2026 Spring Conference Proceedings

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ACKNOWLEDGEMENTS

On behalf of the Marketing Management Association, it is my privilege to welcome you to the 2026 MMA Spring Conference. As we continue to advance MMA's mission of supporting high-quality scholarship in marketing and marketing education, I would like to extend my sincere appreciation to the many individuals whose efforts have made this conference possible.

The depth and diversity of submissions for this year's program have been impressive. The research shared here reflects both scholarly curiosity and relevance, addressing important questions across a broad spectrum of marketing topics. I am grateful to the authors of refereed and developmental papers, as well as to those who contributed through panel and special sessions. Your willingness to share your work strengthens our community and advances the discipline.

I also want to acknowledge the invaluable service of our reviewers. Their thoughtful, constructive evaluations are essential to maintaining the integrity and quality of the conference program. We are equally indebted to our Proceedings Editor, Beth Houran, for her careful and thorough work in preparing the conference materials.

Congratulations to the finalists for the Best Paper Award, and to the authors of the selected winning paper featured in these proceedings. Your scholarship exemplifies the standards of excellence that define MMA. Your contributions not only enhance this conference but also serve as a meaningful inspiration to colleagues across our field.

Thank you to all participants, contributors, and organizers for your commitment to MMA. I hope that you will plan to join us at our next in-person conference, the 2026 Fall Educators Conference. It is an event that offers valuable opportunities for scholarly exchange, professional development, and collegial connection. We will meet September 25–27 at the Drury Plaza Hotel New Orleans. I look forward to seeing you there for an engaging and rewarding conference experience.

Don Roy & Nisha RayChaudhuri

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Anjala S. Krishen is the Mel Larson Endowed Chair of Marketing and Interim Dean of Lee Business School at University of Nevada, Las Vegas (UNLV). She has a B.S. in Electrical Engineering from Rice University, and a M.S. Marketing, MBA, and Ph.D. from Virginia Polytechnic Institute and State University (Virginia Tech). Anjala held management positions for 13-years before pursuing a doctorate. To date, she has published over 90 interdisciplinary research papers in journals including Industrial Marketing Management, Psychology & Marketing, Journal of Services Marketing, European Journal of Marketing, and Journal of Marketing Education.

BEST PAPER AWARDS

WINNER

CORPORATE ACCIDENTS: COMMUNICATING RECOVERY

Priya Rangaswamy, Baruch College
Lizhihan Yu, Texas A&M University

Firms often are involved in unexpected corporate events, referred to as corporate accidents or disasters that evolve into a PR crisis. This article explores and contrasts two types of corporate accidents – industrial accidents such as oil spills and digital accidents such as data breaches and examines whether the firm's recovery communications can be an effective tool to a faster road to recovery by rebuilding consumer trust and decreasing negative emotions caused by the original incident. Four studies conducted find evidence that when firms employ both verbal and visual elements in their recovery communications, it results in a greater increase in trust and greater decrease in negative emotions towards the firm compared to verbal only communications. Furthermore, the effect is higher for negative emotions than it is for trust. The findings present important implications for firms dealing with such unexpected events.

Honorable Mention

SPLIT OR SPRINT: HOW SCARCITY-DRIVEN FOMO SHAPES PAYMENT-METHOD CHOICE

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PREPARING PROFICIENT MARKETERS: CRITICAL THINKING AND CREATIVITY IN MARKETING PEDAGOGY

Brian A. Vander Schee, Indiana University

EXTENDED ABSTRACT

The marketing profession experiences significant change over time as technology provides more sophisticated approaches to promotion, personalization, and customer satisfaction. The advances require revisiting marketing strategy, updating skills, and mastering new technologies designed for greater efficiency. Moreover, marketing graduates are expected to come into the marketing profession with the skills needed to contribute right away. As a result, marketing educators need to provide academic experiences that prepare marketing students for gainful employment. A significant consideration is how marketing students are trained to think critically and be creative. Each domain is supported by several skills for students to develop and tools for educators to use in marketing. The paper concludes with future research suggestions to enhance our understanding and provide direction for each skill and tool, with a focus on artificial intelligence utilization.

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CORPORATE ACCIDENTS: COMMUNICATING RECOVERY

Priya Rangaswamy, Baruch College
Lizhihan Yu, Texas A&M University

EXTENDED ABSTRACT

Firms often are involved in unexpected corporate events, referred to as corporate accidents that evolve into a public relations crisis. This research explores and contrasts two types of corporate accidents – industrial accidents such as oil spills and digital accidents such as data breaches and examines whether the firm's communications can be an effective tool to a faster road to recovery by rebuilding consumer trust and decreasing negative emotions caused by the original incident. Four studies conducted find evidence that when firms employ both verbal and visual elements in their recovery communications, it results in a greater increase in trust and greater decrease in negative emotions towards the firm compared to verbal only communications. Furthermore, the effect is higher for negative emotions than it is for trust. The findings present important implications for firms dealing with such unexpected crises events.

Industrial accidents are disasters such as oil spills, caused by industrial companies, either by accident, negligence or incompetence, great damage, injury or loss of life. Digital accidents in this context refers to data breaches that are intentional or unintentional release of secure or private/confidential information to an untrusted environment. Both types of corporate accidents are disasters for the firm that can erode consumers' trust in the firm and create negative emotions among consumers (Humphreys and Thompson 2014, Janakiraman et al. 2014). Drawing on attribution theory, scholars have classified crisis responsibility into three types: (1) victim crisis, in which the firm has a weak attribution of responsibility; (2) accidental crisis, which is an unintended accident in which the firm has minimal attributions of crisis responsibility; and (3) intentional crisis, which includes accidents and errors caused by human error and violation of law and other misdeeds by the organization (Coombs and Holladay 2002).

Although these events are rarely seen as an intentional crisis and customers view these as a victim or an accidental crisis (Janakiraman et al. 2014), these events still result in a consumer perception of violation of trust and experience anxiety at the moment of the event, irrespective of whether the consumers get affected or not due to the event (Martin, Borah, and Palmatier 2017). Although the above views presented in existing research solely relates to digital accidents such as data breaches, these arguments could very well be applicable to firms involved in industrial accidents such as oil spills. The oil spill involving BP in April 2010 resulted in massive economic losses and long-term ecological consequences. BP's stock price fell to 40% of its initial value (Economist 2010) and BP's brand reputation score fell from 67 to 50, public support for drilling dropped from 61% to 44%, tourism in the Gulf took a hit, consumer confidence fell including confidence in food safety (Humphreys and Thompson 2014).

Though both these disaster types erode consumer trust and generate negative emotions, they differ in scale and severity. Industrial accidents are more likely to happen at a catastrophic scale involving loss of human lives, economic damage and ecological consequences. On the other hand, in the case of digital accidents, the scale and severity is less than industrial accidents and assessing the consequences is more challenging due to the intangible nature of the accident. The societal consequences of the industrial accidents can also be assessed largely, whereas, in the case of digital accidents, not everyone whose records are compromised experiences victimization, but the unknown scope and lack of control over this threat makes this type of vulnerability especially troubling to customers (Martin, Borah, and Palmatier 2017). Despite the severity of industrial accidents, there is evidence of firms involved in industrial accidents recovering faster from these crises. In the case of the BP oil spill, 6 months after the explosion, the oil production in the Gulf waters exceeded pre-accident levels and BP's stock price rebounded to 80% of its pre-spill value and its brand reputation rose steadily two years following the accident, while consumer trust fully rebounded. This rapid return to pre-spill status quo is not limited to BP and has a striking similarity with the Exxon Valdez oil spill, noted as the biggest oil spill disaster until BP's (Humphreys and Thompson 2014).

As firms involved in either of these accidents (hereafter, referred to as industrial firms and digital firms), try to grapple with the crises, recovery communication becomes very important for firms to increase customer trust and attenuate the negative emotions caused by these events. Forming an effective recovery communication strategy can be highly challenging. Existing research has suggested that customers inclined toward processing information more deeply will engage in a more thoughtful assessment and evaluation of communication messages, leading to stronger attitudes (Mac-Innis, Moorman, and Jaworski 1991), thus making the accident more salient to customers.

This study has three major hypotheses:

H_1: For both industrial and digital firms, combining verbal and visual elements leads to a higher increase in trust compared to having only verbal elements in recovery communications.

H_2: For both industrial and digital firms, combining verbal and visual elements leads to a greater decrease in negative emotions towards the firm compared to having only verbal elements in recovery communications.

H_3: Combining verbal and visual elements in recovery communications has a greater effect on industrial firms.

A 2(Accident type: Industrial, Digital) x 2(Recovery message: Verbal, Visual+Verbal) between-subjects experiment was conducted to assess the dependent variables: customer trust and negative emotions generated. Results indicate that combining verbal and visual elements shows a greater increase in trust for both industrial and digital firms compared to just a verbal recovery communication. Combining verbal and visual elements in the recovery communication resulted in a greater decrease in negative emotions for both types of firms.

This study contributes to theory and practice in the following ways. First, it contributes to the nascent literature on corporate accidents – both digital and industrial. Second, while existing studies have looked at how the firm value gets affected due to the announcement of an accident, this study looks at the recovery communication strategy of these firms and

attempts to uncover an effective messaging strategy to communicate recovery. Third, the results show how firms can leverage their recovery communications as a tool to a faster recovery from crises situations.

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ZERO-FRICTION CONSUMPTION: STRATEGIC AND ETHICAL IMPLICATIONS OF BRAIN-COMPUTER INTERFACES FOR MARKETING MANAGEMENT

Anastasios Koukopoulos, Athens University of Economics and Business

ABSTRACT

Brain–computer interfaces (BCIs) are moving from laboratory neuromarketing to consumer applications that enable perpetual cognitive telemetry, detecting affective and cognitive states and even purchase readiness before conscious deliberation. This paper introduces Zero-Friction Consumption, a framework describing how neural-to-transaction pathways compress cognitive friction and accelerate purchase authorization, especially in digitally fulfilled contexts. We reframe the marketing mix as the Cognitive 4Ps and discuss strategic implications for product design, pricing, distribution, and promotion. We also examine risks to autonomy and mental privacy, including brain spyware, and propose neuro-rights–aligned safeguards for transparent, controllable BCI-mediated marketing.

INTRODUCTION

Brain-Computer Interfaces (BCIs) are emerging as a cutting-edge technology bridging the gap between the human brain and digital systems by translating neuronal signals into control commands (Mudgal et al., 2020). Originally designed for medical purposes, such as restoring mobility and communication for individuals with neuromuscular disorders, BCI technologies are now rapidly penetrating non-medical sectors, including entertainment, education, and marketing (Abdulkader et al., 2015; Al-Nafjan et al., 2017; Chu, 2015). The commercial availability of low-cost, consumer-grade EEG devices has enabled the development of applications that monitor users' emotional and cognitive states in real-time (Radončić et al., 2024). This evolution signals a shift from traditional neuromarketing, which was confined to laboratory studies, to a new era of perpetual cognitive telemetry. In this new context, companies seek not merely to understand consumer behavior but to predict and instantaneously satisfy desires before they are consciously expressed (Khondakar et al., 2024), creating the conditions for what is defined in this paper as Zero-Friction Consumption. This paper analyzes the strategic implications of this transition, proposing the Cognitive 4Ps model, and examines the severe ethical challenges regarding brain privacy and user autonomy.

LITERATURE REVIEW

BCI Technology in the Service of Intention Detection

A BCI system records the brain's electrical activity, extracts features from the signals, and classifies them to produce commands (Al-Nafjan et al., 2017). Modern research has demonstrated that it is possible to detect emotional states (e.g., joy, frustration) and

cognitive processes (e.g., workload, attention) with significant accuracy (Samal & Hashmi, 2024; Zammouri et al., 2018). For instance, studies have used the P300 potential, a brief positive spike about 300 milliseconds after a person detects or attends to a meaningful stimulus (Jin et al., 2012), and other markers to predict consumer preferences (Ishtiaque et al., 2025) and purchase intent (Yao et al., 2025). The ability of BCI systems to decode pre-intention, the neuronal readiness for action prior to conscious execution, forms the core of this new commercial strategy. Research by Mashrur et al. (2022) demonstrates that using machine learning on electroencephalography (EEG) signals can predict consumers' future choices with high accuracy, reaching 98.67% for the frontal cortex.

The Evolution of Neuromarketing

Neuromarketing uses neurophysiological tools (fMRI, EEG) to bypass subjective consumer reports and reveal subconscious reactions to marketing stimuli (Adeola et al., 2022). While traditionally focused on evaluating advertisements and products, the modern trend is moving towards integrating BCIs into in-the-wild conditions. Applications such as neuro-gastronomy for aroma perception (Velusamy & Radhakrishnan, 2026) and the use of BCIs for menu design (Reynolds, 2024), indicate that the technology is maturing for mass application. Furthermore, in tourism, BCIs are proposed to enhance accessibility, allowing individuals with disabilities to control their environment (Lin & Li, 2026)

METHODOLOGY

The methodology guiding this critical reflection involved a systematic review, evaluation and conceptual synthesis of literature addressing the intersection of neurotechnology and marketing management. To ensure that the study offers a substantive contribution to the field, it followed the process of critical reflective in research (Clarke & Turner, 2002). Relevant scholarly work was identified through comprehensive searches of major citation databases (Scopus, Web of Science, and Google Scholar), focusing on publications aligned with the core concepts informing the development of the proposed conceptual framework. Boolean queries incorporated keywords such as “Brain Computer Interface,” “Neuromarketing,” “Consumer Neuroscience,” “EEG,” and “Neuroethics,” applied in various combinations to capture a wide spectrum of pertinent research. No additional inclusion or exclusion criteria were applied, apart from restricting the language of publication to English. The resulting conceptual framework was subsequently developed by synthesizing insights from neuroscience, marketing strategy, and bioethics, integrating them conceptually to articulate the progression toward Zero-Friction Consumption and the emergence of the Cognitive 4Ps.

