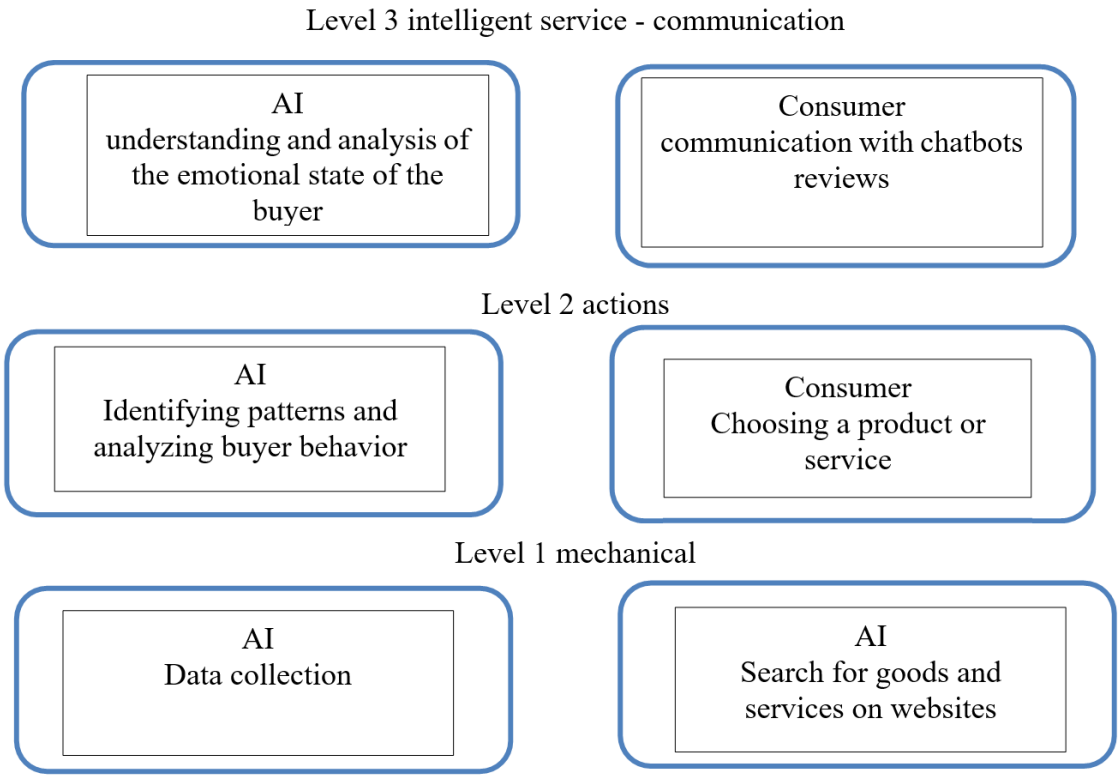

Figure 3. Consumer and AI interaction in online shopping.

Psychological model of changing human behavior in online stores Consumer behavior in online shopping is going through major psychological changes, as a result of widespread use of advanced artificial intelligence (AI) systems. These systems don't just help shoppers conduct online shopping anymore—they actively shape, influence, and sometimes even manipulate the way people make consumer-related decisions. In the past, choices were based on personal preferences, cultural values, social and marketing influences, and environmental factors. These were seen as stable and internal factors of influence. But now, AI can change these influences by using tools like predictive analytics, personalized recommendations, and targeted advertising (Jesse & Jannach, 2021; Shaw, 2025). As a result, instead of simply responding to what shoppers want, AI is now reshaping what they want and the choices they make.

This technological and psychosocial shift challenges older economic ideas that assume people are rational decision-makers who assess options carefully using available information. Today's AI commerce tools, on the other hand, are created based on research from fields of behavioral economics and psychology, suggesting that online consumers now often rely on mental shortcuts and emotional cues. These shortcuts, or cognitive biases, include phenomena such as anchoring (focusing too much on the first piece of information you see without assessing other sources), social proof (copying others' behavior), and scarcity (wanting something more when it seems limited/harder to access). For instance, Cialdini (1984) demonstrated that scarcity cues significantly increase consumer desire and willingness to act quickly, tactic AI systems commonly used by inserting countdown timers or 'Only 2 items left!' warnings to trigger urgency. Similarly, Goldstein, Cialdini, and Griskevicius (2008) showed that social proof (for example, '4,000 people viewed this today') is highly effective at nudging behavior. AI commerce tools exploit these effects in designing digital shopping experiences to influence decisions without the consumer even realizing it.

