

The Evolution and Challenges of Consumer Behavior Models in the Age of AI Co-Existence

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I. Theoretical Background and Research Gaps

(1) Historical Foundations of Consumer Behavior Models

The origin of consumer behavior models is often traced back to the Attention–Interest–Desire–Memory–Action (AIDMA) concept proposed by Lewis in 1898 and later formalized by Strong (1925a). However, it was not until the 1930s that consumer behavior became an established field of academic inquiry, initially grounded in economic theory and centered on consumer preference models. This early economic approach treated consumers as homogeneous agents seeking to maximize utility, a methodology rooted in classical economic assumptions.

However, following the Second World War (WWII), the emergence of an era characterized by mass production and mass consumption prompted a substantial transformation in this economic approach. As supply began to exceed demand, the era of the seller’s market, where products would sell simply by being produced, ended, giving way to a buyer’s market in which consumers held the power to choose among products. In response to this shift, companies began adopting a “market-in” perspective, which emphasized the importance of providing goods and services that aligned with consumer needs. Under the marketing concept, a new strategic framework was required—one that integrated and consistently managed the entire sequence of activities from product planning and production to distribution and sales. During the period of rapid economic growth that followed WWII, marketing was formally introduced into corporate practices, the importance of studying consumer behavior was increasingly recognized, and marketing was established as a distinct academic discipline.

With the advent of the mass production and mass consumption era, the classical economic theory of the “economic man” proved insufficient for analyzing the actual behavior of consumers. It has become necessary to incorporate insights from other disciplines, such as psychology, sociology, and cultural anthropology, to better understand consumer behavior as an integral part of human conduct. In the United States (US), interdisciplinary research began in the 1950s, and by the 1960s, consumer behavior was established as a recognized academic field. In the 1970s, research on consumer behavior advanced significantly, with a marked increase in both the volume and quality of scholarly output (Aoki et al., 2012), thus gaining the attention of scholars in other disciplines.

As the consumer market evolves, the marketing perspective, which views the consumer as a subject that must be thoroughly understood, has become more pronounced. This has led to a shift toward multifaceted approaches that

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integrate knowledge from psychology, sociology, and cultural anthropology. Consumer behavior, in this way, has undergone structural transformations under the prevailing trends of each era.

(2) Transformation of Consumer Behavior in the Contemporary Era

The rise of the Internet and social media has profoundly transformed consumer behavior. Since the late 2010s, the widespread use of digital platforms has fundamentally altered how consumers gather information, make decisions, and interact with brands. Moreover, the COVID-19 pandemic, which began in late 2019, has prompted unprecedented lifestyle changes and consumption patterns owing to repeated lockdowns and emergency restrictions.

For instance, the rapid advancement of artificial intelligence (AI) technologies, such as generative AI (e.g., ChatGPT), has transformed not only consumers' lifestyles but also the structure of decision-making. Cutting-edge technologies, including XR, IoT, and autonomous driving, are also increasingly influencing consumer behavior.

As technological innovations evolve into general-purpose technologies and become increasingly commoditized, it has become increasingly difficult for companies to achieve product differentiation. Moreover, as consumer behavior undergoes a radical transformation, marketing theories and practices are compelled to undergo a fundamental reconstruction.

In such an environment, companies are now being challenged to uphold the core principle of "understanding the customer" while remaining adaptive to these sweeping changes. It is becoming clear, particularly through the shared experience of the COVID-19 pandemic, that this principle is no longer sufficient if approached solely based on the dyadic relationship between companies and consumers. The broader environmental context surrounding both parties now plays an equally critical role in shaping consumer behavior and, by extension, corporate strategy.

In this era, sustainable growth requires companies to accurately perceive changes in customer behavior and continuously offer products and services that respond to these changes. As Drucker (1954) aptly noted, "If a business cannot provide a product or service that customers want and are willing to pay for, it is a failure." In this context, marketing is not merely a sales effort; it fundamentally involves building a system that enables firms to understand customers and deliver valuable choices.

Furthermore, even if the collaboration between humans and AI continues to evolve and reshape marketing and advertising practices, it remains essential to understand that consumers are, first, human beings with lived experiences. Understanding consumer behavior will continue to be a core competency for researchers studying human-centered phenomena. Today marks a period of fundamental transformation in consumer behavior, driven by dramatic changes in the environment.

With the widespread adoption of generative AI and large language models (LLMs), algorithms have begun to intervene directly in consumer decision-making processes. Structural shifts occur when consumers purchase products, develop brand awareness, and conduct information searches. Simultaneously, the growing complexity of the information ecosystem on social media, the rise of ethical consumption, and increased awareness of sustainability have promoted diverse values that existing consumer behavior models can no longer adequately explain. Particularly in AI-mediated environments that predict and influence consumer choices, a fundamental question arises: Who makes the decisions? Contemporary consumer behavior can no longer be described as a simple interaction between firms and consumers. The presence of AI as a "third actor" is beginning to redefine the structure of decision-making itself.

These developments fundamentally challenge the underlying assumptions of traditional consumer behavior models, creating a pressing need for theoretical renewal.

(3) Limitations of Traditional Models and Theoretical Challenges

Traditional models, such as AIDMA and Attention–Interest–Search–Action–Share (AISAS), typically conceptualize consumer behavior as a linear, unidirectional process. However, AI technologies are not only enhancing the level of personalization in consumer behavior but also enabling “personal business” practices. These technologies analyze individual behaviors, preferences, and purchase histories in real-time and propose tailored products and services for each consumer.

Moreover, as digital technologies continue to evolve and AI has become increasingly integrated into marketing and corporate strategies, consumer behavior is developing as more non-linear and dynamic, posing a fundamental challenge to conventional models. Specifically, we are witnessing a reality in which AI “anticipates” consumer decisions, algorithms shape and modify individual preferences, and consumers co-create decisions with AI in a recursive, interactive process.

Although a substantial body of literature has examined consumer behavior from both theoretical and practical perspectives, most existing studies rely on frameworks conceptualized before the widespread integration of AI into consumer decision-making. Most of these models—ranging from classical linear frameworks such as AIDMA to digital-era adaptations like AISAS—were developed in contexts where human actors were the sole agents in decision-making processes. Consequently, they do not adequately account for:

- (1) the nonlinearity and bidirectionality in decision flows created by AI-mediated interactions;
- (2) the role of algorithms as autonomous agents that predict, influence, and sometimes preempt consumer choices; and
- (3) the emergence of multi-actor decision-making environments in which consumers, firms, and AI systems co-create decision outcomes.

While recent practitioner-driven models and industry reports acknowledge AI’s growing influence, few have systematically theorized its implications within a robust academic framework. Moreover, empirical research integrating AI-specific dynamics—such as predictive personalization, zero-interface interactions (user engagements without traditional input devices or visible interfaces), and real-time adaptive messaging—into established consumer behavior models remains scarce. This gap has created theoretical blind spots that limit our ability to explain and predict contemporary consumption patterns in AI-interactive environments.

Bridging this gap is critical not only for advancing marketing theory—by updating foundational models to reflect AI-mediated realities—but also for informing business practice, as firms require evidence-based strategies to navigate and leverage these transformative shifts in consumer decision-making.

To address this gap, the present study critically evaluates the extent to which existing consumer behavior models can accommodate the structural transformations introduced by AI. By identifying their theoretical limitations and articulating the challenges they face in explaining AI-mediated behaviors, this research provides a foundation for developing a new conceptual framework tailored to AI-interactive environments. The detailed development of such a model lies beyond the scope of this paper and is presented in a separate manuscript.

This study emphasizes the integration of theoretical rigor and practical relevance. By systematically reviewing and reinterpreting practitioner-driven models, it lays a theoretical foundation for advancing our understanding of consumer behavior in rapidly evolving environments.

II. Evolution of Consumer Behavior Models from the Mass Media Era to the AI Era

Consumer behavior has long been defined in various ways. For example, Blackwell et al. (2006) define consumer behavior broadly as the activities involved in acquiring, using, and disposing of products and services. While Schiffman and Wisenblit (2015), as cited in Aoki (2019) define it as “the behavior that consumers exhibit when searching for, purchasing, evaluating, and disposing of products and services expected to satisfy their personal needs”.

In this study, we define consumer behavior as “the process by which individuals or groups select, purchase, use, and dispose of goods, services, ideas, or experiences to satisfy their needs and desires” (Engel et al., 1993). This behavior is shaped by a complex interplay of psychological, social, cultural, and technological factors.

This study adopts a comprehensive perspective on consumer behavior models, encompassing the full spectrum of behavioral processes, from information exposure and emotional responses to decision-making, consumption experience, sharing, reuse, and disposal.

At first glance, advertising or response-to-advertising models may appear as frameworks designed solely to measure the effectiveness of corporate message delivery. However, these models are fundamentally underpinned by theoretical assumptions about the psychological and cognitive processes through which consumers allocate attention, develop interest, form desires, and take action. Thus, they offer valuable foundational insights into consumer understanding. Although many of these models were originally developed as advertising theories, some have become integral components of academic consumer behavior research.

Accordingly, this study includes advertising effect models such as Attention–Interest–Desire–Action (AIDA) and AIDMA, originally proposed by practitioners to describe consumer reactions to promotional stimuli, not as isolated advertising frameworks but as part of a broader effort to reconceptualize consumer behavior within a wider theoretical context.

The Attention–Interest–Desire (AID) model, often attributed to E. St. Elmo Lewis in 1898, is widely regarded as one of the earliest conceptual frameworks to describe the psychological stages that consumers undergo, from becoming aware of a product or service to ultimately making a purchase decision (Strong, 1925b). Initially comprising three stages—Attention (capturing the consumer’s attention), Interest (stimulating interest in the offering), and Desire (arousing the desire to acquire it)—the model was later expanded to include Action, thus evolving into what is now commonly known as the AIDA model. Although Lewis did not explicitly use the term “AIDA,” his writings laid the groundwork for this linear progression, which gained wider recognition after Strong referenced it in his 1925 work on advertising and selling psychology, attributing its conceptual origin to Lewis.

Even more than a century later, the core concepts of AIDA remain foundational for understanding consumer decision-making. Since then, researchers, practitioners, and corporations have proposed numerous new models to better understand and predict consumer behavior. This study chronologically organizes consumer behavior models and discusses the limitations of the existing models and the resulting theoretical gaps. To do so, we divide the evolution of consumer behavior into five distinct eras based on changes in the media environment and technological development.

From the 1900s to the 1970s, mass communication channels such as television, newspapers, and magazines were the dominant forms of media. This period is therefore defined as the “Mass Media Era,” during which stage-based and passive consumer behavior models such as AIDMA and Awareness–Memory–Trial–Usage–Loyalty (AMTUL)

were developed.