THE CONCEPTUAL FRAMEWORK OF ZERO-FRICTION CONSUMPTION

The condition of Zero-Friction Consumption is defined as the state where the decision-making and transaction initiation process occurs automatically, based on neural indicators, compressing the temporal and cognitive gap between desire and purchase authorization. Unlike traditional digital techniques aimed at reducing clicks, BCIs aim to reduce cognitive friction, understood here as the momentary mental pause that enables

conscious evaluation of an impulse. In this framing, "zero-friction" refers to the neural-to-transaction pathway rather than the elimination of downstream constraints such as inventory, delivery time, physical access, or budget limitations. As a result, BCIs may remove or compress deliberative pauses while physical and economic frictions can remain fully intact, particularly for tangible products and location-bound services. When a BCI system detects changes in EEG-inferred affective and cognitive states and automatically triggers a transaction, such as ordering food or selecting digital content, it can bypass the consumer's defense mechanism described by the Persuasion Knowledge Model (Friestad & Wright, 1994). Because consumer-grade EEG does not measure neurotransmitter concentrations directly, these systems infer states from electrical activity patterns rather than isolating specific neurotransmitters such as dopamine.

Zero-Friction Consumption is most literal in digitally fulfilled categories, where authorization and consumption occur in the same environment and can be nearly immediate, such as streaming media, software services, or virtual goods. For physical consumer goods and place-dependent services, the dominant effect is a shift toward neural-to-order immediacy, where intent is converted into authorization rapidly while fulfillment and experienced utility remain constrained by logistics, availability, delivery, and physical context. This distinction clarifies that BCI-enabled marketing primarily transforms how action is initiated, while traditional frictions associated with product materiality, pricing constraints, and distribution systems can remain central.

Understanding Zero-Friction Consumption as a neurally automated state has direct implications for how marketing activities are structured. Traditional marketing tools assume deliberate consumer decision-making, whereas BCI-enabled environments operate within pre-conscious neural processes. To reflect this new reality, the marketing mix can be reframed through the Cognitive 4Ps framework.

THE COGNITIVE 4PS

The integration of BCIs into marketing requires a reframing of the traditional marketing mix under a new operational reality in which the primary interface is not deliberate behavior but pre-conscious neurocognitive dynamics. The traditional 4Ps presume that consumer preference is expressed through observable interaction and that marketers optimize external touchpoints around those interactions. In BCI-enabled environments, however, marketing systems may detect readiness for action and affective valuation signals before the consumer engages in conscious search or deliberate comparison. This shifts the unit of analysis toward real-time neurocognitive states that can accelerate or shape transaction initiation. The Cognitive 4Ps are therefore best understood as an augmentation layer over the traditional 4Ps: they do not claim that product materiality, market pricing, or fulfillment logistics disappear, but rather specify how BCI-enabled systems mediate access, timing, personalization, and persuasion at the moment where desire is translated into action.

1. **Product as Symbiotic Extension:** The product ceases to be a discrete object and becomes a neural extension of the user. As noted in research on BCI gaming and virtual reality (VR), the user controls the environment or avatar directly via thought, creating a sense of embodiment (Adeola et al., 2022; Radončić et al., 2024). Koukopoulos (2025) describes this evolution as the entry of the cortex in the service

loop, where neural interfaces (like Neuralink) connect directly with service robots or digital agents, effectively dissolving the boundary between human intent and machine execution.

2. **Price via Neural Dynamic Pricing (NDP):** Pricing becomes an adaptive mechanism based on continuous neural feedback. Instead of relying on stated preferences or historical behaviour, Neural Dynamic Pricing uses real-time indicators such as emotional arousal, motivational salience or neural signatures associated with valuation, to estimate neural willingness-to-pay at any given moment. Algorithms can detect the affective attitude toward a product (Mashrur et al., 2022), identify fluctuations in desire or aversion and adjust the price accordingly. This transforms pricing from a static economic variable into a biologically responsive system that aligns moment-by-moment with the consumer's internal state.

3. **Place as Cognitive Distribution:** Place as Cognitive Distribution: In a BCI-enabled environment, distribution expands beyond physical or digital channel presence to include immediate accessibility through neurally detected intent. The point of interaction shifts toward the user's cognitive layer, where wants may be detected and transaction authorization can occur with minimal conscious effort. In tourism contexts, for example, BCI systems can monitor cognitive load, stress, or confusion and trigger support services such as navigation assistance, translation, or personalized recommendations without requiring a verbal or physical request (Lin & Li, 2026). At the same time, for most physical goods and place-bound services, cognitive distribution primarily compresses the ordering and authorization phase rather than eliminating the constraints of inventory, delivery, or physical access. The strategic shift is therefore from just-in-time interaction to just-in-want initiation, while downstream fulfillment remains governed by conventional operational realities.

4. **Promotion as Neural Burst Advertising:** Promotion evolves into a bidirectional communication process grounded in neural responsiveness. Neural Burst Advertising involves both triggering neural patterns associated with attention, curiosity, or desire and detecting neural feedback in real time to evaluate message effectiveness. Research shows that consumer engagement can be optimized when advertising content adjusts dynamically based on immediate neural data (Dinesh et al., 2025). Campaigns can therefore refine stimuli such as imagery, pacing, emotional tone, or narrative structure, milliseconds after detecting shifts in the viewer's neural state. This transforms advertising from a broadcast strategy into a closed-loop neural optimization system.

Table 1.

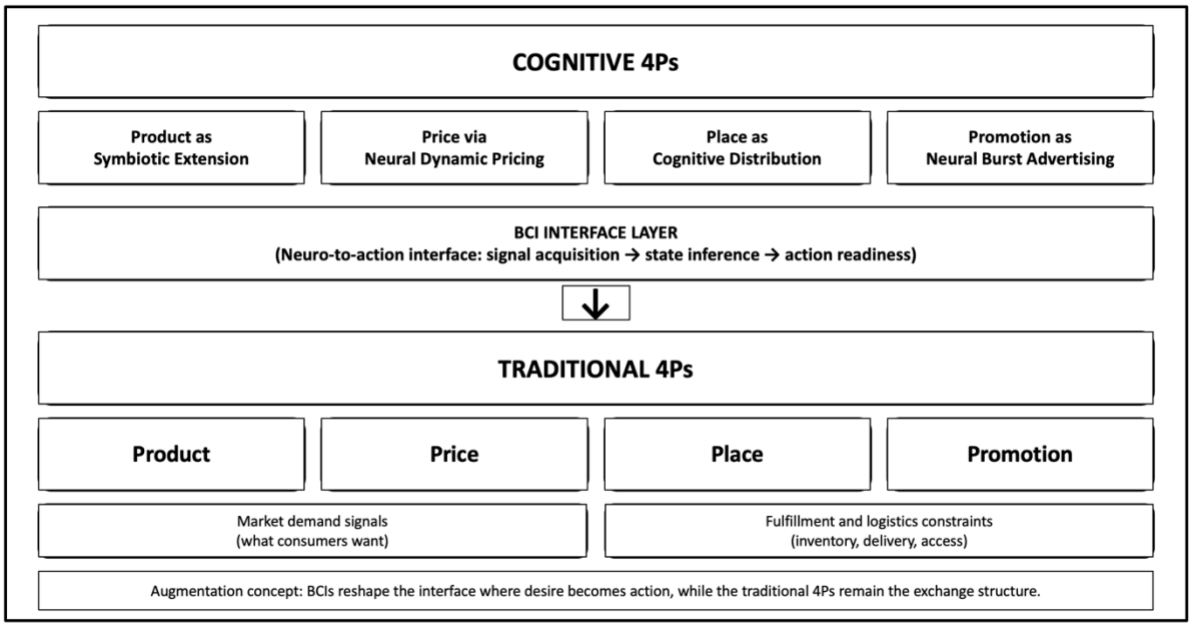
Comparison of the traditional digital marketing mix and the cognitive marketing mix

Marketing Mix Element	Current Digital Paradigm	The Cognitive Paradigm (BCI-Enabled)	Key Strategic Objective
Product	**Discrete Object/Service:** Focus on UX/UI design and external interactivity.	**Symbiotic Extension:** Direct neural control and psychological embodiment (Koukopoulos, 2025).	Maximize Neural Compatibility and integration with user's mental state.
Price	**Dynamic Pricing:** Based on external market demand, time, and browsing history.	**Neural Dynamic Pricing (NDP):** Based on real-time biological arousal and Neural Willingness-to-Pay (Mashrur et al., 2022).	Capture value at the precise moment of maximal neural desire expression.
Place	**Omnichannel:** Physical stores, e-commerce, and mobile apps.	**Cognitive Distribution:** The point of sale is the neural substrate. Fulfillment is Just-In-Want (Lin & Li, 2026).	Eliminate Cognitive Friction and temporal gaps between want and consumption.
Promotion	**Attention Economy:** Competing for conscious attention (clicks, views, impressions).	**Neural Burst Advertising:** Targeting subconscious pre-intentions and specific neural patterns (Abdulkader et al., 2015).	Bypass skepticism by aligning advertising stimuli with real-time Neural Biometrics.

As shown in Figure 1, the Cognitive 4Ps function as a neuro-digital interface layer that augments, rather than substitutes, the traditional 4Ps by reshaping how consumer intent becomes transaction initiation under BCI mediation.

Figure 1.

Cognitive 4Ps as an augmented layer



ETHICAL CHALLENGES AND REGULATORY ISSUES

The implementation of the above strategies raises critical bioethical issues. As marketing systems gain direct access to neural substrates, the boundary between service enhancement and invasive surveillance dissolves, exposing users to unauthorized data harvesting known as 'Brain Spyware'. Furthermore, the automation of consumption decisions threatens to erode human autonomy, reducing individuals to passive nodes in a commercial feedback loop unless robust 'Neuro-Rights' are established.

Brain Spyware and Privacy

Recording brain signals carries the risk of revealing sensitive information without user consent. Bonaci et al. (2014) describe the threat of Brain Spyware, malicious software that can extract personal data (such as PIN numbers or political beliefs) by analyzing P300 responses to visual stimuli. As BCI applications start to become available in app stores, the likelihood of malicious use of neurodata increases (Bonaci et al., 2014).

The Erosion of Autonomy and Neuro-Rights

BCI technology, by bypassing cognitive friction, may deprive the individual of the ability to reflect. The literature highlights the need to establish safety and ethical standards (Neuro-ethics) to protect mental privacy (Mudgal et al., 2020). Technical solutions, such as the BCI Anonymizer which filters signals before storage (Chizeck & Bonaci, 2014), have been proposed to mitigate these risks (Bonaci et al., 2014). Furthermore, the integration of the human cortex into commercial service loops raises profound questions about agency and

the potential for corporate systems to hack the biological reward system (Koukopoulos, 2025).

A neuro-literate marketing ethical code should translate neuro-rights into operational safeguards that make persuasion legible and controllable to the user in real time. Such a code would require neural data minimization and purpose limitation, with clear separation between signals used for service functionality and signals used for persuasion or pricing adaptation, alongside consent that is granular and easily revocable. It would also encourage privacy-preserving architectures, including on-device processing where feasible and user-accessible records of when neural inputs influenced recommendations, pricing, or transaction triggers. To avoid bypassing the Persuasion Knowledge Model, brands could explicitly signal when neural data is being used through persistent interface indicators and just-in-time disclosures that explain the basis of adaptation, coupled with deliberation safeguards such as confirmation steps, spending thresholds, or time delays for consequential purchases. These signals preserve autonomy by making the presence and purpose of persuasive influence transparent rather than covert.

CONCLUSIONS

The transition to Zero-Friction Commerce through BCI technology offers unprecedented opportunities for personalization, particularly in sectors such as tourism and healthcare (Lin & Li, 2026). However, perpetual cognitive telemetry threatens to erode consumer autonomy. A robust regulatory framework is required to ensure that technology serves humanity without manipulating it (Mudgal et al., 2020). As Koukopoulos (2025) suggests, as we merge our neural pathways with service loops, maintaining the distinction between user intent and systemic optimization becomes the defining challenge of the cognitive era.

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FACTORS AFFECTING PRESCRIPTION CHANGE TO A NEW DRUG: IMPLICATION FOR PHARMACEUTICAL FIRMS

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ABSTRACT

The pharmaceutical firm's detailing effort of a new drug plays an essential role in the success of the new drug launch. The study's objectives are to examine the three categories of factors and their relative influence on the physicians' prescription switch and to target those doctors who show a higher chance of switching to the new drug. A regression model applied to a national online survey of the physicians shows interesting results about the doctors' behavior and offers targeting strategy for the new drug. This study fills the gap in the literature in physicians' prescription change and potentially provides pharmaceutical firms with a customer-tailored detailing strategy.

INTRODUCTION

New drug products today are the key to survival in the pharmaceutical industry. However, the new product development process in the pharmaceutical industry happens to bear the riskiest and most expensive undertakings because of the considerable research and development costs involved. Consequently, the pharmaceutical firms' detailing effort of a new drug plays an essential role in the success of the new drug product (King et al., 2019; Campo et al., 2005). Anecdotal evidence suggests that over 70% of branded drug sales are attributed to detailing efforts which include detailing with sampling, with digital marketing, conference activities, and speaker programs attributing to remaining sales.

As the new drug comes out in the market, physicians first decide to try it for the treatment and then adopt it as a standard part of the treatment. In encouraging the doctor's decision to change to a new drug, the pharmaceutical firm's effort requires scheduling a meeting with potential prescribers, describing the benefits and side effects of the drug, and if applicable, leaving behind free samples for patients to promote the drug. The cost of a single detailing and sampling effort ranges from $100 to $250, and with each pharmaceutical sales rep typically scheduling at least five physician meetings per workday, the costs quickly add up to become the biggest investment companies make to market their drug (Yi and Kim, 2016). Furthermore, the pharmaceutical firms should allocate their marketing budget to promote the doctors' adoption of the new drug as a standard component of the treatment. For this reason, firms devote much of their resources to identifying the appropriate segment of physicians for detailing and analyzing the factors that influence physicians' decision to switch to a new drug. This approach aims to maximize detailing effectiveness while minimizing unnecessary expenditures.