How does this work? The first thing AI systems do is grab the consumer's attention. They do this with content that is emotionally salient and highly personalized, based on consumer browsing history, social media activity, location, and history of online purchases (on other platforms). Research by Matz, Kosinski, Nave, and Stillwell (2017) found that personalized advertising tailored to psychological profiles was significantly more persuasive than generic ads. This type of content is designed precisely to match consumer interests and beliefs, making it attractive for consumers to click on, engage with (such as via reviews or product details), or buy. Bright colors, compelling images, and carefully worded messages are often used to trigger emotional reactions, making it easier to break through consumers' natural conscious mental defenses against forced advertising (Turel, Serenko, & Giles, 2011).

After getting consumer attention, AI works to shape consumers' individual preferences. It tracks small behaviors—such as how long individuals hover over an item, how fast they scroll past items, or what they click on—to identify consumers' products of interest. This behavioral telemetry is consistent with what Sundar and Marathe (2010) call customization as persuasion, whereby perceived personalization increases

credibility and influence. AI then extracts and utilizes that data to gravitate consumers toward certain product choices, often by showing them popular items, limited-time deals, or prices framed to seem like a bargain. Such techniques rely on what one would call dual-process theory (Daniel. Kahneman, 2011) which suggests that we, as consumers, often make quick, emotional decisions (System 1) instead of slow, rational ones (System 2). Online platforms thus take advantage of this by creating environments that subtly push us in certain directions, using what's known as choice architecture—a way of organizing the options to influence what we choose (Thaler & Sunstein, 2008).

Over time, this process essentially leads to habit formation and brand loyalty. When online shopping is made easy and personalized—such as with saved preferences, one- click checkouts, or tailored product suggestions—people tend to repeat those behaviors without thinking. This follows psychological phenomena such as operant conditioning (Skinner, 1953) and habit loop theory, as outlined by Duhigg (2012) where positive rewarding experiences (like convenience or rewards) reinforce the behavior. Research by Lally, Van Jaarsveld, Potts, and Wardle (2010) demonstrated that habits can form in as little as 66 days of repeated behavior. Eventually, this makes consumers less likely to change to other platforms or brands, creating a commitment to the companies behind the AI systems—what Gawer and Cusumano. (2002) refer to as platform lock-in.

Thus, it is important to acknowledge that decision-making in the age of AI isn't just about choosing between options. It's a cycle where AI constantly shapes what we see, how we feel, and what we choose. As this technology becomes more powerful, it challenges our old ideas about consumer freedom and rational thinking. Consumers are no longer just making decisions on their own—they're also following a path designed by online algorithms that subtly and subconsciously guide, influence, and even form their consumer preferences.

3. Data Analysis

3.1. Statistics and Analysis in Business

Recent statistics underscore the growing integration of artificial intelligence (AI) in the Canadian retail landscape. While only 18 % of Canadians fully understand how AI technologies function in the context of online shopping, a substantial 70 % are already using AI tools to enhance their digital shopping experience. Furthermore, 61 % believe AI will improve online sales in the future, reflecting a broader optimism about AI's transformative potential (Ernst & Young, 2024).

From 2023 to 2024, Canada's e-commerce revenue increased by 9.5 billion CAD, signaling a clear and sustained upward trend in digital consumption—largely attributed to the increasingly sophisticated applications of AI driving efficiency, personalization, and consumer engagement (Ernst & Young, 2024).

In terms of popular online categories, Canadian consumers gravitate toward clothing and accessories, electronics, health and beauty products, groceries, and home essentials. Generation Z and Millennials dominate as the most active online shoppers, highlighting their comfort with digital ecosystems and openness to AI-enhanced recommendations (Ernst & Young, 2024).