Subsequently, the development of the Advanced Research Projects Agency Network (ARPANET) by the US Department of Defense and the standardization of Transmission Control Protocol/Internet Protocol (TCP/IP) in 1983 laid the technological foundation for the modern Internet. This milestone marks the beginning of the “Internet Era” from the 1980s onward. During this period, consumer behavior models that incorporated active information-seeking behaviors, such as Attention–Interest–Search–Comparison–Examination–Action–Share (AISCEAS), began to gain attention.

The rise of Web 2.0, which led to the rapid spread of social networking services (SNS) and online review platforms, has enabled peer-to-peer information sharing among consumers. Characterized by technological innovations, such as Asynchronous JavaScript and XML (AJAX) and Really Simple Syndication (RSS), and the widespread use of open application programming interfaces (APIs), Web 2.0 facilitated interactive, user-driven content creation and seamless data exchange across platforms. YouTube launched its service in 2005, and the act of sharing user-generated video content emerged as a new consumer behavior. Although Facebook was founded in 2004, it expanded to many universities in 2005, and it became publicly available in September 2006, transforming the platform from a closed network of college students to a global platform for the public. Twitter was officially launched in the same year, introducing a novel form of real-time communication that allowed users to disseminate and share information instantaneously. The concept of “sharing,” which merged with advertising and word-of-mouth communication, began to exert a powerful influence on consumer purchasing decisions. These platforms also demonstrated strong network effects, whereby the value of the service increased as more users joined, further accelerating the integration of “sharing” into everyday consumer behavior. Given these critical turning points, this study designates the period from 2005 onward as the “Social Media Era.”

By the mid-2010s, however, the dynamics of online engagement began to shift. Social media platforms were no longer merely spaces for connection and information exchange; they had evolved into powerful ecosystems for content creation, curation, and monetization.

Following the maturation of the Social Media Era, beginning in 2015, we observe a shift to what may be called the “Content Era,” characterized by the growing value of non-corporate content such as influencer posts, user-generated content (UGC), and brand storytelling. For the purposes of this study, 2015 is treated as the transition point between the Social Media Era and the Content Era. However, rather than an abrupt break, these two periods coexisted for some time, and the discussion is based on the assumption that both eras share a degree of continuity in theory and practice. Accordingly, consumer behavior models that emerged around 2015 are positioned as embodying features of both eras.

Since the late 2010s, the growing integration of AI into everyday consumption has made it necessary to conceptualize a distinct “AI Era.” In the latter half of the 2010s—particularly around 2017 to 2018—AI became firmly established at a commercial level in the fields of marketing and recommendation systems. The release of Google’s TensorFlow in 2015 and the achievements of DeepMind prompted Facebook and Google to expand their AI research teams, leading to the integration of AI into advertising delivery and feed optimization around 2016 to 2017. In 2018, Amazon migrated its recommendation engine to a deep learning-based system, and Netflix began using machine learning for personalized thumbnails and content recommendations. In the same year, Google’s introduction of Bidirectional Encoder Representations from Transformers (BERT) significantly advanced the accuracy of natural language processing, greatly enhancing personalization in searches and advertising. Furthermore, Spotify and

YouTube integrated behavioral data with AI models to implement systems capable of updating recommendations in near real time.

This commercial adoption was accelerated by a combination of factors, including improvements in Graphics Processing Unit performance, the maturation of cloud-based AI environments, the explosive growth of data driven by smartphone penetration and the expansion of social media usage, and a rapid increase in corporate investment in AI technologies. These advances transformed recommendation systems from a supplementary feature into a core mechanism shaping the consumer journey, marking a gradual transition from the Content Era to the “AI Era.”

Since 2020, the proliferation of generative AI and advanced recommendation systems has brought consumer decision-making into a new stage in which AI works alongside individuals to choose products and services. The commercialization of LLMs and the advancement of multimodal generation technologies have expanded AI’s role from that of a mere suggestion provider to an active co-creator, generating, evaluating, and optimizing options together with the consumer. This transformation was further accelerated by the COVID-19 pandemic, which expanded digital touchpoints and entrenched online consumption behaviors. As a result, AI has emerged as a “third actor” alongside consumers and firms, intervening in and redefining the structure of decision-making. For these reasons, this study defines the period from 2020 onward as the “AI Era.”

II-1. Consumer Behavior Models in the Mass Media Era (1900s-1970s)

II-1-(1) Representative Consumer Behavior Models

Among the various consumer behavior models proposed during the Mass Media Era, the AIDMA model is arguably the most widely recognized model in Japan (Takei, 2003). Originally introduced by American advertising practitioner Samuel Roland Hall in his 1924 book *Retail Advertising and Selling* (Hall, 1924), this model was developed to explain purchasing behavior in the context of a society driven by mass production and mass consumption.

The AIDA model (Hall, 1898), often regarded as the prototype of AIDMA, delineated consumer persuasion as a sequence of Attention, Interest, Desire, and Action. Although later expanded into AIDMA with the addition of “Memory,” AIDA remains a historically important foundation in the evolution of linear advertising models.

The AIDMA model delineates five linear and sequential psychological stages—Attention, Interest, Desire, Memory, and Action—through which a consumer moves from initial exposure to a product to the point of purchase. It was proposed at a time when the market was shifting from a seller-driven paradigm, in which products would sell simply by being manufactured, to a buyer-driven market, in which consumers gained increasing power over purchasing decisions. By segmenting the consumer decision-making process into five stages, AIDMA enabled firms to identify specific bottlenecks, such as a lack of awareness, weak memory retention, or low desire, which may have hindered the diffusion of a product. This diagnostic capacity offered businesses valuable insights for redesigning products, advertising, and sales promotion strategies during periods of profound market transition.

The model became widely adopted because it allowed marketers to evaluate which phase of the decision-making process required strategic intervention. For instance, it clarified whether the problem lay in the consumer not recognizing the product, not remembering it, or not being sufficiently interested to take action. As such, it provided a practical framework for improving marketing effectiveness across various consumer touchpoints.

However, despite its utility in analyzing first-time purchasing behavior, the AIDMA model failed to explain

post-purchase processes, such as continued use, customer retention, and brand loyalty. These aspects have become increasingly important in product categories such as food, daily necessities, and cosmetics, where repeat purchases are closely tied to profitability.

To address this limitation, Mizuguchi proposed the AMTUL model in 1976 as a complementary framework. Rooted in a consumer-oriented philosophy of “providing high-quality products for long-term use by each individual consumer,” the AMTUL model emphasizes sustained engagement and loyalty beyond the initial purchase (Mizuguchi, 1976). It comprises five stages: Awareness, Memory, Trial, Usage, and Loyalty. This model not only served as a useful tool for explaining repurchase behavior but also anticipated modern marketing concepts, such as fan

Table 1-A: List of Consumer Behavior Models in the Mass Media Era (1900-1970)

Model Name	Step Overview	Proposer/Year (Bemerkungen (Hauptmerkmale oder Hintergrund))
AID	Attention → Interest → Desire	Lewis/1898 (Early model focusing on forming buying desire)
AIDA	Attention → Interest → Desire → Action	Lewis/1900 (Classical 4-step model including purchasing action)
AICA	Attention → Interest → Conviction → Action	Printers Ink/1910 (Emphasizes persuasion through conviction)
AIDAS	Attention → Interest → Desire → Action → Satisfaction	Sheldon/1911 (Adds post-purchase satisfaction to the process)
PAISCH	Preparation → Approach → Interest → Closing → Sale → Holding	Sheldon/1911 (Also known as “Practical Selling Stages”; a detailed sales process for practitioners)
AICCA	Attention → Interest → Conviction → Confidence → Action	Hall/1915 (Includes “confidence” as part of persuasive effect)
ADICA	Attention → Desire → (Removing) Inhibitions → Confidence → Action	West Coast Life Insurance Company/1920 (Practical model from the insurance industry)
AIDCA	Attention → Interest → Desire → Caution → Action	Ramsay/1921 (Reflects cautious consumer psychology)
AIDCA	Attention → Interest → Desire → Conviction → Action	Kitson/1921 (Focuses on conviction leading to action)
AIIA	Attention → Interest → Judgment → Action	Osborn/1922 (Highlights rational judgment before purchase)
SRBRA	Seen → Remembered → Believed → Read → Acted	Starch/1923 (Visual recognition and belief leading to action)
AIDAS	Attention → Interest → Desire → Action → Satisfaction	Strong/1925 (Adds satisfaction to the traditional AIDA flow)
AID (W) C (S) PS	Attention → Interest → Desire (Want) → Conviction (Solution) → Purchase → Satisfaction	Strong/1938 (Enhanced AIDA model including want and solution)
AIDCA	Attention → Interest → Desire → Conviction → Action	Bedell/1940 (Traditional persuasion-based path to action)
AIDMA	Attention → Interest → Desire → Memory → Action	DeVoe/1956 (Well-known in Japan; emphasizes memory before action)
AKLPCP	Awareness → Knowledge → Liking → Preference → Conviction → Purchase	Lavidge & Steiner/1961 (Focuses on attitude formation in stages)
ACCA	Awareness → Comprehension → Conviction → Action	Colley/1961 (Highlights understanding and conviction)
EPC (K) C (A)	Exposure → Perception → Communication (Knowledge) → Communication (Attitude) → Action	ARF/1961 (Adds knowledge and attitude formation in advertising)
AAPIS	Awareness → Acceptance → Preference → Intention → Provocation of Sale	Wolfe et al./1962 (Emphasizes pre-purchase intention building)
AIETA	Awareness → Interest → Evaluation → Trial → Adoption	Rogers/1962 (Leading model for new product or innovation diffusion)
API A	Acceptance → Preference → Insistence	Spinwall/1964 (Describes brand loyalty and insistence behavior)
Nicosia Model	Subfield 1 → Message Exposure → Attitude Formation → Subfield 2 → Search and Evaluation → Motivation → Decision (Action) → Purchase Behavior → Feedback / Experience	Nicosia/1966 (Pioneering circular model with information processing)

engagement and brand communities, making it an advanced and forward-looking approach for its time.

The Nicosia model (Nicosia, 1966) is one of the earliest comprehensive consumer behavior frameworks and focuses on the interaction between the firm and the consumer through a feedback loop. The model is divided into four fields: the consumer's attitude formation based on the firm's communication, the search and evaluation of alternatives, the act of purchase, and post-purchase feedback that influences future decision-making. While the model provided a pioneering systems-based perspective on consumer behavior, its complexity and limited empirical testing have constrained its widespread application in contemporary marketing practice.

The EKB model (Engel et al., 1968; 1993; 2006) is a comprehensive framework that systematically explains the purchasing decision-making process as a series of stages, from problem recognition to post-purchase evaluation. It conceptualizes consumer decision-making in five sequential stages: problem recognition, information search, alternative evaluation, purchase decision, and post-purchase evaluation. While widely accepted—particularly during the Mass Media Era—the model's linear and internally processing-centered structure has been criticized for not adequately capturing the bidirectional, real-time, and algorithmically mediated behaviors that characterize the digital and social media eras.