The study's objectives are to examine the factors in three types and their relative influence on the physicians' prescription change to the new drug and to target the doctors who show a higher allocation of their prescription to the new drug. The study also aims to identify the most important type of factors for the prescription change. The paper describes national physician survey data, discusses an estimation model and hypotheses on how the factors in this data would be related to the prescription change to the new drug, and tests the hypotheses. It further shows the predicted percentage of prescription allocation to the new drug. Then the paper discusses the managerial implications for the pharmaceutical firms' detailing effort.

LITERATURE REVIEW

There is literature about the factors for the physicians' prescription behavior for the new drug. The first group of literature is about the effect of habit/inertia in prescription. Coscellli (2000) shows that there is significant evidence of habit in prescription choices. Janakiraman et al. (2008) also shows a significant physician persistence. Ito et al (2020) discusses the effect of inertia in prescription behavior.

The second group of literature is about the factors for prescription by physicians less affected by habit/inertia. The factors discussed in this literature are *product-related factors* and *non-product-related* factors. Richard and Van Horn (2004) discuss *product-related* factors. They show that the drug choice probabilities are driven by brand attributes and promotion to physicians. Dheeraj (2015) discusses the effect of pharmaceutical advertising. Srivastava and Bodkhe (2021) discuss the country-of-origin effect. Albarq and Suleiman (2021) argue that PR strategy shows profound impact on prescribing. Silveira (2023) shows product-related factors such as safety, efficacy, tried and tested, less drug interactions, good reviews of the drug, and less adverse effects. Camacho et al. (2011) discuss *non-product-related* factors. They show salience effect (some pieces of information about the patients are easier to retrieve from memory than others) triggered by the decision to switch a patient to an alternative treatment option slows down the adoption of new treatments. Pareek et al. (2019) discuss that patients' drug requests have a positive effect on physicians' prescription decisions. Silveira (2023) discusses non-product related factors such as sponsorship, medical rep's dedication, and sampling.

Existing literature generally examines two categories of factors: product-related and non–product-related. However, given the substantial marketing efforts and budgets allocated by pharmaceutical firms to ensure the success of new drug launches, a more nuanced understanding of the relative influence of specific factors is warranted. Such insight would be particularly valuable for pharmaceutical firms seeking to better understand physicians' decisions to change prescribing behavior in favor of a new drug. Accordingly, this study investigates a more granular set of determinants, including *product-related, patient-related, and physician-related factors*, thereby providing a deeper understanding of the decision-making processes underlying new drug prescriptions.

PHYSICIAN SURVEY DATA

A national online survey of physicians was conducted on February 15th through February 24th, 2024, about a new topical drug. The new topical drug introduced to the respondents was a prescription drug with a better efficacy and safety compared to the leading drug. The geographical locations of the physicians were evenly distributed across the country. Twenty-six percent of the physician responses were collected from the Northeast, twenty-eight percent from the South, thirty-one percent from Midwest, and fifteen percent from the West. The survey collected a total of 401 complete questionnaires. The name of the new drug and the specifics about the disease it could treat are kept confidential per our agreement with the physicians participating in this research.

The survey first measured the doctors' *individual differences* such as their specialty (family practice, internal medicine, urologist, other), type of practice (solo, small group, mid-size, large group, clinic, hospital), the total number of patients in a typical month, the number of years in practice post-residency, and the percentage of time spent on research. It then measured the *physician-related factors* that included their use of compounding drugs (1=Yes, 2=No), their attitude about the degree of unmet need in the treatment, the amount of benefit over the existing drugs, and being hesitant unless there is a dramatic improvement over existing treatment. These items were measured by a 7-point Likert scale: Strongly Disagree to Strongly Agree. They survey also measured the *patient-related factors* that included the patient's request for a specific therapy and the patient's low level of awareness and knowledge about their medical condition. These items were measured by a 7-point Likert scale: Strongly Disagree to Strongly Agree. The survey then explained the details about the new topical drug and measured the *product-related features with the new drug* such as patient's low copay, 5% skin site reaction, the new drug's hands-free mode of application, patients' quick improvement, and the absence of the new drug's scent. These were measured by the respondents' allocating a relative percentage for the importance in their prescription. The sum of their allocation should be 100%. Finally, the prescription change to the new drug was measured by allocating a relative percentage of prescription to the new drug among 13 treatments with the new drug's availability. The sum of the allocation should be 100%. For instance, if the percentage of prescriptions to the new drug is 0%, the doctors do not intend to change their prescription to the new drug. The survey data shows that 20.95% of the physicians did not intend to change their prescription to the new drug. If the percentage of prescriptions to the new drug is 100%, they intend to change their prescription to the new drug entirely. Survey data shows that 3.99% of the physicians intended to change their prescription to the new drug entirely.

EMPIRICAL ANALYSIS

The physician's prescription change to the new drug as an allocation of a percentage of prescription to the new drug is the dependent variable in the regression analysis.

Prescription Change to New Drug = α_0 + [α_1Specialty$_{(h)}$ + α_2Practice$_{(h)}$ + α_3PatVol$_{(h)}$ + α_4YrsPractice$_{(h)}$ + α_5TimeResearch$_{(h)}$]+ [α_6Compounding$_{(h)}$ + α_7UnmetNeed$_{(h)}$ + α_8Benefit$_{(h)}$ + α_9Hesitant$_{(h)}$] + [α_{10}PatReq$_{(h)}$ + α_{11}LowAware$_{(h)}$] + [α_{12}Copay$_{(h)}$ + α_{13}SkinReact$_{(h)}$ + α_{14}Mode$_{(h)}$ +

$\alpha_{15}Improve_{(h)} + \alpha_{16}NoScent_{(h)}] + \varepsilon_{(h)}, \ \varepsilon_{(h)} \sim N(0,1)$

(1)

where we assume that the prescription change to the new drug is related to the Control variables (that recognize the physicians' individual differences), Physician-related variables, Patient-related variables, and Product-related variables.

The *Control* variables for the doctors' individual differences include the physician's specialty (Specialty), the type of practice (Practice), total number of patients in a typical month (PatVol), the number of years in practice post-residency (YrsPractice), and the percentage of time spent on research (TimeResearch).

The *Physician-related* variables include their use of compounding drugs (Compounding), their attitude that there should be unmet need in the treatment (UnmetNeed), their attitude that the new drug should offer even a modest benefit over the existing drugs (Benefit) and being hesitant unless there is a dramatic improvement over existing treatment (Hesitant).

The *Patient-related* variables include the patient's request for a specific therapy (PatReq) and the patient's low level of awareness and knowledge about their medical condition (LowAware).

The *Product-related* variables include low patient copay (Copay), skin site reaction (SkinReact), the new drug's mode of application (Mode), patients' quick improvement (Improve), and the scent of the new drug's scent (NoScent).

Table 1 shows the measurements in the survey for the factors. The highly correlated variables (i.e., correlation coefficient larger than 0.75) are excluded to avoid multi-collinearity.

Table 1.

Independent Variables

Variables	Survey Measurement
Physician Characteristics	Specialty (1=Family Practice, 2=Internal Medicine, 3=Urology, 4=Other) Practice (1=Solo, 2=Small Group, 3=Mid-sized, 4=large Group, 5=Clinic, 6=Hospital) PatVol: Number of patients in a typical month YrsPractice: Number of years in practice post-residency TimeResearch: Percentage of time spent on research
Physician-related factors	Compounding: Use of compounding drugs (1=Yes, 2=No) UnmetNeed: There is an unmet need in the treatment (1=Strongly Disagree, 7 = Strongly Agree) Benefit: The new treatment should have even modest benefits (1=Strongly Disagree, 7 = Strongly Agree) Hesitant: Hesitant unless the new treatment provides a dramatic improvement. (1=Strongly Disagree, 7 = Strongly Agree)
Patient-related factors	PatReq: Patient requests specific therapy before doctor offers options LowAware: Patient less aware about the medical condition

Product-related factors	Copay: Patients pay low copay. SkinReact: There is an application site reaction 5%. Mode: The new drug has a hands-free mode of application. Improve: The new drug can improve the condition in a day for 50% of patients. NoScent: The new topical drug has no scent.

HYPOTHESES

It is important for pharmaceutical companies to encourage doctors to change to the new drug. Hence, understanding how the factors are related to the doctors' prescription change to the new drug would offer marketing implications for the pharmaceutical firms' detailing efforts. The hypotheses for the relationship are organized into three categories: physician-related factors, patient-related factors, and product-related factors.

Physician-related Factor

Hypothesis 5.1

The physicians who use compounding drugs tend to believe that the therapy would be more effective when the patients take a combination of drugs rather than a single drug. Then in the presence of a new drug that is claimed to be more effective, they would be more likely to include the new drug as part of the therapy.

Hypothesis 5.2

When the doctors think there is an unmet need for the treatment, they intend to change their prescription to the new drug. When physicians see there are needs unmet by the current drug they are using, they would want to know how the new drug works and hence would intend to prescribe the new drug. Lubloy (2014) observes that doctors are more inclined to try new drugs when patients exhibit poor health statuses, reflecting high unmet treatment needs.

Hypothesis 5.3

When doctors think the new drug should offer even modest benefit over what they already have, they intend to change their prescription to the new drug. Zhu et al. (2012) show that providing drug effectiveness cues can increase perceived product efficacy and hence may increase initial purchase. Chan et al. (2013) also finds that drug effectiveness positively impacts the prescription decision of a risk-averse physician.

Hypothesis 5.4

When doctors believe the new drug should provide a dramatic improvement over existing treatment, they would be hesitant to change their prescription to the new drug. Chan et al. (2013) finds that drug effectiveness positively impacts the prescription decision of a risk-averse physician, but when the physicians believe the new drug should provide a dramatic improvement, which is a very risk-averse case, they would be hesitant to prescribe the new drug.

Patient-related Factors

Hypothesis 5.5

When the patients request a specific therapy, the doctors would not change their prescription to the new drug. Coscelli (2000) shows that the patient's habit, i.e., preference for an old drug, contributes to the doctor's persistence. Pareek et al. (2019) also show that patients' drug requests have a significant effect on physicians' prescription decisions and patients can be consistent with physicians in choosing a drug. Hence, when the patients prefer a drug a priori, the doctors would not change their prescription to the new drug.

Hypothesis 5.6

On the other hand, when the patients are less aware and less informed about their medical condition, doctors would change their prescription to the new drug. This is the opposite situation to the prior hypothesis. Ciardiello (2016) observes that patients with limited understanding of their medical condition tend to rely entirely on their doctors to make significant treatment decisions. Consequently, the level of trust they place in their doctor is inversely proportional to their understanding of their condition.

Product-related Factors

Hypothesis 5.7

When the patients can pay low copay for the new drug, the physicians would change their prescription to the new drug. Hoadley (2012) showed that a low copayment for generic statin is the strongest factor influencing the use of the drugs.

Hypothesis 5.8

When the new drug has a low (5%) skin reaction, the physicians would change their prescription to the new drug. Bostock-Cox (2019) shows evidence that appropriate deprescribing is recommended to reduce drug interactions and adverse drug reactions (ADR) and to improve holistic wellbeing of patients. Ross (2021) also shows a meta-analysis of adverse drug reactions and recommends options of stopping drug therapy, using an alternative drug, or altering the dose.

Hypothesis 5.9

When the new drug has a good mode of application, i.e., hand-free application, the physicians would intend to change their prescription to the new drug. In this research, hands-free applications are suggested as a solution to bridge the gap in unmet treatment needs. Consequently, physicians are more inclined to change their prescription to the new drug when its delivery method is innovative or technologically advanced, especially if such innovations address previously unmet treatment needs (Lubloy, 2014).

Hypothesis 5.10

When the new drug shows a quick improvement, the physicians would change their prescription to the new drug. Chintagunta et al. (2012) find that doctors hasten drug adoption when they are informed about the efficacy of the new drug. Hence, when doctors see that their patients could get better quickly, they would intend to try the new drug.

Hypothesis 5.11

When the new drug has no scent in a new drug, the physicians may not be inclined to change their prescription to the new drug. Chandler (2013) emphasizes the critical role of a pleasant scent in topical drugs, noting its significant impact on patient compliance and satisfaction. The absence of such sensory attributes may adversely affect both patients' and physicians' willingness to try the new product.

ESTIMATION RESULTS

The estimation results tell interesting stories about the physician's prescription change to the new drug and help the pharmaceutical companies to understand the doctors. The positive and significant slope coefficient implies that the doctors intend to change their prescription to the new drug.

Table 2.

Estimation Result

	Estimate	Std Err
Control Variables		
Specialty	- 0.7730	1.8812
Practice	- 0.9662	1.2928
Patient Vol in a Typical Month	0.0118	0.0131
Years of Practice	-0.5073*	0.2429
Percentage of Time for Research	-0.2944	0.3462
Physician-related Variables		
Compounding Drugs	4.6282*	1.3079
Unmet Needs	0.6649	1.0735
Benefit	0.4044	1.4272
Hesitant	- 0.3141	0.9730
Patient-related Variables		
Patient Request	- 0.7822	1.2728
Low Awareness	1.2788*	0.5695
Product-related Variables		
Patient Low Copay	0.2709*	0.1176
Skin Site Reaction	0.0867	0.1841
Hands-free Mode of Application	0.3074*	0.1240
Quick Improvement	0.0567	0.1436
No Scent	- 0.3061*	0.0723

Note: (*) denotes $P < 0.05$.

The *Control* variables are included merely to control the effect of the physician's individual differences and isolate the effect of other more important variables. Although it would not be meaningful to interpret these control variables, YrsPractice variable is significantly negatively related to the physician's change to the new drug. Doctors who have longer years of practice post-residency are shown to be reluctant to change their prescription to the new drug.