Consumer sentiment toward Generative AI (Gen AI) is evolving rapidly: nearly 46 % of consumers express enthusiasm about Gen AI's impact on their shopping experience, and 75 % are receptive to Gen AI-generated recommendations (up from 63 % the previous year). Notably, 58 % have replaced traditional search engines with Gen AI tools for discovering products and services, while 68 % prefer Gen AI systems that aggregate results across online platforms (Ernst & Young, 2024).

From a corporate perspective, 70 % of consumer goods and retail companies now identify Gen AI as a transformative technology—a significant shift from previous years. However, consumer satisfaction with Gen AI has slightly declined (from 41 % in 2023 to 37 % in 2024), suggesting that investment and enthusiasm are high, but performance and expectations remain misaligned (Ernst & Young, 2024).

Quick commerce—the promise of ultra-fast delivery—is becoming a key differentiator: the percentage of consumers willing to pay extra for faster delivery rose from 41 % in 2023 to 70 % in 2024 (Ernst & Young, 2024).

Sustainability continues to shape purchasing decisions. Approximately 64 % of consumers choose brands with sustainable practices, and 67 % would switch retailers lacking environmental responsibility. However, willingness to pay a premium is waning: while more consumers (up from 30 % to 38 %) are willing to pay 1-5 % more for sustainable products, those willing to pay more than 5 % have consistently decreased over the past two years. Yet initiatives like carbon labeling and food-waste reduction remain influential in decision-making (Ernst & Young, 2024).

Finally, today's shoppers increasingly demand transparency and detailed product information. Nutritional labeling stands out as a key factor—67 % of consumers report they would switch products based on the availability and clarity of such information (Ernst & Young, 2024).

Table 1. Canada's digital commerce volume 2020-2025.

Sales	Retail e-commerce sales in Canada					
	2020	2021	2022	2023	2024	2025
January	2,009,310	4,452,353	3,519,399	3,537,895	3,811,509	4,312,242
February	2,180,212	4,309,066	3,297,313	3,788,072	3,850,788	4,278,550
March	2,632,279	4,312,928	3,283,183	3,855,926	3,933,794	4,186,615
April	4,020,251	4,296,378	3,391,901	3,594,990	4,034,012	
May	4,074,010	4,200,905	3,617,008	3,731,053	3,916,457	
June	3,573,099	4,036,578	3,838,656	3,816,544	3,935,057	
July	3,485,623	3,401,628	3,542,598	3,778,880	4,111,058	
August	3,442,861	3,384,926	3,768,344	3,797,772	4,048,242	
September	3,421,654	3,483,423	3,626,138	3,793,314	4,233,666	
October	3,405,942	3,566,364	3,518,532	3,824,461	4,280,085	
November	3,434,353	3,518,835	3,515,244	3,827,765	4,312,518	
December	3,668,498	3,424,575	3,470,883	3,729,733	4,384,814	

Source: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=2010005603.