Table 1-B: List of Consumer Behavior Models in the Mass Media Era (1900-1970)

Model Name	Step Overview	Proposer/Year (Bemerkungen (Hauptmerkmale oder Hintergrund))
EPIA	Exposure → Perception → Integration → Action	Sanclage & Fryburger/1967 (Condensed model linking perception to action)
EKB Model	Input → Information Processing → Decision Process → Decision Process Variables → External Influences Input: Stimuli (marketer-dominated / other) → External Search Information Processing: Exposure → Attention → Comprehension → Yielding / Acceptance → Retention → Memory Decision Process: Problem Recognition → Search (Internal / External) → Alternative Evaluation → Choice → Outcomes (Satisfaction / Dissonance) Decision Process Variables: Beliefs → Attitudes → Intention → Evaluative Criteria → Life-style → Normative Compliance and Informational Influence → Motives External Influences: Cultural Norms and Values → Social Class → Reference Group / Family → Unanticipated Circumstances	Engel et al. /1968 (Originally proposed as a systematic framework of consumer decision-making, the EKB model conceptualizes behavior as a sequential process of stimulus → processing → decision → outcomes → influencing factors. It was later refined (Engel et al., 1993; 2006) into a comprehensive model covering the full decision cycle—from problem recognition to post-purchase evaluation—and has served as a foundational theory for subsequent models such as AIDMA, AISAS, and AMTUL)
EARACP	Exposure → Attention → Retention → Attitude Change → Purchase	Schwartz/1969 (Emphasizes attitude change as core mechanism)
ACAIP	Attention → Comprehension → Attitude → Intention → Purchase	Howard and Jagdish Sheth/1969
PACYRB	Presentation → Attention → Comprehension → Yielding Retention → Behavior	McGuire/1969 (Links comprehension to purchase via attitude)
ACALTA	Awareness → Comprehension → Attitude → Legitimation → Trial → Adoption	Robertson/1971 (Based on psychological persuasion process)
EAPCBMA	Exposure → Attention → Perception → Comprehension → Belief → Motivation → Action	Longman/1971 (Includes social legitimation before trial)
ATR	Awareness → Trial → Reinforcement	Ehrenberg/1974 (Emphasizes cognitive and motivational stages)
APMAI	Attention → Perception → Memory → Attitude → Intention	Holbrook/1975 (Memory and attitude tied to purchase intention)
AMTUL	Awareness → Memory → Trial → Usage → Loyalty	Mizuguchi/1976 (Pioneer in loyalty marketing and retention strategy)

In contrast, The Howard–Sheth model (Howard & Sheth, 1969), another seminal comprehensive framework of the Mass Media Era, conceptualizes consumer decision-making as a complex learning process shaped by inputs from marketing stimuli, social influences, and perceptual and learning constructs. Its integration of psychological, social, and marketing variables offered a more holistic view than earlier linear models, providing an essential bridge between purely stimulus–response approaches and later information-processing perspectives.

Positioned at the transition from the Mass Media Era to the early Internet Era, Bettman’s Information Processing Model (1979), conceptualizes consumer decision-making as a dynamic system of information acquisition, evaluation, and integration. Closely related to the Engel–Kollat–Blackwell (EKB) framework, it strengthened the information-processing perspective by emphasizing cognitive strategies and memory structures in complex decision environments.

Thus, the Mass Media Era gave rise to numerous influential consumer behavior models, such as AIDMA and AMTUL, which examined the psychological mechanisms of consumer decision-making from various perspectives. A comprehensive overview of the major models introduced from the early 1900s to the 1970s is presented in Table 1-A and Table 1-B. These tables organize linear stage-based models and more complex frameworks grounded in information-processing and decision-making theories under the broad category of “consumer behavior models.” Each model provided foundational insights into how consumers perceive, evaluate, and respond to marketing stimuli, thereby serving as theoretical cornerstones for the development of more contemporary frameworks.

Tables 1-A and 1-B are adapted from Yamaguchi (2012) with original modifications that include the introduction of historical period classifications, the addition of key models such as Nicosia and EKB, and explanatory annotations regarding their theoretical contexts. All subsequent tables (Table 2 and beyond) were independently organized and created by the author based on multiple previous studies, including Uno (2004), Solomon (2014), Schiffman and Wisenblit (2015), Aoki (2019), Kim (2020), Kotler et al. (2016), and Kotler et al. (2021).

II-1-(2) The AIETA Model as a Theory of Innovation Diffusion

Similar to earlier models such as AIDMA and AMTUL, the 1960s saw the emergence of theoretical frameworks aimed at explaining broader technological diffusion processes. A prominent and widely referenced example in practice is the Awareness–Interest–Evaluation–Trial–Adoption (AIETA) framework. In contrast, Rogers’s (1962) scholarly formulation of the innovation-decision process comprises Knowledge, Persuasion, Decision, Implementation, and Confirmation. In this paper, AIETA is used as a practitioner-orientated shorthand that parallels Rogers’s process for communicative clarity, while Rogers’ original formulation is cited as the theoretical foundation. Initially developed to explain the diffusion of agricultural innovations, Rogers emphasized that the model was not limited to agriculture but rather described a psychological process common to the diffusion of innovations across domains such as education, healthcare, marketing, and information and communication technologies (ICT).

Subsequent research has applied the model to the diffusion of modern technological products such as the Internet, smartphones, and AI applications. For example, a study conducted at Houdegbe North American University in Benin examined the factors influencing smartphone adoption among university students (Tunmibi, 2014). Drawing on Rogers’ Diffusion of Innovations Theory and the AIETA framework, the study found that Internet browsing functionality significantly impacted smartphone adoption. Additionally, it revealed that key determinants of adoption include a smartphone’s relative advantage, perceived complexity (ease of use), opportunity for trial, observation of others’ usage, and compatibility with the user’s lifestyle (Rogers, 2003).

The AIETA model and Rogers' broader diffusion theory remain highly relevant frameworks for contemporary consumer behavior analysis. For instance, the adoption process of smartphones can be mapped to the AIETA stages as follows:

Awareness: The consumer becomes aware of the existence of smartphones.

Interest: The consumer develops interest, perceiving potential utility or convenience.

Evaluation: The consumer assesses a product by comparing its prices, features, and alternatives.

Trial: The consumer tries out the product, either in-store or through others.

Adoption: The consumer decides to purchase and integrate the product into daily life.

However, the AIETA model has some limitations. The chief among them is its inability to adequately explain post-adoption behaviors, such as continued usage, brand advocacy, and discontinuation. In response, extended models have been proposed in recent years, incorporating additional stages, such as Action and Repetition, as seen in frameworks including Attention–Interest–Research–Examination–Action–Repetition (AIREAR) and Attention–Interest–Examination–Comparison–Action–Repetition (AIECAR). These expansions aim to capture consumer behaviors, such as sustained engagement, brand loyalty, and fan-based promotional activity, offering more comprehensive tools for analyzing the post-adoption phase of consumer decision-making.

II-2. Consumer Behavior Models in the Internet Era (Since the 1980s)

Since the 1980s, the widespread adoption of the Internet and mobile devices has dramatically transformed consumers' access to information, leading to significant changes in their purchasing behavior. In particular, since the 1990s, with the proliferation of personal computers and mobile terminals, the emergence of search engines such as Google and Yahoo, and the expansion of e-commerce platforms, consumers have shifted from being passive recipients of one-way information delivered by mass media to becoming active agents who seek, compare, and evaluate information to make purchasing decisions.

This environmental shift generated behavioral characteristics that existing consumer behavior models, developed primarily in the context of mass media, could no longer fully capture. Consequently, there emerged a pressing need to construct new theoretical frameworks to account for this transformation.

Among the representative models from this period are the Association Model proposed by Preston (1982), the Stimulus–Organism–Response (S-O-R) model by Nakanishi (1984), the First Moment of Truth (FMOT) and Second Moment of Truth (SMOT) models introduced by Procter & Gamble's (P&G, 2005; see also Kondo & Inoue, 2015), and the Consumer Decision Process (CDP) model by Blackwell et al. (2006) (see Table 2). This period includes early Web-based and pre-digital experiential models, which bridged traditional mass-media frameworks and the emerging digital environment. These models offer critical insights for understanding the full range of consumer behaviors in online environments, from awareness to evaluation and consumption. They reflect the transition from passive to active consumer roles, highlighting the increasing importance of behaviors such as searching and sharing in the contemporary digital landscape.

The Association Model, proposed by Preston (1982), outlines more than 30 detailed psychological and cognitive steps, ranging from advertising exposure to product recognition, evaluation, trial, and adoption. It is regarded as a sophisticated framework for measuring advertising effectiveness. This model meticulously structures a sequence of processes, from initial media contact and recognition of advertising elements to comprehensive product perception,

search behavior, trial, and eventual adoption, providing a nuanced understanding of consumer responses to advertising stimuli.

Furthermore, the S-O-R model, proposed by Nakanishi (1984), is grounded in psychological stimulus-response theory and introduces internal consumer processing mechanisms such as goal orientation, short-term memory, and long-term memory.

Specifically, the theoretical roots of this model can be traced back to Mehrabian and Russell's (1974) framework in the field of environmental psychology, which conceptualized human behavior as a sequence of stimulus, organism, and response, mediated by affective dimensions such as pleasure, arousal, and dominance. By incorporating these internal variables, the model provides a theoretical foundation that extends beyond simple reactive purchasing behavior. Although not a strictly sequential behavioral model, it offers a foundational psychological framework that integrates internal processing and has since become one of the core theories in consumer behavior analysis, playing a significant role in shaping the theoretical underpinnings of contemporary behavioral models.

To further understand consumer behavior in the Internet age, the Moments of Truth concept, originally proposed by P&G, serves as an important theoretical starting point. This practitioner-driven framework was later expanded and popularized by Lecinski (2011), who emphasized its relevance in digital contexts. The model comprises two key stages: the FMOT and SMOT.

FMOT refers to the moment when a consumer makes a purchase decision in front of a store shelf, typically within three to seven seconds, based on an intuitive judgment (Procter & Gamble, 2005; see also Kondo & Inoue, 2015). At this stage, factors such as package design, shelf display, pricing, and brand awareness strongly influence consumers' decision-making processes.