Regarding the *Physician-related* variables, Compound variable is significantly positively related to the prescription change to the new drug. This result supports Hypothesis 5.1. When the doctors usually use compounding drugs, which is a combination of treatments, they intend to change their prescription to the new drug. Since they are open to using different treatments and they may be open to using the new drug as well. UnmetNeed variable is not significantly related to the prescription change. This result does not support Hypothesis 5.2. Benefit variable is not significantly related to the prescription change. This result does not support Hypothesis 5.3. Hesitant variable is not significantly related to the prescription change. This result does not support Hypothesis 5.4.

Regarding *Patient-related* variables, PatReq variable is not significantly related to the prescription change. This result does not support Hypothesis 5.5. LowAware variable is significantly positively related to the physician's prescription change to the new drug. This result supports Hypothesis 5.6. When the patients have limited awareness and knowledge about their medical condition, they tend to rely on their doctors and hence the doctors may change their prescription to the new drug.

Regarding *Product-related* variables, Copay variable is significantly positively related to the prescription change. This result supports Hypothesis 5.7. When the patients can pay low copay, doctors may feel comfortable and change their prescription to the new drug. SkinReact variable is not significantly related to the prescription change. This result does not support Hypothesis 5.8. Mode variable is significantly positively related to the physician's change to the new drug. This result supports Hypothesis 5.9. When the new drug has a good mode of application, i.e., hands-free application, the doctors would think it would be better for the patients so they may change their prescription to the new drug. Improve variable is not significantly related to the prescription change. This result does not support Hypothesis 5.10. NoScent variable is significantly negatively related to the physician's prescription change to the new drug. This result supports Hypothesis 5.11. When the new drug has no scent, the doctors may think their patients might not like it so they would be reluctant to change their prescription to the new drug.

In summary, examining the three types of factors would help the pharmaceutical firms better understand the doctors' characteristics. Doctors with longer experience are shown to be reluctant to change their prescription to the new drug. Physicians who usually prescribe a combination of drugs may change their prescription to the new drug. When the patients have limited awareness and knowledge about their medical condition, the doctors may change their prescription to the new drug. When the patients can pay low copay, doctors may change their prescription to the new drug. When the new drug has a good mode of application, i.e., hands-free application, doctors may change their prescription to the new drug. When the new drug has a good scent, the doctors intend to change their prescription to the new drug.

FORECASTING AND MANAGERIAL IMPLICATIONS

Increasing the chance that physicians change their prescription to new drug is critical for the success of the new drug launch. As Srivastava and Bodkhe (2018) recommend in their study, there is a strong need for pharmaceutical firms to continue to find ways to be more effective with their marketing investment while curbing unnecessary and unwanted

expenditures to stay competitive. The results of the current study can be utilized to help firms fill these gaps.

The estimation results of our empirical analysis provide important insights into correctly identifying physicians who are likely to change their prescription to the new drug. For the *Control* variables, doctors with longer experience are shown to be reluctant to change their prescription to the new drug. The pharmaceutical salespeople can get data about relatively younger doctors from the staff at practice and contact these doctors. For *Physician-related* variables, physicians who usually prescribe a combination of drugs may change their prescription to the new drug. The pharmaceutical salespeople can obtain this data in conversations with the doctors and contact the doctors who prefer a combination of drugs. For *Patient-related* variables, when the patients have limited awareness and knowledge about their medical condition, the doctors may change their prescription to the new drug. The pharmaceutical salespeople can get this patient information in meetings with the doctors and contact these doctors with these patients. For *Product-related* variables, when the patients can pay low copay, the new drug has a good mode of application, i.e., hands-free application, and when the new drug has a good scent, the doctors intend to change their prescription to the new drug. The pharmaceutical salespeople can obtain this data from conversations with the doctors and contact these doctors.

Table 3

Prediction Result

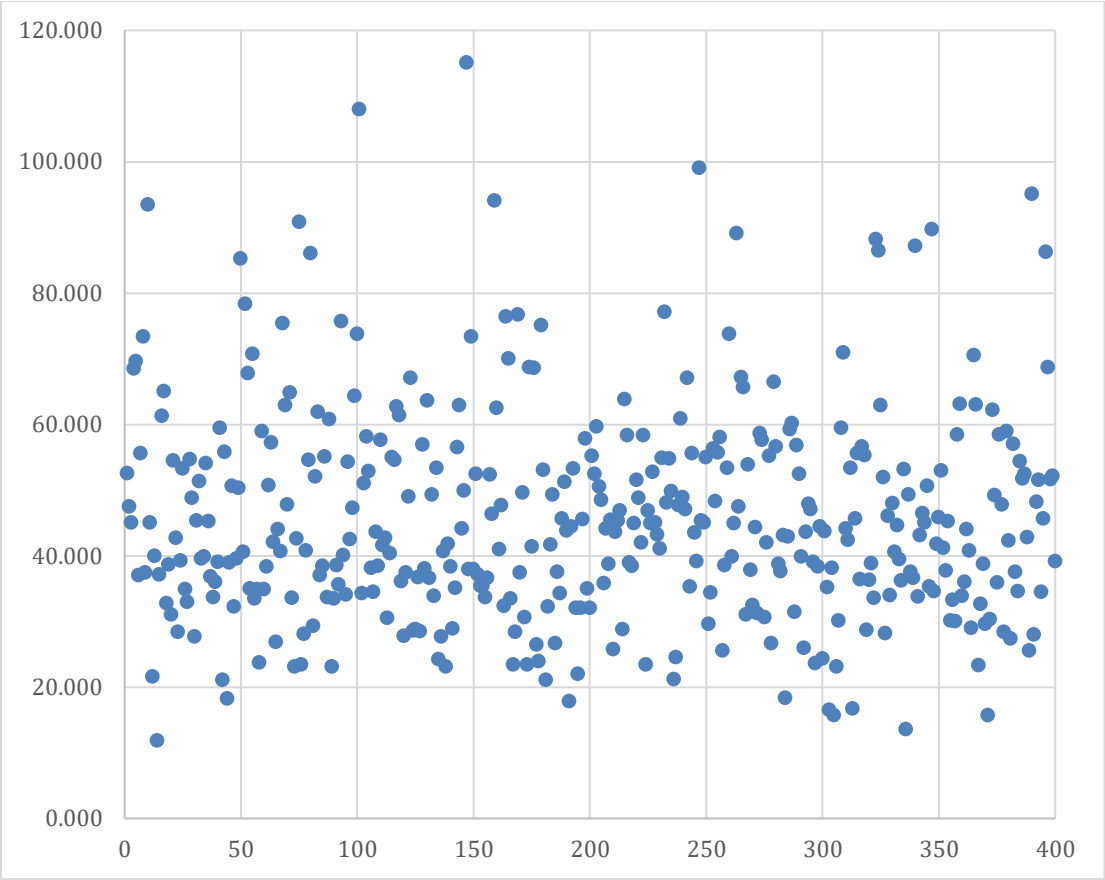
Prescription Change (Allocation to New Drug)	Average Allocation	Percentage of Physicians
Higher than 100%	111.46%	0.50%
Higher than 75%	87.60%	5.49%
Higher than 50%	63.19%	33.92%

Pharmaceutical firms can also be more effective with their resources by targeting individual physicians who show a higher allocation of their prescription to the new drug. How much the doctors intend to prescribe the new drug can be computed using the results of our empirical analysis. For illustration, the current data has been used for the prediction. Table 3 shows the predicted percentage of allocation to the new drug. The percentage of physicians who are predicted to allocate their prescription to the new drug higher than 100% is 0.50%, with a very high average allocation of 111.46%. Although the sum of allocation among thirteen drugs should be 100%, the predicted allocation can be higher than 100%. The percentage of physicians who are predicted to allocate their prescription to the new drug higher than 75% is 5.49%, with an average allocation of 87.60%. The percentage of physicians who are predicted to allocate their prescription to the new drug higher than 50% is 33.92%, with an average allocation of 63.19%. The distribution of predicted allocation to the new drug is further shown as a scatter plot in Figure 1. These prediction results show that the pharmaceutical companies are recommended to use this forecasting method and to focus

their marketing effort on the doctors who are predicted to change to the new drug by allocating their prescription higher than 50%, which is predicted to be 33.92% of the doctors.

Figure 1

Predicted Percentage of Allocation to New Drug



CONCLUSION

The literature on the physicians' prescription change to the new drug investigates the product-related and patient-related factors for their prescription change to the drug, but prior research rarely studies the factors for the new drug prescription in three ways. This study fills the gap in literature by examining the factors that are related to the physician's prescription change to the new drug by investigating physician-related factors, patient-related factors, and product-related factors. Understanding these three aspects of the factors would help the pharmaceutical firms better understand the physicians' prescription behavior. The results offer interesting insights into the physicians' prescription and provide managerial implications for pharmaceutical firms about their detailing effort. The study further provides predicted percentage allocation to the new drug by individual doctors for targeting individual doctors.

The study has several limitations, all of which provide avenues for future research. A future study with a new data set can include the physicians' prescription behavior. The

current study is also limited to one type of drug, but a future study can be applied to other drugs.

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TRUSTING THE MACHINE: COMPETENCE AND BRAND REPUTATION AS DRIVERS IN AUTOMOTIVE CHATBOTS

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ABSTRACT

Conversational artificial intelligence (AI) is transforming customer-facing digital services, yet trust remains a critical barrier to adoption, especially in high-involvement industries like automotive retail. This study proposes a conceptual model examining how perceived chatbot competence influences consumer trust and explores how reputable brands strengthen this relationship. Drawing on Signaling Theory and Trust Theory, competence is positioned as a key cognitive cue consumers use to evaluate reliability and reduce uncertainty in AI interactions. Brand reputation is theorized to function as a moderating context that amplifies competence-based trust formation. The proposed model offers implications for strategic design and governance of conversational AI.

INTRODUCTION

In today's competitive environment, the ability to leverage emerging technologies strategically determines which organizations lead, adapt, and create sustained value. Artificial Intelligence (AI) remains one of the most disruptive forces transforming how organizations compete, innovate, and evolve across industries. Conversational AI technologies span a diverse range of products and functions. The purpose of this study is to focus on one of the most rapidly adopted technologies impacting the automotive industry: chatbots. The emphasis on chatbots is warranted because automotive retail has become one of the fastest-growing industries for AI-driven customer interaction tools. Recent industry reports show that more than 80% of US dealers believe AI will be essential to future operations, and 52% have already implemented automated chat or messaging technologies to support customer engagement (Cox Automotive, 2025). The adoption of conversational AI represents a strategic inflection point for many industries, including digital services in the automotive space. Automotive retailers and manufacturers depend heavily on digital platforms to manage customer engagement, from lead generation to after-sales support (DealerStudio, 2025).

While trust in automotive brands is formed across multiple touchpoints, this study focuses on chatbot interactions as a critical micro-moment within the broader customer journey. The increasing integration of conversational AI within customer-facing systems raises questions about how customers evaluate and trust these digital interactions. In the automotive retail industry, chatbot competence is particularly valuable. This study aims to investigate how perceived chatbot competence influences customer trust in automotive digital interactions and to explore how reputable brand associations can enhance this relationship. Because automotive retail involves high-involvement purchases and brand-

driven loyalty, the automotive industry provides a particularly salient context for understanding how competence and brand reputation combined shape trust in conversational AI.

LITERATURE REVIEW

The literature on chatbot trust highlights several themes ranging from perceived competence to brand reputation. These sections collectively provide insight into current scholarly studies that show how users shape their perceptions of AI and help us understand consumer behavior.

Consumer Trust

Among the various drivers of chatbot acceptance, competence-based trust consistently emerges as the dominant factor in shaping user adoption and continued engagement. Recent studies have shown that consumer trust in chatbots is shaped by both cognitive and social perceptions, mainly those related to competence, warmth, and social presence. Deng and Yan (2025) found that perceived competence has the strongest influence on trust and that this perception mediates the relationship between these perceptions and user engagement. Ultimately, confirming trust plays a central role in digital customer interactions. This emphasis on competence aligns with Huang et al. (2024), who also differentiate between competence-based and integrity-based trust and find that competence more strongly predicts behavioral intention. These findings are particularly relevant in automotive retail because the process of buying a car or using a scheduling tool is transactional rather than relational. Consumers use a chatbot to find answers or solutions to problems they face. Their research suggests that confidence in the technology is crucial for continued chatbot use, as the tool is designed to solve customer problems.

In broader digital service research, Kim et al. (2008) show that competence cues and positive reputation simultaneously strengthen trust and reduce perceived risk, shaping willingness to engage with online systems. Their longitudinal follow-up (Kim, et al., 2009) further confirms that trust not only predicts initial adoptions but also supports satisfaction and long-term loyalty, highlighting why competence-driven trust remains essential for sustained engagement with technology-based service channels. This is particularly relevant for the interactions consumers have with chatbots used by service providers in the automotive industry. When customers have a positive interaction with a specific chatbot, they may see the tool as trustworthy and capable of solving the problems that they had. The studies suggest that these interactions will strengthen the relationship and the customer's willingness to use the same tools again.

Additional research builds on this foundation and finds that social cues (greetings, emojis, and humanlike phrasing) enhance perceptions of warmth and competence, which ultimately will foster both cognitive and affective trust (Yan et al., 2025). Yen and Chiang (2021) research highlights that chatbot credibility, competence, anthropomorphism (humanlike characteristics), and social presence will activate neurological mechanisms associated with social cognition and trust formation. Even though research shows that friendliness and warmth enhance connection, users will still base their ultimate trust on the chatbot's actual functionality and task performance (Ltifi, 2023).

Perceived Competence

Perceived Competence represents the user's point of view of the chatbot's functionality, reliability, and professionalism. This belief serves as the baseline upon which consumers judge whether the chatbot is reliable enough to handle meaningful service interactions. Across service and technology adoption studies, competence is consistently positioned as the most critical determinant of customers' acceptance and continued use of chatbots (Kim & Hur, 2024; Li et al., 2023). These findings reinforce why competence is treated as a primary evaluation criteria in chatbot interactions.