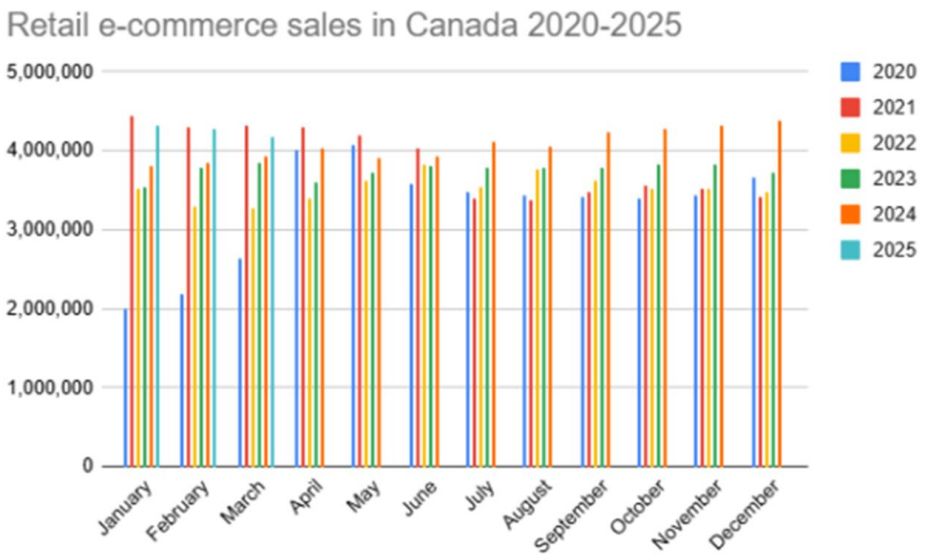

Figure 4. Retail e-commerce sales in Canada from 2020 through Q1 2025, statistics Canada. Table 20-10-0056-03 Monthly retail trade e commerce sales (x 1,000).

Online consumer behavior in Canada remained relatively stable, with some notable deviations. There was a significant surge in online consumption during the first two quarters of 2021 due to pandemic restrictions, followed by another sharp increase beginning in Q3 2023, continuing through 2025. Since late 2023, online shopping has grown by an average of 12 % per month, with slowdowns only in May and June 2024 (Ernst & Young, 2024).

Consumer engagement with digital marketing is also rising: 67 % notice advertisements on retailer websites or apps when searching for products, and nearly one-third of online purchases in the past year were directly influenced by these digital ads. Today, 67 % of all retail consumption in Canada occurs online, and this trend continues upward (Ernst & Young, 2024).

Several factors explain this trend, including the convenience of one-click shopping.

AI has played a major role in online retail evolution over the past five years. Initially limited to simple automation, AI now influences consumer behavior through personalized recommendations, dynamic pricing, and targeted promotions—for instance, shoppers receive discounts on recently viewed items or products matching their preferences (Ernst & Young, 2024).

AI has also revolutionized pricing strategies: by analyzing real-time sales data and consumer behavior, AI systems determine when and how much to discount products to boost demand. They even analyze the emotional tone of customer reviews— positive, negative, or neutral—to help brands craft empathetic responses, fostering greater loyalty (Ernst & Young, 2024). Fast shipping and simplified return policies, combined with AI-driven personalization and efficiency, are redefining consumer expectations in the digital marketplace (Ernst & Young, 2024). Demographics also play a key role: North American consumers aged 18-34 (Gen Z and Millennials) expect their online shopping activity to increase by 2026, while those 55 and older (Baby Boomers) anticipate a decline. This generational divide suggests continued growth in e-commerce, fueled by younger shoppers' integration with digital platforms (Ernst & Young, 2024).

Looking ahead, integration of AI in retail is expected to deepen: the AI retail market is projected to grow

at a CAGR of 30 % from 2023 to 2032. As AI becomes more advanced, retailers are likely to expand their use of intelligent tools for customer experience enhancement, logistics optimization, and marketing refinement (Ernst & Young, 2024).

3.2. Psychological Analysis

As mentioned in section psychological model of changing human behavior in online stores, recent statistical trends point to a deeper psychological transformation influencing online consumer behavior—one that is driven less by use of conscious intentional choices and more influenced by Al's influence on cognition, emotion, and decision-making. Today, AI does not only respond but also anticipates and shapes consumer needs by engineering digital environments that are designed to activate psychological mechanisms without consumer awareness (that is unless consumers are self-aware users of AI integrated platforms). For example, Capgemini reports that in 2024, 58 percent of consumers replaced traditional search engines with gen AI tools for product recommendations, up from just 25 percent in 2023, and nearly three- quarters of consumers have shown openness to AI suggestions, with 46 percent feeling enthusiastic about AI use, suggesting a growing psychological reliance on algorithmic decision scaffolding (Capgemini Research Institute, 2025).

Such a rise of quick commerce (Q-commerce) further demonstrates the following psychological shift: the share of consumers willing to pay extra for faster delivery skyrocketed from 41 percent in 2023 to 70 percent in 2024 (Capgemini Research Institute, 2025). This behavior (as mentioned in section Psychological model of changing human behavior in online stores) showcases operant conditioning in action: repeated exposure to fast rewards or instant online delivery/feedback that teaches users to expect and even require immediate gratification, forming habitual loops that favor speedy results over reflective and conscious decision-making (Lally et al., 2010; NTU, 2025; Skinner, 1953).