Table 2: List of Consumer Behavior Models in the Internet Era (1980-2004)

Model Name	Step Overview	Proposer/Year (Bemerkungen (Hauptmerkmale oder Hintergrund))
Association model Preston	Distribution → Vehicle Exposure → Advertising Exposure → Advertising Awareness → Advertising Elements Awareness → Association Evaluation → Product Perception → Integrated Perception → Products Evaluation → Prior Evaluation → Integrated Evaluation → Product Stimulation → Prior Stimulation → Integrated Stimulation → Search → Search Perception → Search Evaluation → Search Stimulation → Trial → Trial Perception → Trial Stimulation → Adoption → Adoption Perception → Adoption Evaluation → Adoption Stimulation	Preston/1982 (A highly detailed theoretical model outlining more than 30 stages from advertising exposure to final adoption. This model gained attention as an advanced framework for measuring advertising effectiveness)
S-O-R	Stimulus → Perception/Goal → Short-term Memory → Behavior (→ Long-term Memory → Retention Process)	Nakanishi/1984 (An extended version of the classical Stimulus–Response theory in psychology, incorporating internal consumer processing such as goal orientation and memory. Rather than a stepwise behavioral model, it serves as a theoretical foundation for other models.)
FMOT	Stimulus → First Moment of Truth (Shelf)	P&G/2005 (A representative practical model that emphasizes the “First Moment of Truth”—the critical moment of in-store decision-making and brand experience; see also Kondo & Inoue, 2015)
SMOT	Stimulus → First Moment of Truth (Shelf) → Second Moment of Truth (Experience)	P&G/2005 (An extended version of FMOT focusing on the post-purchase experience (e.g., usage and satisfaction), which influences future purchasing and brand evaluation; see also Kondo & Inoue, 2015)
CDP (Consumer Decision Process)	Need Recognition → Search for Info → Prepurchase Evaluation → Purchase → Consumption → Postpurchase Evaluation → Divestment	Engel et al. /1993 (Comprehensive 7-step decision-making model evolving from the EKB framework. It systematically describes the process from need recognition to divestment.) (latest revision 2006)

Conversely, SMOT focuses on a consumer's experience with a product after purchase. This represents the moment at which the consumer evaluates a product's quality, usability, and effectiveness through direct experience. A positive experience at this stage may trigger repeat purchases and favorable word-of-mouth recommendations, whereas a disappointing experience may result in negative reviews or avoidance of future purchases.

Although FMOT and SMOT address different phases within the broader process of consumer behavior—from product recognition to post-purchase experience—they are both innovative in that they emphasize critical “moments” of brand interaction. This approach introduces a new time-axis dimension, in contrast to traditional linear cognition-to-action behavioral models.

Among the various consumer behavior models from this era, one of the most noteworthy in closing is the CDP model proposed by Blackwell, Miniard, and Engel (Blackwell et al., 2006). This model provides a comprehensive framework for understanding consumer behavior, from the initial recognition of a product or service to its purchase, use, and eventual disposal. According to this model, consumer behavior proceeds through five stages: Problem Recognition, Information Search, Evaluation of Alternatives, Purchase Decision, and Post-Purchase Behavior (Blackwell et al., 2006). These stages are explained as follows:

First Stage, Problem Recognition: Consumers recognize a need or desire based on internal or external stimuli, such as feeling hungry or wanting new clothes.

Second Stage, Information Search: Consumers gather information to resolve problems. This may involve visiting stores, browsing the internet for reviews, or consulting friends and family.

Third Stage, Evaluation of Alternatives: Based on the collected information, consumers evaluate the available options by comparing factors such as price, quality, brand image, and product reviews.

Fourth Stage, Purchase Decision: Consumers make a final decision regarding what to purchase and where to buy it.

Fifth Stage, Post-Purchase Behavior: This stage includes consumers' experiences and responses after purchase, such as satisfaction or dissatisfaction, repurchase intentions, and word-of-mouth communication, which may influence future purchasing behavior.

Compared to models such as AIDMA and AISAS, which conceptualize the consumer purchasing process in relatively simple stages, the CDP model incorporates more complex consumer psychology and behavior. It systematically explains the psychological and behavioral changes that consumers undergo, thereby offering critical insights into developing advanced marketing strategies. For instance, in the first stage of problem recognition, marketers can accurately identify consumer needs and develop products or services that align with them. In the second stage, information search, consumers' purchase intentions can be enhanced through communicating information. Because of its comprehensive and structured nature, the CDP model is widely regarded as an effective tool for formulating marketing strategies.

As described above, the CDP model (Blackwell et al., 2006) is considered a representative decision-making theory for the Internet era. In contrast to AIDMA and AISAS, it can capture the complex psychological behaviors of consumers, such as information searching and comparative evaluation, in a step-by-step manner.

II-3. Consumer Behavior Models in the Social Media Era (2005-2015)

The rise of social media can be traced back to Mark Zuckerberg's 2004 launch of Facebook at Harvard University.

This was followed by the introduction of YouTube in 2005, Facebook's public release in 2006, and the emergence of Twitter later that year. These developments have marked the rapid proliferation of social media platforms, making them widely accessible to the public. Consequently, consumers gained the ability to publish and share information freely, anytime and anywhere. This shift transformed the traditional one-way mass-media-driven model of communication into a bidirectional and participatory structure (Kaplan & Haenlein, 2010).

This transformation highlights the behavioral characteristics that traditional mass-media-centric consumer behavior models fail to capture, thus prompting the need for new theoretical frameworks. Representative models that emerged during this period include Preston's (1982) Association Model, Nakanishi's (1984) S-O-R model, and Procter and Gamble's (P&G, 2005; see also Moriguchi, 2017) FMOT and SMOT models (see Table 2). These models offer critical insights into consumer behavior in the online environment, especially by emphasizing the increasing importance of behaviors such as searching and sharing, which reflect the consumer's shift from passivity to proactivity.

Simultaneously, while physical touchpoints in brick-and-mortar stores declined, non-face-to-face interactions, particularly through web-based channels, expanded dramatically. Consumers increasingly began to discover products through various means, consulting friends or online reviews, and seeking reassurance before making purchases or service-related decisions. In addition to the diversification of product discovery and purchase pathways, UGC, such as reviews, word-of-mouth, and social media posts, has significantly influenced consumer decision-making. Consequently, marketing strategies today increasingly center on concepts such as "empathy" and "sharing."

In response to these shifts in the media and consumer environment, several new models have been proposed to better explain consumer behavior in the social media age (Japan Promotional Marketing Institute [JPM], 2021). This study focuses on a range of models that emerged and evolved during the social media era (2004-2015), as summarized in Table 3. Among them, several have gained prominence in both academic and practical domains, which will be discussed in greater detail in the following sections.

Representative models such as AISAS (Dentsu, 2005) and its extended version AISCEAS; Sympathize–Identify–Participate–Share & Spread (SIPS) (Dentsu, 2011), which incorporates emotional and empathetic elements; and the Customer Journey Map (CJM) (Risdon, 2011; Kotler et al., 2016), which visualizes digital touchpoints in chronological order, have been widely adopted in global corporate strategies and marketing education.

The AISAS model, proposed by Dentsu in 2005, stands out for explicitly incorporating the behavior patterns of the internet era—namely, "Search" and "Share"—which distinguish it from earlier mass media-oriented models such as AIDMA. AISAS has become one of the most widely recognized frameworks in academia and practice in Japan for explaining consumer behavior in the social media era.

Similar to AIDMA, the AISAS model divides consumer behavior into cognitive (Attention), affective (Interest), and behavioral stages. However, it differs significantly in how it structures the behavioral stage. While AIDMA includes only "Action" (i.e., purchase) as the final behavioral step, AISAS adds two key processes: "Search," which reflects the tendency of consumers to seek information online before purchasing, and "Share," which reflects post-purchase behavior such as sharing experiences on social media. This structure effectively captures contemporary patterns of consumer behavior shaped by digital media.

The exclusion of "Memory" from AISAS (originally present in AIDMA) can be attributed to a growing reliance on external memory sources, such as search engines and smart devices, which have diminished the importance of internal cognitive storage. Furthermore, the increasing prevalence of consumers voluntarily sharing their purchase

experiences via social platforms contributed to the inclusion of the “Share” stage.

In other words, while AIDMA assumes a “push” model of communication—where firms deliver information unidirectionally to passive consumers—AISAS reflects a more active consumer paradigm, wherein individuals search for information autonomously and disseminate their own experiences online. The emphasis on post-purchase behavior (“Share”) is one of the model’s most important contributions.

Building upon AISAS, the AISCEAS model (Mochino, 2005) extends the consumer journey by adding deliberative processes such as “Comparison” and “Examination,” resulting in the sequence: Attention, Interest, Search, Comparison, Examination, Action, and Share. This expansion emphasizes more reflective decision-making behaviors that are particularly suited to high-involvement or complex purchasing contexts.

Consumer behavior models, such as the FMOT and SMOT, introduced during the Internet era, were originally developed based on assumptions rooted in physical retail environments and traditional media contexts. However, since the mid-2000s, the widespread adoption of smartphones has significantly transformed consumer behavior. Consumers now proactively search for and compare information online before encountering a product, often completing most of their decision-making processes before purchasing.

In response to these changes, Google (Lecinski, 2011) proposed the Zero Moment of Truth (ZMOT) model,

Table 3: Consumer Behavior Models in the Social Media Era (2005-2015)

Model Name	Step Overview	Proposer/Year (Bemerkungen (Hauptmerkmale oder Hintergrund))
AISAS	Attention → Interest → Search → Action → Share	Dentsu/2005 (A representative Japanese-origin model emphasizing the importance of “Search” and “Share” in consumer behavior)
AISCEAS	Attention → Interest → Search → Comparison → Examination → Action → Share	Mochino/2005 (An extended version of AISAS that incorporates more deliberate decision-making processes such as “Comparison” and “Examination”)
AIDEES	Attention → Interest → Desire → Experience → Enthusiasm → Share	Katahira/2006 (A model that emphasizes emotional values, including personal experience and enthusiasm before sharing)
VISAS	Viral → Influence → Sympathy → Action → Share	Omoto/2010 (A viral-focused model explaining how influence and empathy spread through networks)
SIPS	Sympathize → Identify → Participate → Share & Spread	Dentsu/2011 (A symbolic model of the social media era, where engagement begins with empathy and participation rather than traditional advertising)
CJM	Unawareness → Awareness → Comparison → Experience → Purchase → Retention	Risdon/2011 (A visual mapping approach to customer experience flow that integrates both qualitative and quantitative insights. Established in the UX and service design domain, and later adapted into the marketing context by Kotler, 2017)
ZMOT	Stimulus → Search → FMOT (First Moment of Truth) → Second Moment of Truth (Experience)	Google/2011 (A model highlighting the consumer’s information search behavior before purchasing—the “zero moment”)
AISA	Attention → Interest → Social Filter → Action	Gaiax/2012 (A model focusing on SNS-based decision-making influenced by social filtering and empathy)
AISCA	Attention → Interest → Sharing → Confidence → Action	Yamaguchi/2012 (A model that explicitly incorporates “confidence” as a key factor in consumer decision-making)
AISDALSLove	Attention → Interest → Search → Desire → Action → Like/Dislike → Share → Love/Hate	Wijaya/2012 (A unique structure that includes emotional and attitudinal shifts such as Like/Dislike and Love/Hate)
ASPR	Attention → Selection → Purchase → Receive → After	Leonis & Co. /2014 (A structured model tailored for the e-commerce era, organizing the flow from purchase to receipt to after-service)
Micro-Moments	Want-to-know moments → Want-to-go moments → Want-to-do moments → Want-to-buy moments	Google/2015 (A theoretical model proposing the concept of “micro-moments”—instant decision-making triggered by smartphone searches)

which captures a new purchasing behavior pattern in which consumers, immediately after becoming aware of a product, actively search for information online and make decisions before initiating a purchase. During this phase, they consult review websites, social media posts, product videos, and price comparison platforms, forming their evaluations in advance. By articulating this “moment of decision through search,” ZMOT has become a pivotal framework for explaining consumer behavior in the post-smartphone, internet-driven environment (Globis University Graduate School of Management, 2019).