Empirical studies across industries confirm that competence drives satisfaction, trust, and continued engagement. Gao et al. (2025) found that chatbot problem-solving performance enhances user satisfaction and trust, highlighting competence as a foundational aspect. This focuses on task execution, aligning with Cai et al. (2024), who found that competence in communication style mitigates dissatisfaction during service failures. Adding a theoretical dimension, Kim and Hur (2024) conceptualize competence as the first cognitive step in the AIDUA sequence, mediating the effects of anthropomorphism (humanlike characteristics) and personalization on empathy and willingness to adopt AI chatbots. Further supporting the central role of competence, Li et al. (2023) found that, when coupled with warmth, competence enhances perceived usefulness and long-term engagement with AI. Overall, consumers feel more confident in technology when it can accurately respond to and resolve issues.

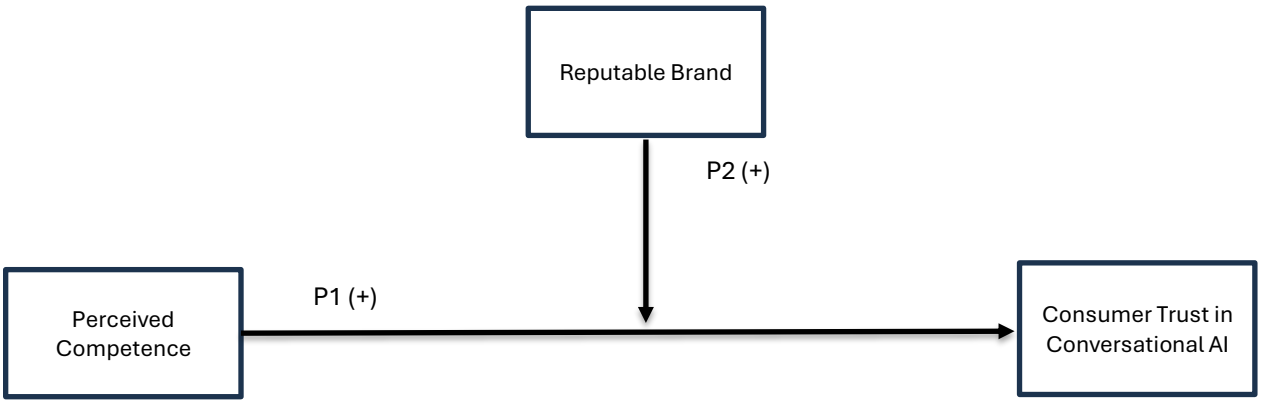
Brand Reputation

Brand Reputation serves as a boundary condition in how consumers evaluate chatbot competence and trustworthiness. Because consumers hold different expectations for high-status, mainstream, and underdog brands, the same chatbot behavior can be interpreted in meaningfully different ways. Research shows that consumers interpret chatbot behavior through the lens of brand expectations. Cheng and Toung's (2024) study examines the alignment between a brand's positioning and the chatbot's conversational style, which influences the brand's attitudes. Competent, professional chatbots enhance trust for high-status brands, but warmth and approachability are more effective for underdog brands. This emphasis on alignment is further supported by Lin (2025), who finds that chatbot interactivity and anthropomorphic design strengthen brand relationship quality, which reinforces consumer trust and behavioral intentions. This indicates that brand expectations serve as the primary mechanism through which competence cues translate into trust. These findings suggest that when a brand carries an established reputation for expertise or excellence, competence cues from its chatbot are perceived as consistent and credible, ultimately confirming their impact on trust. On the other hand, when a chatbot's tone or capability conflicts with the brand identity, trust is weakened. This dynamic becomes even more pronounced in luxury contexts. Luxury brand research reinforces this moderating dynamic. Li and Shin's (2023) study reveals that design inconsistencies, like the use of emoticons by luxury brands, can dilute prestige and appropriateness, essentially undermining customer trust. This reinforces that when chatbot tone or visual cues contradict brand expectations, the resulting inconsistency damages credibility regardless of the chatbot's competence.

RESEARCH MODEL & PROPOSITION DEVELOPMENT

Figure 1

Conceptual Model. Controls include brand familiarity, prior chatbot interactions and primary task type.



This study proposes a conceptual model (Figure 1) to explain how perceived competence influences consumer trust in automotive chatbot interactions and how brand reputation strengthens the relationship. While the Resource-Based View (RBV) and Dynamic Capabilities explain why chatbot competence matters strategically at the firm level, the proposed hypotheses are grounded in individual-level trust formation, drawing on trust transfer and signaling theories. This model integrates strategic management theories and trust-based frameworks to argue that competence functions as both a strategic resource for organizations and a cognitive signal for consumers evaluating AI-driven services.

Strategic Foundation: Why Competence Matters (RBV and Dynamic Capabilities)

From a strategic perspective, conversational AI represents more than a technical tool; it can serve as a strategically valuable digital resource that enhances customer experience and operational efficiency. According to the Resource-Based View (RBV), organizations gain a competitive advantage through resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). When a chatbot consistently delivers accurate, reliable, and contextually relevant information, its competence becomes an intangible digital resource that not all organizations can replicate, because it requires advanced models, specialized training data, and brand-specific tuning. Competence then contributes to differentiated service quality in digital environments.

Dynamic Capabilities Theory expands this logic and complements RBV by emphasizing the organization's ability to sense, seize, and reconfigure resources in rapidly changing environments (Teece, 2009). Competent chatbots require ongoing learning, ongoing maintenance, and integration across service systems. In this context, competence serves as a micro foundation of an organization's dynamic digital service capability, influencing trust by demonstrating stability, intelligence, and responsiveness in customer interactions.

Psychological Foundation: Why Trust is the Key Outcome

Strategic theories (RBV and DC) explain why competence matters to the organization, while trust theories explain why it matters to customers. Mayer et al. (1995) identify ability (competence), benevolence, and integrity as core components of trust, with ability being crucial in technology interactions where users depend on performance cues to overcome uncertainty. McKnight et al. (2002) further argue that customers rely on "initial trust" when interacting with unfamiliar digital systems, forming expectations based on perceived predictability, reliability, and performance. In chatbot interactions, competence serves as the primary cognitive cue that reduces uncertainty and communicates that the system can interpret needs and complete tasks effectively.

Signaling Perspective on Competence Cues

In addition to trust theory, signaling theory provides a useful lens for understanding how consumers evaluate chatbot interactions under conditions of uncertainty (Connelly et al., 2011; Spence, 1973). In digital service environments, consumers cannot directly observe a chatbot's underlying technical capabilities or data quality and must instead rely on observable performance cues to infer reliability and trustworthiness (Kirmani & Rao, 2000). From a signaling perspective, perceived chatbot competence manifests through accuracy, clarity, and effective task resolution. It functions as a quality signal that reduces information asymmetry and perceived risk (Connelly et al., 2011). Consistent with prior research in technology-mediated interactions, competence-based signals are particularly influential when interactions are brief and outcome-oriented, as is often the case with automotive chatbots. In this context, brand reputation may shape how competence signals are interpreted by establishing prior expectations that either amplify or weaken their impact on trust formation (Kirmani & Rao, 2000).

Proposition 1: Perceived competence of chatbots positively influences customer trust. Consistent with trust and signaling theories, perceived chatbot competence serves as a key evaluative cue that consumers use to infer reliability and reduce uncertainty in AI-mediated service interactions. Across AI, service, and trust research, competence consistently emerges as the strongest predictor of user engagement and willingness to continue interacting with chatbot systems. When a chatbot signals accuracy, clarity, and professionalism, customers experience reduced risk and greater confidence in both the technology and the organization that uses it. Therefore, high perceived competence is expected to increase customer trust in automotive chatbots.

Brand Reputation as a Moderator (Trust Theory)

Brand reputation in this study refers to the overall reputation of the automotive OEM rather than the individual dealership or dealer group. Although competence directly influences trust, the strength of the relationship depends on the contextual cues surrounding it, particularly the brand's reputation behind the chatbot. Trust Transfer Theory (Stewart, 2003) suggests that trust in one entity (the brand) can be transferred to another associated entity (the chatbot). Reputable automotive brands possess credibility, reliability, and service expectations that can shape how consumers interpret even a short chatbot interaction.

When consumers engage with a chatbot associated with a strong brand, they are more likely to interpret competence cues favorably, attribute errors more leniently, and assume it has higher capabilities. However, when a chatbot represents a lesser-known brand, it may lead consumers to scrutinize competence cues more critically, slowing or weakening trust formation. In this case, brand reputation will act as an interpretive frame that enhances or diminishes the perceived impact of competence.

Proposition 2: The positive relationship between perceived competence and consumer trust is stronger when the chatbot is associated with a reputable brand. A reputable brand provides a credibility-enhancing context that makes competence cues feel more consistent with expectations of quality and reliability. Therefore, brand reputation is expected to strengthen the effect of competence on trust; however, when the brand is less well-known, it may require stronger or repeated competence cues to achieve the same level of trust.

METHODOLOGY

This study will use a quantitative, cross-sectional survey design to examine the relationships proposed in the conceptual model (Figure 1). The purpose of this design is to test the direct effect of perceived chatbot competence on consumer trust and the moderating role of brand reputation in automotive digital service interactions. A quantitative approach is appropriate because it enables statistical testing and the use of validated scales.

Participants and Sample

Data will be collected from automotive consumers in the United States who have interacted with a chatbot on an automotive retail or OEM website within the last six months. The target sample size will be around 250-300 participants. Participants will be adults (18 years and older) recruited via an online survey platform, such as Qualtrics, using screening questions to verify their prior experience with chatbots in automotive retail settings.

Data Collection

Participants will receive a brief informational statement and a consent form outlining the study's purpose, its voluntary nature, and the assurances of confidentiality. Upon consent, participants will complete a 10-15-minute survey. Demographic data, including age, gender, education, income level, and brand familiarity, will be collected to facilitate descriptive statistics and control analysis. No personal identifying information will be collected.

Measures

All constructs will be measured using multi-item Likert-type scales adapted from validated instruments. All constructs have been widely validated in technology and service contexts and demonstrate strong reliability. Perceived Competence will be assessed using items from McKnight et al. (2002) that reflect the chatbot's ability, knowledge, and accuracy. Customer Trust will be measured using items adapted from prior digital trust research (McKnight et al., 2002; Kim et al., 2008) to capture cognitive trust and confidence in the

chatbot. Brand Reputation will be measured using items from the reputation scale developed by Walsh and Beatty (2007), to assess customers' perceptions of brand capability, quality, and trustworthiness.

Data Analysis

All analyses will be conducted using SPSS software. First, screen the data and examine missing values, outliers, and normality. Second, descriptive statistics will be used to observe and understand trends in the data. Next, assess reliability using Cronbach's Alpha. In addition to Cronbach's Alpha, Composite Reliability (CR), and average variance extracted (AVE), construct reliability and validity will be assessed, and common method variance will be evaluated using established procedural and statistical checks. To test the P1, direct effect, a simple linear regression will be used to test the impact of perceived competence and consumer trust. To test P2, the moderation effect, a hierarchical multiple regression will be used to test the interaction between perceived competence and brand reputation on trust. Brand familiarity, prior chatbot interactions, and primary task type (sales, service, scheduling) will be included as control variables in all regression analyses, as these factors may independently influence trust perceptions in digital service interactions.

Ethical Considerations

Participation will be voluntary, and informed consent will be obtained prior to any data collection. Responses will remain anonymous, and no identifying information will be collected. Data will be securely stored and used only for academic purposes. All procedures will have prior IRB approval.

In addition to standard ethical safeguards, this study acknowledges that all data will be securely stored in accordance with institutional guidelines and retained only for academic research purposes. The study does not use proprietary brand logos in the survey instrument; future experimental extensions may employ fictitious brands with appropriate debriefing to minimize brand bias. All procedures will comply with IRB requirements and best practices for participant privacy and data governance.

IMPLICATIONS

This study contributes to emerging literature on AI-enabled customer trust by positioning perceived competence as a foundational mechanism through which customers evaluate and accept conversational AI. While prior research highlights multiple types of trust drivers, like warmth, social cues, and anthropomorphism, this study will contribute to the growing body of research suggesting that competence will outweigh social attributes in predicting continued use and adoption. By demonstrating that brand reputation is a condition of the competence-trust relationship, this study will also extend trust transfer theory and show how macro-level brand assets interact with micro-level AI design features to shape the formation of customer trust.

From a practical perspective, this study will provide insights into why chatbots serve as an extension of brand identity and why they should be designed with the same care as a human-facing role. Organizations looking to develop or enhance their Chatbot technology should prioritize features that improve accuracy, relevance, and contextual responsiveness.

Competence cues drive customer trust more powerfully than humanlike characteristics alone. Additionally, automotive brands, whose reputations carry significant weight in consumer decision-making, must ensure strong alignment between the chatbot's tone, behavior, and brand identity. Automotive organizations (OEMs or dealerships) should routinely evaluate chatbot performance, train models to maintain brand-consistent communication, and pair AI implementations with operational oversight to protect and enhance customer trust. Ultimately, strategically managed chatbots create scalable, high-quality touchpoints that reinforce brand equity.

LIMITATIONS

Although this study will offer meaningful insights, several limitations should be acknowledged when interpreting its findings. First, the cross-sectional research design limits the ability to infer causality between perceived competence and trust. Second, the data will rely on self-reported measures, which may introduce common-method bias or recall error, potentially inflating perceptions of prior chatbot experiences. Third, focusing exclusively on the automotive retail context limits generalizability to broader customer service industries, where drivers of trust may differ. Fourth, the study focuses on competence and brand reputation but does not account for other important factors, like privacy concerns, emotional intelligence, or hybrid situations involving a human-AI handoff. Lastly, the use of a single survey method prevents deeper exploration of evolving trust perceptions over time or across varied digital service contexts.