In addition to operant conditioning, social learning theory helps explain how Al-facilitated environments promote behavioral imitation and reinforcement through digital observation. Users are constantly exposed to curated product choices, influencer behavior, trending items, and peer reviews; all of which act as behavioral models. According to Bandura (1977) and Bandura (1986) learning can occur vicariously when people observe others being rewarded for certain actions. In digital commerce, seeing others engage with AI-recommended products and receive positive reinforcement (likes, reviews, praise) encourages the process of imitation, contributing to the internalization of consumption patterns (Bandura, 1977, 1986).

Next, Al-enhanced emotional design and interface personalization deepen this transformation. By reading users' sentiment and contextual data in real time, AI adapts visuals, tone, and messaging to build emotional resonance. For instance, KPMG Canada shows that younger consumers (ages 18-34) place high value on immersive digital brand experiences over conventional advertising, and are more likely to form emotional loyalty when content reflects their moods and preferences—a direct result of Al-driven personalization (KPMG Canada, 2024).

From a behavioral economics lens, human decisions influenced by AI are shaped more by context, framing, and mental shortcuts not by rational evaluation alone. AI platforms incorporate choice architecture, designing digital environments to guide decisions subtly and unconsciously based on factors like mood, device, or time of day often beneath conscious awareness (Jannach & Jesse, 2020; Rastogi et al., 2022; Thaler & Sunstein, 2008). For example, prospect theory explains why loss-framed messages such as 'Only X amount left! ' or 'X deal ends in 2 hours' are more persuasive than equivalent gains: people fear losses more than they value gains (Kahneman & Tversky, 1979). AI also uses social proof, anchoring, and scarcity cues through best seller badges, 5-star ratings, and stock warnings like 'selling fast' or 'last one!' to exploit our tendency to follow others or fixate on reference points. From the perspective of social learning theory, such cues act as observational triggers, where consumers infer social norms or desirable behavior based on the visibility of what others are buying or reacting to. These nudges occur within milliseconds before conscious, rational thought can engage (Cialdini, 1984; Goldstein et al., 2008; Voigt, Schlögl, & Groth, 2021).

Over time, this model reinforces habit formation and brand loyalty. Digital platforms use operant conditioning and Duhigg's habit loop cue, routine, reward to turn sporadic actions into habitual behavior. Research shows habits can form in as few as 66 days of consistent repetition, making users less likely to switch platforms or explore alternatives (Duhigg, 2012; Lally et al., 2010). Finally, AI exploits affective forecasting errors—the tendency to mispredict future emotional satisfaction—by presenting emotionally salient scenarios (Such as 'Imagine wearing this on vacation'), which inflates emotional value beyond practical utility and drives hedonic consumption (Gilbert & Timothy, 2000; MacInnis, Patrick, & Park, 2005).

All of these mechanisms showcase that AI has transcended its role as a mere tool—it now acts as a behavioral architect, reshaping not only what consumers buy but why, how often, and under what psychological frames. Its impact goes beyond efficiency or personalization—it influences market formation, demand construction, and even consumer identity. Understanding this psychological framework is essential for anticipating AI's broader effects on digital consumption, regulation, and long-term strategy.

3.3. Ethics as a Tool for Using Consumer Psychology in Modern Business

Artificial intelligence (AI) has significantly transformed the e-commerce landscape, offering both benefits

and challenges for businesses and consumers. On the positive side, AI is reshaping the online retail market by enhancing operational efficiency and customer service. For example, AI helps businesses optimize inventory management through predictive algorithms that anticipate demand and automate restocking, thereby reducing instances of overstocking (Shopify, 2023). AI-powered analytics also provide deep insights into consumer behavior, enabling retailers to craft more precise marketing strategies and deliver personalized advertisements tailored to individual preferences. These capabilities help businesses stay competitive, foster customer loyalty, and drive revenue growth (Shopify, 2023).