The widespread attention ZMOT has received is partially attributable to its adoption by global corporations. Procter & Gamble recognized the importance of ZMOT and enhanced its product-related content, such as reviews and instructional videos, resulting in increased consumer engagement and sales (Lecinski, 2011). Conversely, companies that failed to adapt to the ZMOT model faced negative consequences. One notable example is the US retailer JCPenney, which suffered from poor search engine optimization (SEO) strategies and limited online information, resulting in low search visibility on Google. This hindered consumers’ access to product information, leading to lost purchase opportunities and declining sales (Lecinski, 2011).

In addition to the ZMOT model, various other models have been developed and applied to specific industries or contexts, such as Attention–Interest–Desire–Experience–Engagement–Share (AIDEES) (Katahira, 2006b), View–Interest–Search–Action–Share (VISAS) (Yamaguchi, 2012), Attention–Interest–Share–Action (AISA) (Shimizu, 2012), Attention–Interest–Search–Comparison–Action (AISCA) (Yamaguchi, 2012), Attention–Interest–Desire–Action–Loyalty–Satisfaction–Love (AISDALSLove) (Wijaya, 2012), and Attention–Sympathy–Participation–Recommendation–Action (ASPRA) (Leonis & Co, 2014) as shown in Table 3. These models reflect the diversification of theoretical approaches aimed at adapting to novel information dissemination structures introduced by social media.

Among these approaches to understanding the dynamics of the Social Media Era, one particularly influential framework is the CJM, which focuses on the emotional value and mechanisms of empathy-based diffusion. Introduced by Risdon (2011) in the fields of UX and service design, the CJM incorporates perspectives such as lenses, personas, journey modeling, qualitative and quantitative insights, and empathy. It visualizes the chronological sequence of consumer behaviors, thoughts, and feelings from initial product awareness through purchase and post-purchase use, which is metaphorically described as a “journey.”

The CJM framework defines the customer journey in anticipated phases such as pre-awareness, awareness, information gathering, comparison, evaluation, purchase, and usage. It maps each touchpoint between a persona (a hypothetical customer) and a company or product and identifies the customer’s actions, thoughts, and emotions at each stage. This process uncovers the latent needs and emotional drivers, thereby revealing strategic opportunities and risks for a firm.

The CJM typically analyzes the user experience across phases such as “awareness,” “interest,” “consideration,” “purchase,” and “post-purchase.” It aims to understand customer behavior, cognition, and emotions at each touchpoint, helping organizations identify key interactions and align them with strategic interventions. Consequently, it has gained recognition as a customer-centric approach that emphasizes a shared understanding of the consumer experience and visualizes the logic behind decision-making (Kato, 2016).

The application of the CJM to marketing was advanced by Kotler et al. (2016), who integrated this framework into strategic marketing theory by linking it with contemporary consumer behavior models such as AISAS and Discovery–Engagement–Comparison–Consideration–Action–Experience (DECAX). Kotler et al. (2016) emphasized

the theoretical importance of CJM for marketers, positioning it as a method to visualize consumer touchpoints across “pre-purchase,” “purchase,” and “post-purchase” stages. Consequently, the CJM has been widely adopted as a strategic tool for designing marketing interventions based on the temporal progression of consumer emotions, behaviors, and thought processes.

Another notable model is AISDALSLove (Wijaya, 2012), which delineates the process: Attention → Interest → Search → Desire → Action → Like/Dislike → Share → Love/Hate. This model is distinctive in explicitly incorporating post-purchase emotional evaluation and attitudinal shifts, particularly with the inclusion of emotional states such as “Like/Dislike” and “Love/Hate.” This model visualizes how emotional responses to consumption experiences can influence social sharing and viral diffusion through platforms such as social media. This affective axis provides a theoretical contribution that is absent from more rational, linear decision-making models.

With the proliferation of social media, new models have emerged that emphasize consumer-led engagement, rather than firm-driven messaging. One such model is the SIPS framework, introduced by Dentsu (2011). Unlike AISAS, which centers on company-initiated processes such as “Search” and “Action,” SIPS begins with “Sympathize,” signifying a paradigm shift toward consumer behavior grounded in empathy. This model reflects the interactive and participatory nature of the social media era and redefines marketing communication through a bottom-up lens.

Specifically, the SIPS model illustrates a process in which consumers resonate with a brand or its content (Sympathize), internalize its value and worldview as personally relevant (Identify), engage with the brand and other consumers (Participate), and share and spread their experiences through social media and other platforms (Share & Spread).

SIPS stands apart from AIDMA and AISAS by assuming a structure in which consumers actively choose, interpret, and co-create brand meanings. The emphasis on “Sympathize” as the initial stage highlights the importance of brand meaning and contextual relevance, aligning particularly well with the value orientations of Generation Z. SIPS is increasingly recognized as a framework suited to contemporary media environments in which brand value is shaped less by corporate messaging and more by consumer resonance and engagement. It is particularly applicable to analyses focused on brand engagement and fan community formation, serving as a foundational perspective for marketing in an era characterized by empathy-driven economies and participatory cultures.

However, it should be noted that SIPS remains a practitioner-oriented model and lacks a formal academic theoretical framework. Further conceptual and empirical development is required to establish robustness within the scholarly discourse.

II-4. Consumer Behavior Models in the Content Era (2015-2019)

For this study, 2015 is defined as the turning point between the Social Media Era and the Content Era. This demarcation is based on several key developments. While the early 2010s were characterized by the prominence of connectivity and sharing functions on SNS, from approximately 2015 onward, visually oriented and story-driven platforms, such as Instagram, YouTube, and TikTok, gained rapid traction. These platforms became deeply embedded in everyday life, prompting consumers to transition from passive information recipients to active cocreators and content transmitters.

A particularly salient phenomenon during this period was the rise of “self-branding through content creation,” whereby individuals began curating and disseminating content that reflected their personal values and identities.

Consequently, consumers emerged not only as empowered decision-makers but also as influential “micro-broadcasters” capable of shaping the purchase behavior of others and sometimes rivaling corporations in communicative impact.

The active role of consumers as co-creators and disseminators of value-laden content also led to mainstream “influencer marketing” in Japan in 2015, accompanied by the widespread adoption of corporate content marketing strategies. Consequently, this period marked a shift in marketing focus from the transmission of product information to the generation and circulation of meaningful consumer experiences and stories. In this context, we define the Content Era as a phase in which consumer behavior is driven not merely by information but by the perceived value of content itself.

Representative consumer behavior models proposed during this era include the DECAx (Dentsu, 2015), Micro-Moments (Google, 2015), Dual AISAS (Atara Co., Ltd., 2015), the 5A Model (Kotler et al., 2016), Recognition–Attraction–Memory–Comparison–Examination (RAM-CE) (Endo, 2018), Unawareness–Like–Search–Share–Action–Spread (Iitaka, 2019), See–Attention–Understanding–Satisfaction–Engagement (SAUSE) (Mitsubishi Research Institute, 2019), Recognize–Search–Examine–Purchase–Share (RsEsPs) (Japan Promotional Marketing Institute [JPM], 2021), and Awareness–Like–Search–Action–Share (ALSAS) (Kashiwagi, 2019; Amano, 2021) models (see Table 4). Despite their varied origins and structures, these models share a common conceptual underpinning: consumers with an interest in a particular product or service actively search for relevant information, discover content through digital pathways, form relationships with content providers, and engage in purchasing and sharing behaviors. The following section examines key model representatives of this era in detail, paying particular attention to their structural innovations and theoretical implications.

Table 4: Consumption Behavior Model in the Content Era (2015-2019)

Model Name	Step Overview	Proposer/Year (Bemerkungen (Hauptmerkmale oder Hintergrund))
DECAx	Discovery → Engage → Check → Action → Experience	Dentsu/2015 (Content-based behavior model)
Micro-Moments	Want-to-know moments → Want-to-go moments → Want-to-do moments → Want-to-buy moments	Google/2015 (A theoretical model proposing the concept of “micro-moments”—instant decision-making triggered by smartphone searches)
Dual AISAS	Activate → Search → Interest → Share → Accept → Spread	Atara Co. & Dentsu/2015 (Expanded AISAS)
5A Model	Aware → Appeal → Ask → Act → Advocate	Kotler/2017 (Updated 4A for the digital & social era)
RAM-CE	Reach → Attention → Memory → Closing → Engagement	Endo/2018 (Memory- and relationship-oriented model)
ULSSAS	UGC → Like → Search1 → Search2 → Action → Spread → UGC	Iitaka/2019 (UGC-driven cyclical model)
SAUSE	Search → Action → Use → Share → Evaluation	Mitsubishi Research Institute/2018 (User experience loop)
RsEsPs	Recognition → Search → Experience → Share → Purchase → Spread	JPM/2019 (Emphasizes experience and sharing)
ALSAS	Algorithm → Sympathy → Action → Share → Algorithm	Amano/2021 (Modern model including algorithm interaction)

Several consumer behavior models emerged during the Content Era (2015-2019) to capture the increasing significance of consumer-generated content, participatory behavior, and non-linear decision-making. The DECAx model (Dentsu Inc, 2015), proposed by Atsuyuki Naito, has attracted attention as one of the earliest models to

incorporate content dissemination and sharing by consumers in the consumer decision-making process. The model comprises five stages: discovery, engagement, checking (rational evaluation and verification), action, and experience (consumption and content sharing). Its defining feature is the assumption that content-driven discovery initiates consumer engagement, which highlights the importance of content visibility in the earliest phase of a decision journey.

The Dual AISAS model (Atara Co., Ltd., 2015) was proposed to reflect growing consumer intention not only to buy products but also to share their experiences with others. This model is an expansion of the original AISAS framework and introduces a two-directional information flow.

Activate → Search → Interest → Share → Accept → Spread.

The Dual AISAS model distinguishes between two simultaneous behavior flows, one focused on purchase (AISAS for buying) and the other on information dissemination (A+ISAS for sharing). Unlike earlier models that assume a linear flow from firms to consumers, this model emphasizes the consumer-initiated spread of information, where shared content is first accepted and then spread, ultimately influencing others' buying behaviors. Thus, the model highlights the role of UGC and influencer-like diffusion mechanisms, shifting focus from emotional amplification to peer-to-peer information transfer.