FUTURE RESEARCH

Future research can build on this proposed study in several meaningful ways. Experimental or longitudinal designs to understand causality better and track the development of trust in conversational AI over time. Comparative studies across industries or countries could clarify if competence remains the dominant trust driver in contexts with different service expectations or cultural norms. Researchers can also explore how other variables, such as emotional intelligence, empathy, and adaptive AI conversational styles, shape trust beyond competence alone. Additional research opportunities include exploring trust formation in international or multicultural contexts, where brand meaning and technology expectations may differ. This study conceptualizes competence at the interaction level rather than the level of underlying foundation models, focusing on user-perceived outcomes rather than technical architecture, so additional research on the tools that power chatbots is another area to explore. These extensions would provide a richer understanding of trust formation in conversational AI systems and help refine chatbot strategies across diverse digital environments.

CONCLUSION

Conversational AI is rapidly reshaping customer engagement across industries but nowhere is its strategic relevance more apparent than in automotive retail digital services. As automotive retailers and manufacturers increasingly rely on digital tools to support customer

interactions, understanding how trust is formed in conversational AI becomes a strategic priority rather than a technical concern. This study proposes that perceived competence is the most influential driver of consumer trust in chatbot interactions. When customers believe that AI can understand their needs, provide accurate information, and respond effectively, they are more willing to rely on technology in contexts traditionally dominated by human expertise and service expectations.

This proposed study also highlights the critical role of brand reputation in shaping consumers' interpretation of chatbot performance. Trust-transfer principles suggest that when a chatbot represents a reputable automotive brand, customers may attribute greater credibility to the technology and interpret competence cues more favorably. On the other hand, interactions with a lesser-known brand may be subject to closer scrutiny, which could reduce trust in the chatbot. By positioning brand reputation as a moderator, this study aims to show how the combination of organizational assets and technological design can influence trust formation.

Overall, this study will contribute to the ongoing conversations about the strategic integration of AI in customer-facing environments by framing chatbot competence as a micro-foundation of digital trust and a source of competitive advantage. While the empirical study has yet to be conducted, establishing this theoretical model sets the stage for future testing. It provides a clear roadmap for examining how competence and brand reputation interact to influence consumer trust. As AI continues to reshape service delivery in the automotive industry, the insights from this proposed research could inform academic understanding and managerial decision-making regarding the design, governance, and deployment of conversational AI systems.

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WHEN GENERATIVE AI HELPS HUMANS WRITE: HOW GAI INVOLVEMENT IN WRITING REVIEWS WEAKENS CONSUMER RESPONSES

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ABSTRACT

Research has examined how brands and companies employ generative artificial intelligence (GAI) to produce marketing content, yet limited attention has been devoted to understanding how the use of GAI affects content generated by users. This study addresses this gap by investigating how perceived GAI involvement shapes evaluative attitudes toward online consumer reviews. Using an online experiment, participants evaluated a review written either entirely by a human or by a human with GAI assistance. Results showed that when participants believed the content was authored by a user with the assistance of GAI, they perceived the review as less trustworthy and expressed less favorable attitudes toward the content. Mediation analyses revealed that trust toward the content functioned as a key mechanism influencing attitude, both directly and indirectly through perceived usefulness. These findings advance current discussions on algorithmic involvement in online communication and offer practical insights for digital platforms that host GAI-assisted consumer text.

INTRODUCTION

The growing diffusion of GAI has profoundly transformed the way digital content is produced and consumed. Text generators such as ChatGPT, Gemini, and Claude are increasingly being used to craft posts, reviews, and other forms of online communication (Annepaka & Pakray, 2025). This technological shift has attracted considerable academic and managerial attention, as companies employ GAI to automate marketing communication (Gupta et al., 2024). Although research has begun to document both the benefits and the risks of GAI-generated brand communication (e.g. De Cicco et al., 2025b; Kirk & Givi, 2025), far less is known about how audiences respond when ordinary users – rather than firms – rely on GAI tools to create content for other users.

Among the various forms of content created by users, generally defined as user-generated content (UGC), online consumer reviews play a central role in shaping consumer decisions in online environments. This type of content is typically perceived as more authentic and trustworthy than corporate messages because it originates from fellow consumers (Filieri, 2016). However, as with firm-generated content – where the integration of GAI can disrupt cues of authenticity and trustworthiness (Kirk & Givi, 2025) – a similar effect may emerge for content created by other users. When readers realize that a review is written

with GAI assistance, they may question the genuineness, effort, or personal experience behind the message, potentially undermining its persuasive power.

Prior literature on GAI-assisted communication has largely focused on brand-generated content, investigating how GAI authorship influences attitudes toward advertisements, social media posts, and more generally, corporate messages (Baek et al., 2024). These studies highlight the 'AI-authorship effect' (Kirk & Givi, 2025), suggesting that transparency regarding GAI involvement may enhance perceived quality but often diminishes authenticity and trust. However, little empirical evidence exists on whether similar mechanisms operate when the content creator is an ordinary consumer (Knight et al., 2023). The psychological contract underlying peer-to-peer communication differs fundamentally from brand-to-consumer interactions. While GAI in corporate messaging is often evaluated through the lens of efficiency or service quality, in peer recommendations, particularly online consumer reviews, it directly challenges the "experiential authenticity" that is the hallmark of user-generated content.

The present study addresses this gap by examining how perceived GAI involvement in the creation of content generated by users affects consumer perceptions of trust, perceived usefulness, and attitude toward the content. The research aims at isolating the psychological processes triggered by knowing that GAI contributed to message generation. The study investigates whether the potential negative effect of GAI usage on attitude toward the content is explained by reduced trust and perceived usefulness of the content, highlighting the cognitive and affective mechanisms that underlie users' evaluations of GAI-assisted consumer reviews.

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

The increasing adoption of GAI in online communication is reshaping how people produce and evaluate digital content, especially in domains such as online consumer reviews where readers have traditionally interpreted peer messages as spontaneous, experience-based accounts. Within this setting, GAI assistance can involve brainstorming, drafting, revising, and even producing entire compositions, thus shifting the human author's role from creator to editor or supervisor (Hutson, 2025). Once viewed as the expression of personal experience and authenticity, online peer reviews are now often the product of collaboration between humans and intelligent systems (Niu et al., 2025). This evolution has blurred the boundaries between human and algorithmic authorship and raised new questions about how audiences perceive messages when they know that GAI has contributed to their creation. While GAI excels at crafting sophisticated content and refining linguistic accuracy with remarkable efficiency, it may simultaneously weaken the social and psychological cues that underpin the credibility of online peer reviews (Knight et al., 2023). Understanding these dynamics requires a theoretical foundation capable of explaining how perceptions of authenticity and trust shape evaluations of message persuasiveness.

The Source Credibility Theory (Hovland & Weiss, 1951) offers a useful framework for examining this phenomenon. It posits that the persuasiveness of a message depends on how audiences perceive the credibility of its source, which is typically defined through three dimensions: trustworthiness, competence, and goodwill (Touré-Tillery & McGill, 2015). When communication occurs among peers rather than between organizations and

consumers, the dimension of trustworthiness becomes the central determinant of message impact (Filieri, 2016). When the content is generated by users, the "source" is not a professional expert but an ordinary consumer whose value as an information provider stems from perceived sincerity, authenticity, and personal experience (Singh & Pandey, 2024). Readers interpret these qualities as indicators that the message reflects genuine opinions. The introduction of GAI into this process modifies the interpretive framework through which readers assess such cues. When content is disclosed as written with GAI assistance, it is no longer perceived as the spontaneous expression of a personal experience but as the result of human–machine collaboration (Knight et al., 2023). This information may trigger cognitive shortcuts through which people infer that algorithmic involvement implies a lack of humanness perception and empathy (Jia et al., 2024). While this perception can sometimes increase the perceived objectivity or professionalism of corporate communication (Chaisatitkul et al., 2024), in peer-to-peer contexts it may tend to erode engagement and trust (Hua et al., 2024). Users' reviews are valued because they are expected to be personal, idiosyncratic, and grounded in direct experience. GAI involvement may prompt users to question the authorship and authenticity of the expressed opinions.

To understand how GAI involvement influences the reception of a review, it is necessary to examine the psychological dimensions that shape this evaluation. The shift from a purely human-authored review to one assisted by GAI may alter the perceived credibility of the message and trigger a re-assessment of its core characteristics. This study focuses on trust, perceived usefulness, and attitude toward the content as the fundamental variables that define how readers respond to peers' reviews. These constructs are widely established as the primary metrics for evaluating user-provided information, as they reflect the cognitive and affective processes through which individuals determine the value of a message (Sahai et al., 2024; Ayeh et al., 2013).

Trust is a central component of message evaluation: it reflects the belief that the content is honest, sincere, and free of manipulative intent (Mayo, 2017). In digital environments characterized by information overload and uncertainty, trust serves as a fundamental heuristic that determines whether a message is attended to, believed, and utilized in decision-making (De Cicco et al., 2025a). When trust declines, audiences become skeptical and distance themselves cognitively and emotionally from the content. Once trust is weakened, a cascade of evaluative consequences can follow, because when people doubt that a review reflects genuine experience, they may also tend to judge it as less informative, relevant, and useful for guiding their own decisions (Filieri, 2016). Attitude toward the content represents the overall assessment that emerges from both cognitive and affective assessments of the message. Readers who perceive content as relevant and valuable tend to like it more and evaluate it more favorably, while those who find it unhelpful or untrustworthy respond with weaker attitudes (Rodriguez-Hernandez et al., 2024). Reviews that appear human, spontaneous, and sincere typically elicit positive attitudes because they fulfill expectations of peer honesty and social connection (Knight et al., 2023). When these cues are disrupted by the perception that the content is GAI-generated, the message may still be read, but fails to generate the same affective resonance.

Based on the rationale above, the present study proposes that GAI-assisted consumer reviews will be perceived less favorably than fully human-generated ones. Thus, the following hypotheses are formulated:

H1. User reviews perceived as created with GAI assistance are evaluated as less trustworthy than those created solely by a human author.

H2. User reviews perceived as created with GAI assistance are evaluated as less useful than those created solely by a human author.

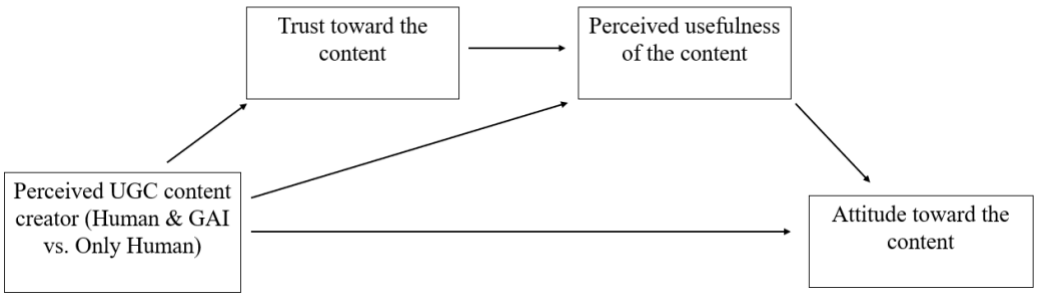
H3. User reviews perceived as created with GAI assistance elicit a less favorable attitude toward the content than those created solely by a human author.

H4. The relationship between perceived GAI involvement and attitude toward the content is serially mediated by trust and perceived usefulness, such that the perception of GAI assistance decreases trust, which lowers perceived usefulness, ultimately leading to a less favorable attitude toward the content.

Figure 1

Illustrates the research model of this study.

Figure 1. Research model



METHODOLOGY

The research employed a between-subjects experimental design with one manipulated factor: perceived creator type (human only vs. human & GAI).

Using a scenario-based experimental design, participants evaluated an identical online course review under two hypothetical conditions: in one, they were asked to imagine the review was fully human-written, while in the other, they were asked to imagine it was written by a human with the assistance of GAI.

A review of previous studies and validated scales guided the selection of measures to ensure conceptual and psychometric rigor. All items were rated on seven-point Likert scales (1 = *strongly disagree*, 7 = *strongly agree*).

Perceived usefulness of the content was measured by adapting items from Venciute et al. (2023). Trust toward the content was assessed using items adapted from Zhang et al. (2025). Attitude toward the content was selected as the primary dependent variable to capture the participants' overall evaluative response to the perceived authorship; it was measured by adapting items from Zhang et al. (2020). The English versions of all items were

adapted into Italian to fit the study context, with minor linguistic refinements. Data collection took place in summer 2025 through an online survey. The link was distributed across online communities and participants' networks. Participation was voluntary with informed consent, strictly adhering to the Declaration of Helsinki and European GDPR standards.

The study employed a manipulation check to confirm source perception and an attention check to ensure participant engagement. The final sample consisted of 161 participants, with 82 assigned to the human-only condition and 79 to the human & GAI condition. Participants' ages ranged from 18 to 78 years (M = 35.34, SD = 15.89). The sample included 113 females, representing 70.2 percent of respondents, 46 males, accounting for 28.6 percent, and two participants who preferred not to disclose their gender. Most participants held a high school diploma (67.1%), followed by a university degree (21.7%), while the remaining respondents reported lower educational levels.

RESULTS

Preliminary analyses were conducted to verify the distribution of demographic variables across conditions. A chi-square test indicated that gender distribution did not differ significantly between the human & GAI and human-only conditions, $\chi^2(2, N = 161) = 3.62$, $p = .16$. A one-way ANOVA revealed that participants' age did not vary significantly across conditions, $F(1,159) = 0.42$, $p = .52$. A significant difference emerged for education level, $F(1,159) = 13.63$, $p < .001$, indicating that participants in the human & GAI condition reported slightly higher educational attainment. Education was included as a covariate in the subsequent analyses to control for potential confounding effects. In addition to education, the analysis controlled for general opinions toward GAI, usage frequency, and interest in the reviewed product. Including these covariates accounted for individual differences, ensuring that the observed effects were driven by the experimental manipulation rather than pre-existing dispositions.