However, the growing integration of AI in online commerce is not without its concerns. One major issue is the potential for AI systems to replace human employees entirely, rather than merely assisting or complementing them. This raises questions about job displacement and the appropriate role of automation in customer-facing services. Furthermore, ethical concerns emerge regarding the use of AI to track and analyze human behavior for commercial purposes. The collection and use of consumer data—especially when deployed to influence purchasing decisions—can infringe on individual privacy and autonomy if not handled responsibly (Bashynska, 2025; Saura, 2025; Shopify, 2023).

4. Discussions and Forecasts Regarding the use of AI in Business

The retail and online commerce industry is arguably one of the most powerful engines driving the practical implementation of artificial intelligence (AI) in business. According to marketing research from Precedence Research and DataHorizzon, the global market for AI solutions in e-commerce was estimated at $4-6 billion as of 2022 (DataHorizzon Research, 2023; Precedence Research, 2023). Over the coming years, it is projected to grow at a compound annual growth rate (CAGR) of 14-16%, reaching an estimated $18-22 billion by 2032—an increase of at least fourfold (Arcus Group, 2025; Retail Insider, 2025).

AI offers a robust toolkit for online retail businesses. Its adoption is no longer just a trend but a necessity for improving competitiveness and service quality. However, the successful implementation of AI requires a comprehensive, strategic approach that spans all aspects of the business—from data processing to customer engagement (Google Cloud, 2025; The Future of Commerce, 2024).

Table 2. Total global online sales volume.

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
4.25	4.98	5.09	5.58	6.01	6.42	6.88	7.38	7.89	8.4	8.91

Figure 5. Global online sales.

This data reflects global online sales in trillions of US dollars over a 10-year span, from 2020 to a forecasted 2030. The trend shows a steady year-over-year increase, typically around 1%. However, when considering this growth in the context of AI integration, we observe that global online sales are projected to double over the decade. This represents a significant transformation—almost a revolution in online commerce—considering the short timespan from a historical and economic perspective. Sales are expected to grow from $4.25 trillion to $8.91 trillion, highlighting the accelerating momentum in the sector (Simple Global, 2025; Sitecore, 2025).

Table 3. Comparison of global and US online sales volumes 2020-2030.

	USA	World
2020	34.20%	26.80%
2021	15.30%	17.20%
2022	9.55%	2.23%
2023	11.20%	9.63%
2024	9.24%	7.65%
2025	9.78%	6.86%
2026	10.40%	7.18%
2027	11.00%	7.19%
2028	11.60%	6.93%
2029	12.30%	6.52%
2030	13.00%	6.13%

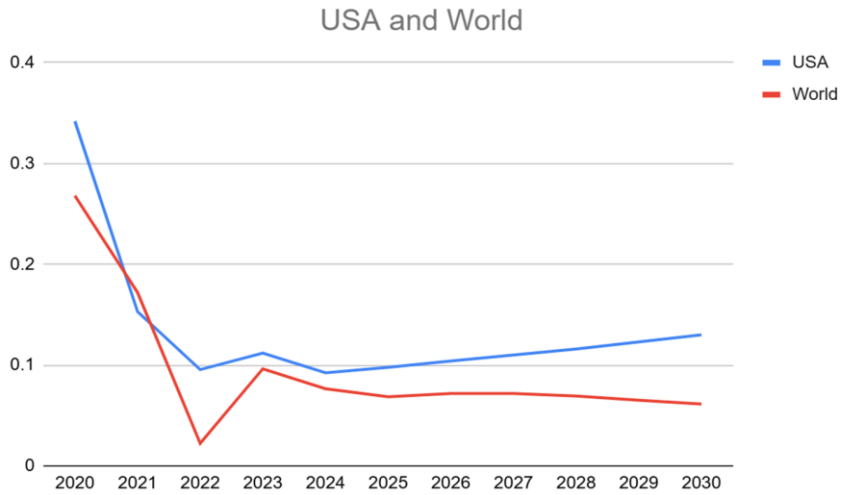

Figure 6. Online shopping in the USA and globally an interesting pattern appears in this table.

The chart shows that online shopping dropped significantly in 2021 following the peak of the COVID-19 pandemic. In the U.S., online shopping declined by 18.9% in 2021 compared to 2020. Globally, the drop was 9.6%. Currently, we observe the lowest online shopping penetration in recent years: 9.78% in the U.S. and 6.86% globally.