The Dual AISAS model was empirically validated by Javed et al. (2022), who conducted a study involving approximately 1,000 Instagram users in Pakistan who followed fashion influencers. Their findings confirmed statistically significant effects across all behavioral stages of the Dual AISAS model. This suggests that influencer-generated content not only shapes consumer awareness and interest but also strongly influences consumers' desire to share content and engage in participatory behaviors such as word-of-mouth and online diffusion.

Furthermore, the model is fundamentally distinct from traditional unidirectional frameworks because it incorporates active consumer engagement unique to the Social Media Era, particularly through actions such as searching and sharing. These elements reflect a shift in consumer behavior from passive information reception to proactive involvement in consumption and communication processes.

The RAM-CE model, proposed by Recruit Lifestyle in 2017, represents an evolution of internet-era consumer behavior frameworks such as AISAS and AISCEAS (Recruit Lifestyle Co, 2017). It structures the consumer journey into five stages: Reach, Action, Motivation, Comparison, and Engagement. By explicitly incorporating "Motivation" as a driver for deeper involvement and "Engagement" as an outcome of ongoing interaction, RAM-CE captures the sustained, bidirectional relationship between consumers and brands in content-driven environments. This framework reflects the increasing importance of long-term consumer-brand interaction in the Social Media and Content Eras, where UGC, community participation, and repeated touchpoints significantly shape purchasing behavior.

The ULSSAS Model (Hotlink Inc., 2016) builds on the centrality of UGC in consumer behavior. Originally conceptualized by Iitaka (2019) as Unawareness–Like–Search–Share–Action–Spread, the model captures the flow from initial lack of awareness to post-purchase sharing. In this study, however, the model is redefined in the context of the Digital and Social Media Era as UGC–Like–Search1 (social media search)–Search2 (web search)–Action–Spread (Naka, 2024). This redefined model outlines a process in which users first encounter content via social networks, express interest (e.g., by "liking" it), conduct social (Search1) and web-based (Search2) searches, and proceed to purchase the product. The act of consumption generates new UGC that reinforces the cyclical process of content-driven engagement. The ULSSAS model is notable for explicitly positioning UGC as the starting point of the decision journey, although it lacks a formal theoretical foundation and remains practitioner-oriented.

Among the expanded versions of the CJM discussed earlier in Section I-3, Kotler's 5A Model (Kotler et al., 2016) is one of the most widely recognized. The five sequential stages—Aware, Appeal, Ask, Act, and Advocate—reflect a consumer journey that includes recognition, emotional attraction, active information seeking, purchase behavior, and post-purchase recommendation. Importantly, the model accounts for consumers who opt not to purchase, thus broadening the analytical scope to include non-conversion pathways. It captures the growing complexity of decision making in a content-saturated media landscape.

The Micro-Moments model (Google, 2015) was developed to reflect the increasing fragmentation of consumer decision-making in mobile-first environments. Rather than following a linear path, consumers make decisions based on contextual “moments of intent” throughout their daily lives. The model defines four core micro-moments:

I-want-to-know moments: When users seek information about a topic, product, or review.

I-want-to-go moments: When users look for nearby locations, often using geolocation.

I-want-to-do moments: When users search for how-to content or guidance.

I-want-to-buy moment: When users are ready to make a purchase or evaluate their options.

The theoretical significance of the model lies in its dual emphasis on responsive content provision and personalization of the user experience. It also captures the emergence of instant, context-driven consumer needs initiated by mobile search behavior. By identifying moments such as “I-want-to-know,” “I-want-to-go,” “I-want-to-do,” and “I-want-to-buy,” the model offers a distinctive perspective from process-oriented frameworks like AISAS and SIPS. Unlike earlier models, the Micro-Moments model emphasizes the importance of delivering personalized and timely content in direct response to real-time intent. Thus, it has come to be recognized as a representative framework of consumer behavior in the Content Era, an era characterized by fragmented, non-linear decision-making processes driven by the widespread adoption of smartphones and social media.

Furthermore, in recent years, countries such as Japan and China have experienced a weakening of their traditional institutions, cultural norms, and values, giving rise to more individualistic lifestyles. In Japan, the erosion of lifetime employment, growing prevalence of nonregular workers, declining marriage rates, and increasing rates of divorce and remarriage have destabilized the once-fixed anchors of work and family. While such societal shifts have granted individuals more freedom from traditional constraints, they have simultaneously introduced greater instability and uncertainty into individuals' personal and professional lives.

These shifts have further had a profound impact on consumers' cognitive and behavioral patterns. Contemporary consumers often exhibit fleeting commitments and shifting preferences; for example, feeling drawn to a competing company shortly after switching jobs, becoming interested in alternative products immediately after a recent purchase, or replacing previously chosen goods based on evolving circumstances. Such behavior illustrates a move away from stable, linear consumption toward what Bardhi and Eckhardt (2012, 2017) and Kubota (2020) have termed the “Liquid Consumer,” that is, an individual whose consumption is marked by transience, situational responsiveness, and emotional volatility.

In the Japanese context, this tendency has been analyzed as part of a “society of pleasure-seeking consumption” (Horiuchi, 2004), which emphasizes ephemeral enjoyment and the primacy of experiential value over long-term utility.

This shift can also be situated within Bauman's (2000) concept of liquid modernity, which highlights how the erosion of traditional social anchors produces both greater individual freedom and heightened instability. In this sense, the emergence of the “Liquid Consumer” (Bardhi & Eckhardt, 2012, 2017; Kubota, 2020) reflects not only

changes in marketplace dynamics but also broader societal transformations toward fluidity and transience.

This theoretical integration underscores how macro-level societal shifts intersect with micro-level consumption behaviors, reinforcing the necessity of cross-disciplinary approaches in consumer research and providing a foundation for comparative cross-cultural studies.

This growing consumer fluidity has also affected industries that were once considered stable. For instance, in the housing market, there has been an increase in purchases made with future resale in mind, in stark contrast to the traditional assumption of lifelong home ownership. Similarly, in the automobile industry, the influence of resale value on initial purchasing decisions has become more pronounced, contributing to the growth in short-term use models and subscription-based services. These changes extend beyond specific industries to affect overall consumption norms, leading to the rise of sharing economy models in which temporary access is valued over permanent ownership. Consequently, traditional ownership-centric consumption patterns are being replaced by usage-oriented behaviors that accommodate fluid life planning.

In response to these emerging dynamics, a consumer behavior model known as SAUSE was developed jointly by Mercari and the Mitsubishi Research Institute in 2018. This model captures the evolving stages of consumer engagement in a context in which value is derived not from ownership but from use and reusability. The model highlights several key shifts: the transformation of search behavior to include considerations for resale or sharing, the redefinition of post-purchase use, and the reconfiguration of product evaluation based on temporary ownership experiences. The SAUSE model offers a theoretically compelling framework that systematizes these transformations and provides meaningful insights into consumer behavior in the age of liquid consumption.

III. Transformations in Consumer Behavior in the Age of AI Coexistence (2020-Present)

Since the early 2020s, consumer behavior has undergone a profound transformation driven by the proliferation of generative AI and the introduction of unmanned retail formats. Pioneering examples, such as Amazon Go in the US and Wuren Chaoshi (无人超市) in China, exemplify this shift. In Japan, the movement toward unstaffed stores began in earnest following pilot experiments conducted at JR Akabane Station in 2018 and Yokohama City in 2019 (Hitachi Solutions Create, Ltd., 2020).

Accompanying these technological innovations is a fundamental shift from conventional models in which consumers actively search for and select information, toward “passive preference-shaping models,” wherein AI proactively suggests or curates options based on consumers’ preferences and behavioral histories. Recommendation engines such as Netflix, Amazon, and TikTok, as well as the widespread adoption of generative AI tools such as ChatGPT, released by OpenAI in November 2022, have significantly accelerated this trend (Nomura Research Institute, Ltd., 2023), shaping new patterns in consumer behavior.

In this “era of information explosion,” consumers are increasingly overwhelmed by excessive information and face growing complexities in their decision-making processes. Generative AI tools offer critical support in this environment by (1) providing instant access to vast knowledge databases, (2) integrating and summarizing information in real time, and (3) offering emotionally neutral and logically coherent responses. These capabilities enable AI to function as a powerful decision-support agent, allowing consumers to make faster and more accurate decisions, even under time or resource constraints.

For example, while traditional online shopping requires consumers to manually compare multiple pages, AI

agents now synthesize options and propose optimal solutions in real time, streamlining the purchase process. In addition, AI can uncover latent consumer needs, facilitating the discovery of new products and more fulfilling experiences. By leveraging purchase histories and behavioral data, AI enables hyperpersonalized product and service recommendations, guiding consumers more efficiently toward suitable offerings. Beyond e-commerce, AI is now deployed in brick-and-mortar settings to visualize customer behavior, optimize product placement, and enhance in-store experiences.

Consequently, AI is no longer merely a provider of information; it is evolving into a co-creative partner that collaborates with consumers throughout their purchasing journey. This collaborative relationship has prompted the development of new theoretical frameworks to explain consumer behavior in the AI age.

The ALSAS Model captures the logic of AI-influenced content virality, particularly on platforms such as TikTok (Kashiwagi, 2019; Amano, 2021). It represents the flow of Algorithm → Sympathy → Action → Share, where the algorithm selects content tailored to the user, the user emotionally resonates with it, takes action, and shares it. This model reflects a significant departure from conventional process models by embedding algorithmic mediation and affective responses at the core of the decision-making processes.

Another notable development is the Surf–Encounter–Accept–Motivation–Share (SEAMS) Model, introduced by Dentsu in 2023, which outlines the journey through which consumers navigate from passive content exploration to purchase and eventual content sharing. In this model, the journey begins with casual surfing of social media posts (Surf), followed by encountering a post of interest (Encounter), developing trust in the content creator (Accept), experiencing emotional uplift through purchase (Motivation), and sharing the product experience with others (Share).

This model is based on the idea that content with longer viewing times is prioritized by algorithms, thereby increasing exposure to similar content. When users encounter posts from aspirational influencers, they are more likely to trust and act accordingly. However, not all shared content goes viral; only that aligned with a user's habitual SNS expression is likely to be reshared, thus reflecting a selective, non-uniform diffusion structure. Therefore, the SEAMS model represents a significant departure from traditional unidirectional models and incorporates algorithmic influences, trust dynamics, and impulse-driven behavior, providing a novel framework for understanding impulse consumption behavior in the context of algorithmic information circulation.

Taken together, these developments underscore the need for new consumer behavior theories that account for the co-agency between humans and AI; the shift from ownership to access; and the non-linear, moment-driven, algorithm-mediated pathways that define decision-making in the contemporary digital landscape.

IV. Theoretical Limitations of Consumer Behavior Models and Directions for Future Evolution

Technological advances, including the diffusion of the Internet, smartphones, and social media, as well as the rise of AI, have significantly reshaped consumer behavior and led to the development of various consumer behavior models. While each model emerged within a specific historical and technological context and reflected the unique characteristics of its time, many of these models continue to retain explanatory power and coexist—even in the present Content Era and the emerging Age of AI—and are likely to remain relevant in the foreseeable future.