A series of ANCOVAs were conducted to examine the effect of content creator type on the three dependent variables (see Table 1 for descriptive statistics). First, the effect of creator type on trust was statistically significant, $F(1, 155) = 7.32$, $p = .008$, partial $\eta^2 = .045$. Participants reported higher trust in human-only reviews (M = 4.51, SD = 1.61) than in those created with GAI support (M = 3.67, SD = 1.66). Second, regarding perceived usefulness, the results revealed that although participants evaluated human-authored reviews more favorably (M = 4.27, SD = 1.72) than GAI-assisted ones (M = 3.65, SD = 1.76), this effect did not reach conventional statistical significance, $F(1, 155) = 3.08$, $p = .081$, partial $\eta^2 = .019$. Finally, creator type had a significant effect on attitude toward the content, $F(1, 155) = 6.45$, $p = .012$, partial $\eta^2 = .040$. More positive attitudes emerged when the review was written solely by a human (M = 5.86, SD = 1.41) compared to the GAI-assisted condition (M = 5.20, SD = 1.57).

Table 1.

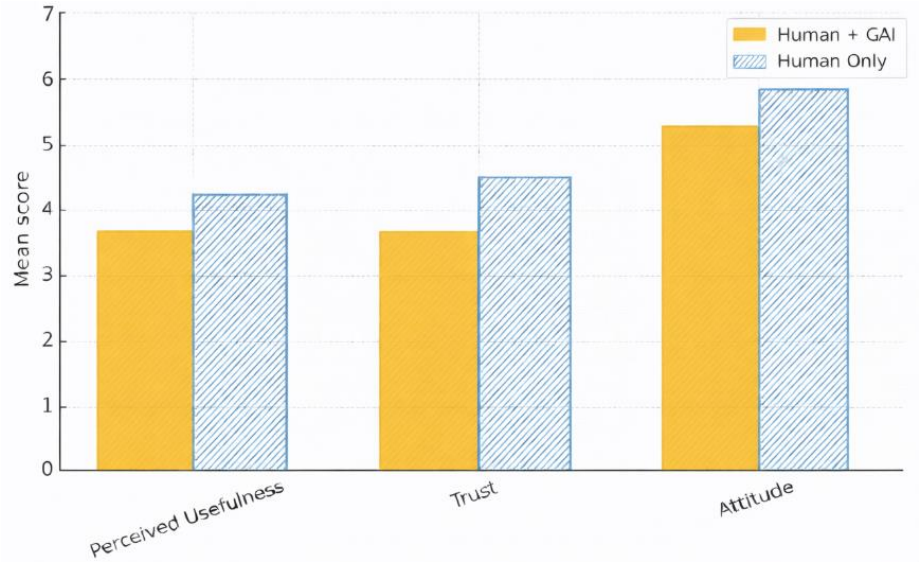
Means and standard deviations of the constructs

Construct	Human & GAI	Human only	Total
Perceived usefulness of the content	*M* = 3.65 (*SD* = 1.76)	*M* = 4.27 (*SD* = 1.72)	*M* = 3.96 (*SD* = 1.76)
Trust toward the content	*M* = 3.67 (*SD* = 1.66)	*M* = 4.51 (*SD* = 1.61)	*M* = 4.10 (*SD* = 1.68)
Attitude toward the content	*M* = 5.20 (*SD* = 1.57)	*M* = 5.86 (*SD* = 1.41)	*M* = 5.54 (*SD* = 1.52)

Overall, these results suggest that the disclosure of GAI assistance in content creation reduces trust and attitudinal evaluations of user-generated reviews. Even when the human author remains the primary source, the perceived GAI's involvement seems to dampen perceived credibility and emotional response toward the content. A visual summary of the ANCOVA results is presented in Figure 2, which displays the mean scores for perceived usefulness of the content, trust toward the content, and attitude toward the content across the two creator conditions.

Figure 2

Effects of perceived UGC creator type on the variables of interest (ANCOVA results)



A serial multiple mediation analysis (Hayes' PROCESS Model 6) was conducted with perceived content creator as the independent variable (0 = human & GAI, 1 = human only), trust toward the content as the first mediator, perceived usefulness of the content as the

second mediator, and attitude toward the content as the dependent variable. Education, general opinion toward GAI, frequency of GAI use, and product interest were included as control variables.

The results showed that creator type positively predicted trust toward the content (b = 0.71, SE = 0.26, p = .008), which in turn was strongly related to perceived usefulness (b = 0.73, SE = 0.06, p < .001). In the final model, trust maintained a significant positive effect on attitude (b = 0.35, SE = 0.09, p < .001), while the effect of perceived usefulness on attitude was not significant (b = 0.13, p = .120). As the direct effect of creator type on attitude was also non-significant (b = 0.27, p = .179), the model indicates a full mediation. This pattern highlights a gatekeeping effect: when GAI involvement reduces trust, the informational usefulness of the content is no longer sufficient to independently drive positive attitudes, making trust the primary psychological anchor for evaluation. This mechanism is further supported by the indirect effects, based on 5,000 bootstrap samples. The total indirect effect was significant (b = 0.31, 95% CI [0.085, 0.577]), driven by the specific path through trust alone (b = 0.25, 95% CI [0.055, 0.527]) and the hypothesized sequential path through trust and usefulness (b = 0.07, 95% CI [0.002, 0.226]).

Overall, the findings show that when a review is perceived as written with the support of GAI, participants expressed lower trust in the content, which subsequently diminished their overall attitude toward it. The identified pattern suggests that reduced trust functions as the main mechanism through which GAI involvement weakens how audiences evaluate the message.

DISCUSSION

The present study provides new empirical evidence on how GAI involvement shapes audiences' responses to content generated by users.

The results demonstrate that even the mere perception of GAI assistance can negatively affect evaluations of online peer reviews, confirming that technological involvement alters the social and psychological cues that normally sustain credibility in peer information exchanges (Knight et al., 2023; Niu et al., 2025).

The findings extend the Source Credibility Theory (Hovland & Weiss, 1951) to a contemporary communication environment characterized by human–AI collaboration. In traditional peer-generated communication, trustworthiness plays a central role (Filieri, 2016), since users tend to rely on fellow consumers because they are perceived as authentic, sincere, and free from strategic intent (Singh & Pandey, 2024). The results confirm that when GAI is perceived as part of the authorship process, this crucial dimension erodes. Even though GAI may enhance traits associated with expertise, it simultaneously weakens the affective and relational cues that make user communication trustworthy. This finding resonates with earlier research indicating that AI is often judged as competent but cold, leading to diminished relational credibility (Knight et al., 2023; Jia et al., 2024).

The study's mediation results clarify the process through which GAI perception influences content evaluation. Trust emerged as the primary psychological mechanism linking perceived GAI involvement to downstream judgments. When participants believed the review had been written with GAI support, they reported lower trust toward the content, which, in turn, reduced perceived usefulness and ultimately led to weaker attitudes. This

sequential pattern supports the assumption that trust functions as the gateway heuristic in online information processing (De Cicco et al., 2025a). As trust declines, audiences view the text as less informative and less relevant to their decision-making. While literature often suggests that perceived usefulness directly shapes attitudes (Miranda et al., 2021; Rodríguez-Hernández et al., 2024), our findings indicate that in the context of GAI assistance, this construct plays a secondary role, with evaluations being mostly driven by the initial perception of trust.

IMPLICATIONS AND FURTHER RESEARCH

This study refines our understanding of how the introduction of GAI cues reshapes the evaluation of online peer reviews (Hua et al., 2024). When readers are prompted to realize that an algorithm contributed to a review, they may infer a lack of human emotion, intention, or even experiential depth. We believe this interpretation does not necessarily reflect hostility toward technology; rather, it mirrors cognitive expectations of what makes human communication meaningful. As Kracher et al. (2005) argued, authenticity serves as a proxy for trust: when authenticity is questioned, trustworthiness collapses. In this sense, the current findings reinforce that trust remains the psychological anchor of credibility in user-generated content (Ayeh et al., 2013), even in technologically augmented contexts.

The study contributes to specific theoretical domains. First, it contributes to the broader literature on user-generated content by deepening the understanding of how audiences evaluate online peer reviews in technology-mediated environments (Santos, 2022). Second, it expands current knowledge on the emerging phenomenon of GAI-assisted consumer text, a domain that remains largely unexplored despite the growing integration of generative artificial intelligence in everyday content creation (Knight et al., 2023; Niu et al., 2025). Third, this research extends the credibility framework by demonstrating that appraisals of trustworthiness are not confined to human senders but also encompass hybrid human–machine communicators. The study draws on literature regarding authenticity and automation to reveal that audiences rely on implicit expectations of human agency when evaluating online reviews (Knight et al., 2023). When these expectations are violated, it may trigger cognitive correction processes that diminish both trust and overall evaluative engagement.

From a managerial standpoint, the results have important implications for digital platforms, review systems, and online communities that rely on user contributions. As the use of GAI for content creation among ordinary users continues to expand, restricting its use is neither realistic nor beneficial. Instead, the challenge lies in guiding users to employ GAI tools in ways that preserve trust. Platforms should help users employ GAI tools credibly by offering brief guidelines or prompts that encourage them to add personal reflections or experiential details, balancing GAI efficiency with human authenticity. Such cues may restore warmth and maintain trust without reducing the usefulness of GAI support. Additionally, platforms could promote transparent but reassuring disclosure, inviting users to clarify that their GAI-assisted reviews still reflect genuine personal experiences.

Despite its contributions, this research has some limitations that open avenues for future inquiry. A primary limitation of this study is the sample's demographic skew toward educated females, which may restrict the generalizability of the findings. Future research

should prioritize stratified sampling to include more diverse educational backgrounds and a balanced gender ratio, ensuring the results are robust across a broader population. Future research could investigate whether the impact of GAI involvement in online peer reviews varies across different demographic cohorts. It would be valuable to explore whether the negative effects observed in this study are consistent across generations, and if digital native cohorts, such as Generation Z – often referred to as the iGeneration (Pandita, 2022) – exhibit different evaluative patterns due to their inherent familiarity with emerging technologies. Given their higher familiarity with generative tools, younger generations might employ different interpretive frameworks when assessing the authenticity and value of GAI-assisted content.

Regarding the research design, this study employed a scenario-based approach. While this method ensures experimental control and internal validity, future research could replicate these findings in more naturalistic settings to enhance ecological validity. Additionally, this study conceptualized GAI involvement as a binary condition (human-only vs. human-AI collaboration); however, in real-world contexts, GAI assistance exists on a continuum, ranging from minor grammatical editing to substantial content drafting. Future investigations should examine how varying levels of GAI involvement influence consumer responses, as the "evaluative discount" observed here may fluctuate depending on the perceived extent of the algorithmic contribution. Further studies could also explore boundary conditions, such as the type of product or service under evaluation (e.g., emotional vs. instrumental) to assess when GAI assistance might be accepted, as a sign of efficiency or sophistication. Finally, examining cross-cultural differences in authenticity norms and trust formation could enrich our understanding of how human–GAI collaboration is perceived globally for content creation.

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BEHAVIORAL ENTROPY AND CONSUMER PREDICTABILITY: A MACHINE LEARNING PERSPECTIVE ON MARKETING ANALYTICS

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ABSTRACT

This paper introduces behavioral entropy, derived from Shannon's (1948) information theory, as a framework explaining systematic variation in machine learning prediction accuracy across consumers. Propositions address entropy's effects on algorithm performance, segmentation stability, personalization effectiveness, and environmental moderation. High-entropy consumers resist prediction regardless of algorithmic sophistication.

INTRODUCTION

Machine learning has transformed marketing analytics. Algorithms now process vast behavioral datasets to predict purchase likelihood, segment consumers, personalize recommendations, and optimize marketing mix allocation (Wedel & Kannan, 2016). These methods have produced documented improvements in targeting efficiency and campaign performance (Cui et al., 2006). Yet a fundamental question remains underexplored: why do predictive models perform well for some consumers and poorly for others, even when data quality and model specification are comparable?

This paper proposes that behavioral entropy explains systematic variation in consumer predictability. Shannon (1948) formalized entropy as a measure of uncertainty in probability distributions, providing a mathematical framework that has since been applied across disciplines from physics to ecology to economics. When applied to consumer behavior, entropy captures how individuals distribute choices across alternatives. A consumer who concentrates purchases into a small set of brands exhibits low entropy and generates stable behavioral signals that machine learning algorithms can detect and project forward. A consumer who distributes purchases across many brands exhibits high entropy and generates variable signals that resist prediction regardless of algorithmic sophistication.

The distinction matters because modern marketing analytics operates on the assumption that sufficient data and sufficiently sophisticated algorithms can predict any consumer's behavior. This assumption encounters a theoretical limit when applied to high-entropy consumers. No algorithm, however advanced, can extract stable patterns from behavior that is genuinely diverse. The challenge is not insufficient data or inadequate models but rather the fundamental structure of the behavior being predicted.

Environmental uncertainty amplifies these challenges. Economic volatility, health crises such as the COVID-19 pandemic, and social disruption introduce unpredictability that

may alter how consumers organize their choices (Kirk & Rifkin, 2020). Fear and anxiety reshape decision processes in ways that may shift entropy levels across populations (Lerner & Keltner, 2000). Marketing analytics systems calibrated under stable conditions may systematically underperform when environmental shocks restructure behavioral patterns.

This conceptual paper develops a framework linking Shannon's entropy to marketing analytics outcomes. The framework generates propositions regarding how entropy affects machine learning model performance, segmentation stability, and personalization effectiveness. It further considers how environmental uncertainty moderates these relationships. The contribution is both theoretical and practical: identifying entropy as a construct that explains prediction limits and deriving implications for how marketing analytics should accommodate systematic differences in consumer predictability.