Forecasts indicate a gradual 1% annual increase in online shopping in the U.S., while global growth is expected to be more modest, expressed in tenths or hundredths of a percent. Two main factors explain this pattern. First, consumers became highly familiar with online shopping during COVID-19, and although the urgency has subsided, the skills and habits remain. Second, AI improvements are actively engaging consumers and reinforcing the convenience of online shopping. We argue that the pandemic fostered a psychological dependency on online shopping, which now provides fertile ground for AI-driven personalization and behavior shaping (Burst Commerce, 2025; Statistics Canada, 2025).

Table 4. Online sales in Canada and the USA, forecast until 2030 (2025-2030).

	Canada	USA
2025	42.33	265.14
2030	67.46	906.25

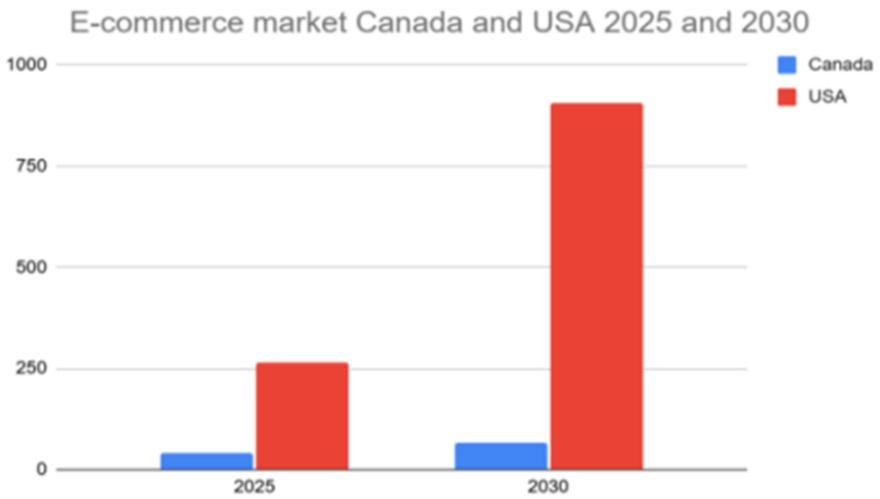

Figure 7. E-commerce market in Canada and the USA (2025-2030).

Chart 4 presents the projected e-commerce market value in billions of dollars for Canada and the U.S. from 2025 through 2030. While it's difficult to directly compare the two markets due to differences in economic size, we can analyze the growth proportions.

In Canada, the e-commerce market is expected to grow by 1.5 times—from $42.33 billion in 2025 to $67.46 billion in 2030. In the U.S., the growth is even more dramatic: a projected 3.8-fold increase from $265.14 billion to $906.25 billion over the same period. These projections provide strong evidence that online commerce will continue to expand rapidly (Arcus Group, 2025; Retail Insider, 2025).

Table 5. The division of the online market between large retail chains (2022-2027).

Years	**2022**	**2027**
Loblaw	7.20%	10.10%
Costco	5.30%	8.90%
Walmart	17.80%	24.30%
Amason	96.80%	98%

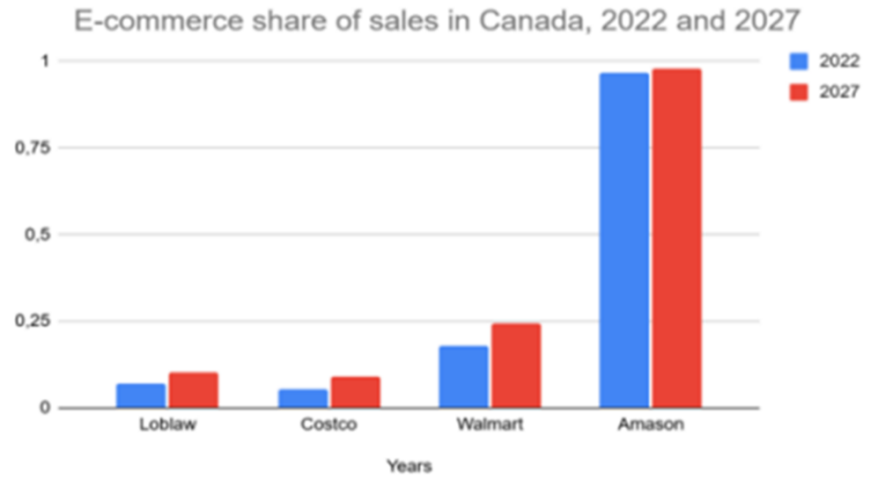

Figure 8. E-commerce share of sales in Canada.