For example, the AIDMA model, originally developed in the age of mass media advertising, remains useful for analyzing the behavior of consumer segments with limited digital engagement, such as older adults and children

(Sato, 2011). Similarly, the 5A Model and CJM are effective in describing the decision-making processes of cautious consumers who may not be frequent users of social media but who actively research and seek others' opinions before making purchases. In contrast, the ULSSAS model offers a more appropriate framework, particularly for active social media users. For "digital natives" such as Generation Z individuals (approximately aged 15-24 years) and liquid consumers who exhibit flexible and fluid consumption patterns, the SAUSE model proves particularly relevant.

Therefore, it can be argued that none of these models are obsolete; rather, they serve as complementary tools—each capturing different consumer typologies, technological affordances, and contextual variables—and are likely to remain relevant in the AI-driven future. Nevertheless, despite their strengths, particularly in recognizing moment-driven and context-dependent consumer behavior and moving beyond linear purchase funnels, existing models are increasingly limited in their ability to capture the dynamic, algorithmically mediated, and socially diffused patterns of modern consumption.

In the Mass Media Era, as summarized in Table 1, a variety of models, including AIDMA and AMTUL, were developed to explain consumers' psychological processes from diverse perspectives. However, these models are premised on the unidirectional flow of information from firms to consumers, reflecting the period before the widespread adoption of the Internet. In that era, the power to communicate was largely concentrated in the mass media, and consumers were conceptualized as passive receivers of information. Similarly, early comprehensive models such as the Nicosia model and the EKB model made significant contributions to understanding consumer decision-making in the Mass Media Era. However, their predominantly linear and internally oriented structures have been criticized for failing to adequately capture the interactive, network-based behaviors—such as search activities and two-way communication—prevalent in contemporary contexts. Consequently, such frameworks are now of limited applicability, particularly in environments where consumers actively search for, evaluate, and generate content.

Internet-era models have attempted to capture the shift from passive information reception to active information seeking, as seen in consumers' engagement with search engines, online product comparisons, and e-commerce browsing behavior. Although these models offer important theoretical advancements, they have certain limitations.

First, they tend to focus on individual-level decision-making, neglecting the social and communal dimensions of consumption. The increasing influence of online reviews, message boards, and social media communities has highlighted the importance of peer input and collective decision processes—factors these models often overlook.

Second, despite acknowledging search behavior, many of these models continue to be rooted in the residual assumption of a unidirectional information flow. They do not sufficiently incorporate consumers' active roles as content creators through UGC, which significantly affects the visibility, credibility, and virality of marketing information in contemporary digital ecosystems.

Models such as the FMOT and SMOT models, diverted from mass-media-centered thinking, lack key elements characteristic of the Social Media Era—namely, the perspectives of empathy, sharing, and social influence. These frameworks are best understood as transitional models, bridging the gap between passive consumers of the Mass Media Era and highly networked, participatory consumers of the social age.

The CDP model (Blackwell et al., 2006), grounded in decision-making theory, is recognized as a representative framework for the Internet era. It excels in its systematic organization of the consumer cognitive process, from problem recognition to post-purchase evaluation. However, the model assumes deliberate and sequential decision-making, and thus it does not sufficiently address unconscious and rapid decision-making processes, such as those

prompted by AI-driven automated recommendations and peripheral-route processing.

Although models developed in the Internet era have made important contributions by recognizing the consumer as an active information seeker, they remain largely grounded in intrapersonal, linear information-processing assumptions and fail to fully account for social decision-making processes such as networked knowledge, collective empathy, and peer recommendation. As such, these models represent meaningful stepping stones, highlighting the shift from passive information reception to active exploration. Importantly, they lack the theoretical foundations to fully address the paradigm shift ushered in by social networks and co-creative consumption.

Since 2005, the emergence of the Social Media Era has prompted the development of new models that better reflect co-creative consumer behavior. Frameworks such as AISAS (Dentsu, 2005), CJM (Kato, 2016), ZMOT (Lecinski, 2011), and SIPS have been proposed to capture how consumers actively search, share, and connect with others in their decision-making processes. These models are valuable for visualizing the role of consumers as empowered actors in the information environment. However, several theoretical limitations of these models remain.

First, many of the models assume rational and sequential purchasing behaviors. For example, the AISAS model presumes a linear path: Attention → Interest → Search → Action → Share. However, consumers often bypass or reorder these stages due to emotional or situational influences. For instance, consider a consumer who impulsively purchases a limited-edition matcha pudding spotted at a convenience store while commuting. This consumer did not conduct prior research (Search) or share their experience on social media (Share). Their purchases were driven by emotional cues such as mood, hunger, or a sense of urgency linked to product scarcity. Such behavior effectively short-circuits the AISAS process, thereby illustrating the inherent limitations of linear decision-making frameworks and underscoring that consumer choices are often non-linear and affectively driven—patterns particularly prevalent in contemporary consumption contexts.

Second, many of the Social Media Era models rely on a linear process framework that fails to reflect the cyclical and iterative nature of modern decision-making. For example, consider a health-conscious office worker in their 30s who is exploring the purchase of a smartwatch. After hearing a colleague speak positively about the device, they began searching for terms such as “smartwatch sleep tracking.” Overwhelmed by the number of reviews and comparison metrics, they temporarily suspend the decision-making process. Days later, a YouTube recommendation video on “top wellness gadgets” rekindles their interest, leading them to reinitiate their search with keywords like “best smartwatch for beginners.” However, even at this stage, they do not finalize their decision. Ultimately, it is only after a direct interaction with the product during a conversation with a friend that they commit to a purchase.

This behavioral sequence—Recognition → Search → Comparison → Temporary Suspension → Re-Search → Interpersonal Influence → Purchase—defies the neat linearity of models such as AIDMA or AISAS. It is shaped by intermittent engagement, emotional triggers, and multisource influences, including digital media (e.g., search engines and video platforms), SNS, and face-to-face interactions. Such behavior underscores that contemporary consumer journeys are not linear information flows but rather dynamic, emotionally charged, and socially embedded processes. Constant exposure to fragmented information fosters decision-making through repeated cycles of reflection, reevaluation, and social reinforcement—patterns that challenge the applicability of traditional sequential models in contemporary consumption environments.

These findings suggest that existing models must evolve to better capture the fluid, non-linear, and multi-touchpoint reality of modern consumption, which is characterized by algorithmic mediation, emotional volatility, and collective influence.

Among the frameworks proposed in the Content Era, Google's Micro-Moments model (2015) has emerged as a representative framework of consumer behavior shaped by the widespread diffusion of smartphones and SNS. It captures fragmented and non-linear decision-making processes, focusing on moment-specific consumer needs such as "I-want-to-know," "I-want-to-go," "I-want-to-do," and "I-want-to-buy." By representing a significant departure from traditional process-oriented models such as AISAS and SIPS, it underscores the paradigm shift toward delivering hyper-relevant content at the precise moment of intent. As such, it symbolizes a new era in which "the value of content is judged in real time by the consumer."

However, while the Micro-Moments model excels in capturing instantaneous, context-driven behaviors, it is limited in its ability to explain broader consumer dynamics such as long-term purchase journeys, emotional evolution, and sustained brand engagement. Its focus on fragmented interactions results in only a partial view of the overall consumer experience.

Furthermore, the SEAMS model, a behavioral framework for the AI Era, also has theoretical limitations. This model tends to overestimate the influence of social media while oversimplifying the increasingly complex structure of consumer decision-making. By relying too heavily on algorithmic exposure and impulse-driven actions, the model risks downplaying the nuanced interplay between cognition, emotion, and social context.

As this study shows, from the Mass Media Era to the Age of AI Coexistence, the technological landscape and its surrounding societal context have had a profound impact on the structure of consumer decision-making. However, in today's consumer environment, several emerging behavioral characteristics are becoming increasingly prominent, yet are not adequately explained by existing models. These include: (1) AI-generated anticipatory information delivery, in which consumers are no longer the initiators of a search but recipients of predictive suggestions; (2) hyper-personalization, which creates tightly curated content ecosystems and behavioral enclosures; and (3) growing demands for social and ethical accountability in both consumption and corporate communication.

One of the defining features of consumer behavior in the AI era is the rise of zero-interface environments, in which interfaces are operated via voice, gaze, or gestures, radically compressing the decision-making process. Alongside this is the growing prevalence of co-created consumption, in which consumers collaborate with AI to design, plan, and engage in consumption. These developments signal a shift toward recursive AI-mediated consumer journeys that break away from the traditional linear cause-and-effect paradigm.

Existing behavioral models have yet to sufficiently theorize these trends—particularly in terms of co-creativity, reflexivity, and multi-agent collaboration between human users and AI systems. Therefore, there is a pressing need to construct a new consumer behavior model capable of capturing the logic of collaborative, co-created consumption in the age of intelligent systems.

To support future theoretical development, Table 5 offers a comparative overview of major consumer behavior models across historical periods. This table synthesizes the core conceptual foundations and structural limitations of each model, thereby providing a robust conceptual basis for designing new frameworks. Notably, the comparative analysis reveals that persistent challenges—such as assumptions of linearity, the underrepresentation of emotional factors, and the lack of integration with AI and broader social transformations—continue to constitute the primary theoretical gap in contemporary consumer research. In this respect, the table serves not only as a systematic historical synthesis but also as an explicit starting point for constructing next-generation theoretical models in the field of consumer behavior.

In particular, transitional phenomena such as zero-interface interactions, voice assistant-driven consumption, and

platform-contained purchasing behavior illustrate how the Content Era has already begun to converge with the AI Era. These developments further accentuate the structural gaps in existing models, which often fail to capture the compressed, frictionless decision-making processes and ecosystem-dependent behaviors now emerging.

These unresolved gaps underscore the urgency of advancing theoretical frameworks that holistically integrate technological mediation, emotional dynamics, and evolving societal contexts. In the Age of AI Coexistence, consumer decision-making is increasingly characterized by hyper-personalization, zero-interface interactions, and co-creative engagements between humans and intelligent systems.

These observations form the foundation for the concluding discussion, which outlines the conceptual imperatives and practical pathways for developing next-generation consumer behavior models capable of capturing this new reality.