Table 6. Major US companies in the online market 2025.

Amazon	37.60%
Walmart	6.46%
Apple	3.60%
e-Bay	3.00%
Market minority	47.50%

Figure 9. E-commerce share of sales in USA.

Figure 8 and Figure 9 show the market share distribution among leading retailers in the Canadian and U.S. online markets. Amazon dominates both markets, holding a staggering 96.8% market share in Canada and 37.6% in the U.S. Forecasts suggest that Amazon will maintain this lead.

Walmart, another major player, is also expanding its online share in both countries. Other retailers, such as Costco (5.3% in Canada) and Apple (3.6% in the U.S.), have comparatively smaller shares. These figures reflect a highly concentrated e-commerce environment, where a few dominant players are shaping the digital retail landscape (Sitecore, 2025; The Future of Commerce, 2024).

5. Conclusion

Conducting research in the field of online consumption and shopping reveals a profound psychological and technological transformation in consumer behavior. AI is no longer simply a facilitator of digital commerce—it now plays the role of a behavioral architect, subtly but powerfully reshaping how individuals make consumption decisions. As outlined in section psychological model of changing human behavior in online stores, AI-driven systems actively guide preferences by tapping into cognitive biases, emotional cues, and behavioral shortcuts. Through techniques such as choice architecture, real-time personalization, social proof, and scarcity messaging, AI reshapes not only what people buy, but how, why, and under what psychological frames those decisions occur (Cialdini, 1984; Goldstein et al., 2008; Daniel. Kahneman, 2011; Thaler & Sunstein, 2008).

Traditional economic models assumed rational agents. Today, however, AI tools are built upon psychological and behavioral insights that reveal how emotion, mental shortcuts, and environmental nudges drive most consumer choices online. For example, operant conditioning, as explored by Skinner (1953) and extended in digital contexts (NTU, 2025) shows how repeated exposure to fast rewards—like Q- commerce delivery or personalized discounts—reinforces habits and creates psychological dependence. Over time, these systems not only satisfy consumer needs but begin to anticipate, shape, and generate them (Duhigg, 2012; Matz et al., 2017). This shift marks a departure from the longstanding belief that demand originates with consumers; rather, AI now engineers demand through persistent exposure, emotional framing, and predictive manipulation (Akerlof & Kranton, 2000).

These changes have significant implications for the business economy. Businesses are increasingly obligated to revise their strategic models and adopt AI tools to remain competitive. The integration of AI into marketing, logistics, product development, and customer experience is no longer optional—it is foundational (Shopify, 2023; Statistics Canada, 2025). This technological shift renders many traditional practices obsolete, challenging legacy assumptions about consumer autonomy and market formation. Economic structures are evolving in response, and AI is progressively moving toward the center of business ecosystems (Keynes, 1936; Stiglitz, 2004). Meanwhile, consumer trust—a pillar of long-term business success—has become more fragile and complex. Once rooted in consistent product quality, trust now depends on transparency, perceived ethical use of consumer data, and emotionally intelligent engagement. AI-powered personalization may foster emotional loyalty among digital-native consumers (KPMG Canada, 2024) but it also raises concerns about manipulation, fairness, and autonomy. As AI continues to transform the digital shopping landscape, businesses must align innovation with responsibility—embracing transparency, safeguarding consumer well-being, and ensuring AI systems are designed with ethical and psychological awareness in mind.

In sum, the future of business economics will be defined not only by the power of AI, but by how consciously and conscientiously that power is applied. AI's role in shaping psychological consumption patterns

is already altering economic fundamentals. Businesses that understand and strategically adapt to this dual transformation—technological and psychological—will define the next era of commerce.

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