Table 5: Comparison of Consumer Behavior Models by Era and Conceptual Limitations

Era	Representative Models	Core Concept (Model Characteristics)	Main Limitations (Theoretical/Structural Constraints)
Mass Media Era	AIDMA, AMTUL etc	One-way, linear process. Passive information reception → memory → action	Lacks interactivity due to passive model structure
			Does not assume consumer behaviors such as search, comparison, or information dissemination
			Fails to account for post-purchase behavior
			Does not consider individual differences or behavioral histories
			Lacks personalization and bidirectional communication mechanisms
Internet Era	FMOT, SMOT, AISCEAS etc	Emergence of active search behavior. Flow of search → consideration → action, premised on EC (e-commerce)	Assumes intra-individual processing and underestimates social influences
			Lacks incorporation of UGC (User-Generated Content) and social elements
			Biased toward unidirectional, linear search behavior
			Inadequately addresses unconscious or impulsive purchase behavior
Social Media Era	AISAS, SIPS, CJM, ZMOT etc	Emphasizes search, sharing, empathy, and bidirectionality. Focus on personas and co-creation	Overly reliant on a linear “search → share” sequence
			Fails to capture serendipitous discovery, viral diffusion, and cyclical engagement
			Insufficiently addresses irrational and emotion-driven decision-making
			Lacks structural flexibility for nonlinear or branching consumer journeys
			Difficult to quantify the credibility and influence of followers or user-generated content (UGC)
Content Era	Micro-Moments, ULSSAS etc	Context-dependent, moment-based behavior in the mobile era. Content value and experience-oriented	Overemphasizes momentary touchpoints
			Weak in capturing long-term loyalty and holistic behavioral structures
			Neglects the perspective of recursive learning
			Fails to address the fragmentation of attention resources
AI Era	ALSAS, SEAMS	Recommendation-based and co-creative consumption, recursive learning, Zero Interface, Hyper-Personalization	Incapable of accommodating fragmented and sporadic contact behavior
			Lacks theoretical systematization for co-creation and nonlinear dynamics
			Does not account for cognitive overload in an information-saturated environment
			Fails to address the shift in decision-making authority toward algorithms
			Skewed consumer choices caused by excessive optimization
			“Apparent interactivity” is limited by a structure in which consumers are subtly steered rather than empowered

V. Conclusion and Future Directions

This study examined the theoretical evolution and limitations of consumer behavior models from the Mass Media Era until the Age of AI Coexistence. It clarified a set of emerging issues in today's consumption environment, including nonlinearity, emotion-driven decision-making, and the influence of algorithmic infrastructure. Traditional models, such as AIDMA, AISAS, and SIPS, have provided useful frameworks that reflect the technological and media environments of their respective times; however, in a world in which AI actively intervenes in consumer decision-making, these models fall short of capturing the complexity and fluidity of contemporary consumption behavior, thereby underscoring the need for theoretical renewal.

Therefore, this study identifies eight key theoretical limitations, each pointing to critical gaps that must be addressed in future model development:

(1) Inability to Consider AI-driven Anticipatory Choice Environments

The AISAS and SIPS models are still based on the assumption that consumers actively seek and select information. However, in today's context, AI frequently presents options before consumers initiate a search, fundamentally altering the structure of preference formation and decision-making.

(2) Incompatibility with Non-linear and Real-time Consumer Behavior

Modern consumers may impulsively purchase products after encountering them on social media feeds, with emotional resonance or social validation occurring afterward. This behavior reflects flexible sequencing, instantaneity, and nonlinearity, all of which are inadequately addressed by stepwise, linear models.

(3) Limited Ability to Visualize Emotion-driven and Ethical Consumption Decisions

While the SIPS model highlights empathy, it overemphasizes visible actions such as "sharing" and "participation," thereby failing to capture quiet forms of empathy or nonvisible motivations common among Generations Z and Alpha individuals, such as social resonance or alignment with SDG-related values.

This limitation can be more clearly understood by applying the Elaboration Likelihood Model (ELM), which explains attitude change through two distinct routes: the "central route" and the "peripheral route" (Petty & Cacioppo, 1986). What the SIPS model primarily captures as visible behavior corresponds to the central route, which is based on careful information processing. However, "silent empathy," such as ethical attitudes and emotional resonance, often belongs to the peripheral route, where processing is less visible. Consequently, existing consumer behavior models, including SIPS, cannot sufficiently theorize these invisible reasons for consumption, underscoring the need for future consumer research to address these gaps.

(4) Lack of Theoretical Integration of Algorithmically Structured Choice Environments

Today, consumers operate in environments that are shaped and constrained by algorithms. These algorithmic systems determine the scope and order of information exposure; however, traditional models do not sufficiently account for the external structure of the decision environment.

(5) Lack of Consideration for the Shift from Central-route to Peripheral-route Decision-making

With the proliferation of AI-driven recommendations and algorithmic feeds on social media, consumers are increasingly making decisions through emotional, intuitive, and unconscious processes (peripheral route processing), rather than logical deliberation (central-route processing). This reveals a widening gap between emerging decision-making behaviors and the assumptions underpinning existing models grounded in rationality.

(6) Lack of Consideration for Strategic Consumer Behaviors such as Conscious Disconnection and Deliberate Avoidance

While recent consumer behavior models have emphasized active engagement through actions such as participation, sharing, and connectivity, they have largely neglected to theorize “conscious disconnection”—that is, the deliberate act of distancing oneself from digital stimuli. Such behavior is not merely an expression of disinterest; rather, it is often a proactive choice made to protect one’s mental space, restore focus, and reclaim autonomy. In an era of hyperconnectivity and algorithmically driven overstimulation, these forms of intentional disengagement function as strategic actions aimed at enhancing psychological well-being.

Practices such as *digital detox* and “choosing not to choose” are increasingly being recognized as valuable lifestyle strategies. Nevertheless, existing models have yet to incorporate these behaviors as legitimate consumer responses. To fully understand consumer decision-making in the modern digital environment, it is essential to recognize and integrate strategic disengagement into theoretical frameworks.

(7) Absence of the Joy of Missing Out Perspective

Current consumer behavior models also fail to capture the emotional dimensions represented by the Joy of Missing Out (JOMO), which stands in contrast to the widely examined Fear of Missing Out. JOMO refers to the sense of positive psychological fulfillment that arises when individuals intentionally detach themselves from excessive information, social comparisons, and digital noise. This is not a withdrawal driven by fear but rather a shift toward internal satisfaction and intentional living.

This trend is particularly pronounced among the younger generations, who place a high value on mindfulness, psychological safety, and authentic experiences. This shift signals the emergence of a *post-materialist orientation*, where the pursuit of “more” is no longer equated with happiness. However, emotional states and behavioral patterns, such as JOMO, have yet to be integrated into existing theoretical models. This omission represents a critical theoretical gap in understanding how satisfaction, happiness, and consumer choice have been redefined in the digital age.

(8) Lack of Integration with Consumer Well-being

Convenience and efficiency have significantly improved in the current context of AI and algorithm-enhanced consumer support. However, these advancements have also intensified psychological and social side effects such as choice overload, information fatigue, and loss of autonomy (Calo, 2014). Despite these developments, traditional consumer behavior models, such as AIDMA, AISAS, and CDP, remain centered on rational decision-making and behavioral optimization without theoretically incorporating the question of whether such actions contribute to long-term consumer well-being (CWB).

The concept of CWB has recently attracted global scholarly attention. This perspective expands beyond immediate satisfaction or functional utility to include dimensions such as Quality of Life (QOL), Psychological Safety, long-term self-actualization, and sustained happiness. This shift is not merely a matter of ethical concern but aligns with emerging corporate strategies that emphasize sustainable customer relationships and positive social impacts.

Nonetheless, most current consumer behavior models lack the theoretical capacity to capture the dimensions of CWB. New theoretical models must move beyond mapping decision-making paths and purchase actions to assess and predict how such behaviors contribute to personal well-being.

Consequently, these limitations indicate that existing models remain predominantly linear and rationality-dependent, lacking sufficient adaptability to consumption environments shaped by AI mediation, emotional triggers,

and networked social influence.

In particular, the defining features of consumer behavior in the AI era—zero interface environments, hyper-personalization, and co-creative decision-making with AI—demand a paradigm shift toward frameworks capable of capturing recursive, non-linear, and multi-agent consumer journeys.

Furthermore, critical issues have emerged in the development of many consumer behavior models in recent years. Models such as ULSSAS, DECAx, and ALSAS, primarily proposed by practitioners, contain valuable field-based insights but often lack theoretical coherence or robust empirical validation. In the field of marketing, it is common for models to originate in practice and only later be subject to theoretical formalization. However, this practice-driven approach has resulted in a structural disconnect between theory and practice, and many theoretical frameworks remain underutilized in real-world applications.

By clarifying these limitations and identifying theoretical blind spots in existing models, this paper positions itself as a theoretical point of departure for constructing next-generation consumer behavior models, including the proposed AI-Based Consumer Behavior Model (AIBCBM), which will be elaborated in a subsequent paper. Such a framework must go beyond traditional representations of decision-making structures and capture the broader implications of consumer actions on long-term well-being. In doing so, it responds to the urgent need to integrate phenomena unique to the AI Coexistence Era, where interactions are increasingly mediated by AI, shaped by hyper-personalized experiences, and co-created through human–AI collaboration into coherent theoretical systems.

This marks a crucial evolutionary axis in the development of marketing theory in the age of AI, ensuring its relevance in an era where technology, ethics, and social design increasingly intersect.

In doing so, this study makes a theoretical contribution by clarifying the limitations of existing consumer behavior models and highlighting key directions for their renewal in the AI Coexistence Era. These insights not only advance academic understanding but also offer practical guidance for firms and policymakers seeking to design consumer engagement strategies aligned with emerging digital realities.

In addition to the theoretical challenges identified in this study, three further perspectives will be critical in the construction of future consumer behavior models:

- (1) the role of UGC and consumer-generated media (CGM) in shaping purchase decision-making;
- (2) non-visual, screenless content consumption processes, exemplified by zero-interface interactions and the use of voice assistants; and
- (3) platform-dependent purchasing behaviors that occur entirely within specific ecosystems such as Amazon, Instagram, and TikTok.

These perspectives are indispensable for understanding the transitional phase from the Content Era to the Age of AI Coexistence and provide a foundation for cross-cultural and cross-industry comparative research. They are also directly connected to the structural components of the AIBCBM proposed in a subsequent paper.

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The Evolution and Challenges of Consumer Behavior Models in the Age of AI Co-Existence

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Abstract

This study, based on a theoretical review, aims to elucidate the structural impact of changes in industrial and social systems, as well as advances in AI technologies, on consumer decision-making and purchasing behavior. It seeks to critically examine the limitations of traditional consumer behavior models that no longer adequately capture contemporary consumption patterns.

Representative models such as AIDMA, AISAS, and SIPS demonstrated explanatory power within the technological and media contexts of their respective eras. However, in the current environment, where AI and algorithms not only deliver information but also shape the structure of choice, these models—built on the assumptions of linearity and rationality, are becoming increasingly insufficient.

This paper provides a comprehensive overview of the theoretical evolution of consumer behavior models from the Mass Media Era to the Age of AI Coexistence. It highlights key limitations, including the neglect of nonlinearity; underestimation of emotional dimensions, such as empathy and resonance; and lack of theoretical responsiveness to the structural constraints imposed by algorithmic environments. Ultimately, this study serves as a theoretical starting point for a paradigm shift in consumer understanding, laying the groundwork for the future reconstruction of theory and the development of innovative marketing strategies in the age of intelligent systems.