CONCEPTUAL FOUNDATIONS

SHANNON ENTROPY AND INFORMATION THEORY

Shannon (1948) introduced entropy as a measure of uncertainty in his foundational paper on information theory. For a discrete probability distribution across k categories with probabilities p_1, p_2, ..., p_k, Shannon defined entropy H as:

$$H = -\Sigma\, p_i \log(p_i)$$

The formula captures a precise intuition: entropy increases as probability spreads across more categories and decreases as probability concentrates into fewer categories. When all probability mass falls into a single category ($p_1 = 1$, all others = 0), entropy equals zero, representing complete certainty. When probability distributes equally across all categories, entropy reaches its maximum, representing maximum uncertainty (Cover & Thomas, 2006).

Shannon's formulation has proven remarkably general. Entropy measures appear in thermodynamics, ecology, linguistics, neuroscience, and economics (Jaynes, 1957). The measure's power derives from its abstraction: entropy quantifies distributional structure without requiring assumptions about what the categories represent or whether particular distributions are desirable. A high-entropy distribution is diverse; a low-entropy distribution is concentrated. The measure describes structure, not value.

ENTROPY IN MARKETING AND CONSUMER RESEARCH

Herniter (1973) introduced entropy to marketing through models of brand purchase behavior. Using maximum entropy principles, Herniter demonstrated that observed brand switching patterns could be derived from market share data alone, without requiring assumptions about consumer decision processes. Kapur, Bector, and Kumar (1984) extended these models using alternative entropy formulations, and subsequent work applied entropy concepts to analyze competitive market structure and category dynamics.

These applications treated entropy as a property of aggregate markets rather than individual consumers. The current framework shifts focus to individual-level behavioral entropy: how does a specific consumer distribute choices across alternatives? This shift aligns entropy with the individual-level focus of modern marketing analytics, where the goal

is often to predict specific consumers' responses rather than to characterize aggregate market patterns.

Behavioral entropy can be computed across multiple domains relevant to marketing. Brand entropy measures how consumers distribute purchases across competing brands within a category. Channel entropy measures distribution across retail formats. Category entropy measures diversification of spending across product categories. Time-use entropy, drawing on time-diary methods from sociology and economics (Robinson & Godbey, 1997), measures how individuals distribute daily minutes across activities. Each measure captures a dimension of behavioral structure with potential implications for predictability.

MACHINE LEARNING AND THE PREDICTION PROBLEM

Machine learning methods have become central to marketing analytics precisely because they address high-dimensional prediction problems where traditional regression encounters limitations (Hastie et al., 2009). Regularization techniques such as LASSO (Tibshirani, 1996) handle situations with many potential predictors by penalizing model complexity and shrinking weak effects toward zero. Ensemble methods such as Random Forest (Breiman, 2001) combine predictions from many models to achieve stability that individual models cannot match. These methods excel at extracting predictive patterns from complex data.

Yet machine learning methods share a common requirement: the data must contain patterns to extract. When behavior is genuinely diverse, stable patterns do not exist to be found. A Random Forest searching for splits that separate high-value from low-value consumers will find weak splits when the target variable varies unpredictably. A LASSO model searching for predictive coefficients will shrink most coefficients toward zero when predictors lack consistent relationships to outcomes. The algorithms function correctly; the behavior simply does not support prediction.

This observation connects entropy to machine learning performance. High-entropy behavior, by definition, lacks the concentration that generates stable patterns. Algorithms trained on high-entropy consumers will exhibit higher prediction error not because of model misspecification but because of the underlying behavioral structure. The implication challenges a common assumption in marketing analytics: that prediction accuracy is primarily a function of data quantity and algorithmic sophistication. For high-entropy consumers, the binding constraint is the behavior itself.

CONSUMER HETEROGENEITY AND PREDICTABILITY

Marketing scholarship has documented extensive consumer heterogeneity. Allenby and Rossi (1998) demonstrated that modeling heterogeneity is central to marketing applications because individual-level parameter estimates drive targeting and personalization. Kamakura and Russell (1989) showed that consumers differ in both preferences and response to marketing mix variables. DeSarbo et al. (1997) found that within-segment heterogeneity remains substantial even when multiple segments are specified.

This heterogeneity literature focuses primarily on differences in what consumers prefer. The entropy framework adds a complementary dimension: differences in how consistently consumers express preferences. Two consumers might both prefer Brand A, but one purchases Brand A 95% of the time while the other purchases Brand A 55% of the time, distributing remaining purchases across competitors. Both consumers share a preference ordering, yet they differ dramatically in predictability. Traditional heterogeneity models that focus on preference parameters may miss this distinction.

ENVIRONMENTAL UNCERTAINTY, FEAR, AND BEHAVIORAL CHANGE

Environmental conditions influence how consumers organize behavior. Hirsh, Mar, and Peterson (2012) proposed an entropy model of uncertainty suggesting that uncertainty poses a fundamental adaptive challenge, motivating individuals to adopt goals and belief structures that constrain behavioral options. When environmental conditions introduce uncertainty that individuals cannot easily resolve, anxiety increases and behavioral patterns may shift toward either greater concentration (seeking safety in familiar routines) or greater diversification (hedging against unpredictable outcomes).

Research on consumer behavior during the COVID-19 pandemic illustrates these dynamics. Kirk and Rifkin (2020) documented consumers reacting, coping, and adapting to pandemic-imposed constraints. Omar et al. (2021) found that perceptions of uncertainty, severity, and scarcity predicted panic buying behavior. Yuen et al. (2020) identified psychological antecedents of stockpiling during health crises. These studies demonstrate that environmental shocks can restructure behavioral patterns in ways that alter entropy levels.

Fear operates through specific psychological mechanisms. Lerner and Keltner (2000) demonstrated that fear is associated with perceptions of uncertainty and lack of control, in contrast to anger, which is associated with certainty and control. Atalay and Bodur (2022) found that marketing messages emphasizing consumer empowerment, which increased sales under normal conditions, failed when COVID-19-related fear was elevated. Fear may fundamentally alter the decision processes that marketing analytics attempts to model.

PROPOSITIONS

The framework generates propositions regarding how behavioral entropy affects marketing analytics outcomes and how environmental conditions moderate these relationships.

Proposition 1: Machine Learning Model Performance

Machine learning models will explain less variance and exhibit higher prediction error for high-entropy consumers than for low-entropy consumers, holding data quality, feature sets, and model specifications constant. This proposition follows from Shannon's definition: high entropy indicates dispersed probability, which by definition lacks the concentration that generates detectable patterns. Regularization methods will shrink coefficients toward zero when predictors lack consistent relationships to diverse outcomes. Ensemble methods will exhibit high variance across trees when no stable splits exist.

The practical implication is that model performance metrics should be computed separately for consumers stratified by entropy level. Aggregate performance metrics that combine low-entropy and high-entropy consumers may obscure systematic variation in predictive accuracy. Model diagnostics that identify high-error observations may reveal clustering among high-entropy consumers.

Proposition 2: Segmentation Stability

Segment membership will exhibit greater temporal instability for high-entropy consumers than for low-entropy consumers. Segmentation algorithms assign consumers to groups based on observed characteristics (Wedel & Kamakura, 2000). When those characteristics vary across time because behavior itself is diverse, segment assignments become unstable. A high-entropy consumer may appear in different segments depending on which observation window is used for classification.

This proposition has methodological implications for segmentation validation. Hold-out validation that tests whether consumers remain in assigned segments over time will yield lower stability metrics for segments containing disproportionate shares of high-entropy consumers. Segment solutions that minimize within-segment variance may systematically exclude high-entropy consumers who do not fit cleanly into any segment.

Proposition 3: Personalization Returns

Personalization investments will yield diminishing returns for high-entropy consumers relative to low-entropy consumers. Personalization algorithms identify patterns in behavioral history and project those patterns forward to generate recommendations (Aguirre et al., 2015). When behavioral history exhibits high diversity, projections based on any subset of past behavior may miss future behavior that resembles different subsets.

This proposition is counterintuitive because high-entropy consumers often appear valuable: they purchase across many categories, generating extensive behavioral data. Yet that data reveals diversity rather than targetable patterns. The implication is that personalization resources may be more productively allocated to low-entropy consumers whose concentrated behavior supports accurate prediction.

Proposition 4: Environmental Moderation

Environmental uncertainty will affect behavioral entropy differently depending on initial entropy levels and threat characteristics. Consumers with initially low entropy may increase entropy when environmental conditions make familiar options unavailable or risky. Consumers with initially high entropy may decrease entropy when uncertainty motivates retreat to safe, familiar choices. The direction of entropy change depends on whether uncertainty threatens availability (promoting diversification to hedge) or safety (promoting concentration into known options).

Research on pandemic consumer behavior supports bidirectional effects. Some consumers exhibited panic buying, concentrating purchases into essential categories (Yuen et al., 2020). Others exhibited increased variety-seeking when preferred options were unavailable (Kirk & Rifkin, 2020). Marketing analytics systems calibrated during stable

periods may require recalibration when environmental shocks alter the distribution of entropy across the consumer population.

Proposition 5: Fear and Model Validity

Marketing models assuming deliberative, preference-consistent decision processes will exhibit reduced validity when consumer fear is elevated. Fear disrupts normal decision processes by triggering heuristic rather than systematic processing (Lerner & Keltner, 2000). Models that assume behavior reflects stable underlying preferences may fail when fear causes consumers to deviate from those preferences. The implication is that model validity should be monitored across environmental conditions, with recalibration when conditions suggest elevated fear across the consumer population.

IMPLICATIONS FOR MARKETING ANALYTICS

Entropy as a Model Parameter

Marketing analytics systems might incorporate consumer-level entropy as a parameter governing prediction expectations and resource allocation. For low-entropy consumers, aggressive personalization and narrow targeting are appropriate because behavior supports accurate prediction. For high-entropy consumers, broader strategies that accommodate behavioral diversity may be more appropriate than attempting precise prediction that the behavioral structure does not support.

Stratified Model Development

Rather than building a single model for all consumers, analysts might develop separate models for entropy strata. A model optimized for low-entropy consumers might emphasize recent behavior as predictive of future behavior. A model for high-entropy consumers might emphasize contextual variables that capture momentary influences rather than stable preferences. This stratified approach acknowledges that the same algorithm may perform differently across consumers with different behavioral structures.

Dynamic Monitoring

Because environmental conditions can shift entropy levels, analytics systems should monitor aggregate entropy as an indicator of market predictability. When environmental shocks occur, aggregate entropy may shift, signaling that models calibrated under prior conditions require updating. Real-time entropy monitoring could provide early warning that prediction accuracy is likely to decline, enabling proactive recalibration.

DIRECTIONS FOR FUTURE RESEARCH

Several research directions emerge from this framework. First, researchers should develop entropy measures computable from typical marketing data. Transaction records support computation of brand entropy, category entropy, and channel entropy. The relationship among these domain-specific entropy measures, and their relative predictive power for marketing outcomes, warrants investigation.

Second, researchers should examine entropy's temporal stability. If entropy reflects stable individual differences, it should persist across contexts and time periods. If entropy reflects situational adaptation, it should shift when circumstances change. Panel data tracking the same consumers across environmental conditions would address this question.

Third, researchers should investigate interactions between entropy and specific machine learning methods. Do some algorithms degrade more gracefully for high-entropy consumers than others? Do ensemble methods offer advantages over single models when entropy is high? Systematic comparison of algorithmic performance across entropy levels would inform method selection.

Fourth, researchers should examine the antecedents of behavioral entropy. What household, demographic, or situational factors predict high versus low entropy? Understanding what produces behavioral diversity would inform both targeting strategy and theoretical development regarding the causes and consequences of consumer predictability.

CONCLUSION

Marketing analytics rests on the assumption that consumer behavior can be predicted with sufficient data and sufficiently sophisticated algorithms. Shannon's (1948) entropy provides a framework for understanding the limits of this assumption. Some consumers concentrate behavior into stable patterns that support accurate prediction. Others distribute behavior across diverse alternatives, generating high entropy that resists prediction by definition.

Machine learning methods excel at pattern extraction but cannot extract patterns that do not exist. When behavior is genuinely diverse, the binding constraint on prediction accuracy is the behavior itself, not the algorithm or the data. Environmental uncertainty complicates matters further by potentially shifting entropy levels across consumer populations, invalidating models calibrated under different conditions.

The framework developed here suggests that marketing analytics should incorporate entropy as a fundamental parameter. Prediction expectations, resource allocation, and model specification should vary based on the entropy characteristics of target consumers. The consumer who defies prediction is not an anomaly to be explained away but rather a fundamental feature of human behavioral diversity that analytics systems must accommodate.

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A SYSTEMATIC REVIEW OF PAIN POINTS AND CUSTOMER EXPERIENCE DISRUPTION

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EXTENDED ABSTRACT

Managers have been seeking holistic ways to effectively implement touchpoints in their customer journeys to create seamless and memorable experiences. Touchpoints can be defined as "episodes of direct or indirect contact with a brand or a firm that individuals can initiate, e.g., through search engines, websites, email or social media" (Hallikainen et al., 2018, p. 386). They include atmospheric, technological, communicative, process, employee–customer interaction, customer–customer interaction, and product interaction elements (Stein & Ramaseshan, 2016). They can be distinguished by type of ownership (brand-owned, partner-owned, customer-owned, or social/external) or by purpose (functional, social, community, or corporate) (Hallikainen et al., 2018). However, customers do not always perceive these touchpoints as being positive. Touchpoints can easily become pain points if marketers do not manage them properly.

Literature in experiential marketing has examined the role of touchpoints and touchpoint implementation in retailing and customer experience (Lemon & Verhoef, 2016; Verhoef et al., 2009). However, literature remains scant on pain points and their role in experience disruption. This paper aims to bridge this gap by identifying determining pain points that disrupt experience, their disruptive mechanisms as well as their experiential outcomes through a systematic literature review. The main research questions for this paper are the following: What are pain points, and what are the mechanisms explaining their disruptive role in perceived experience?

The authors used the scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR) for assembling, arranging, and assessing the literature on pain points in perceived customer experience (Paul et al., 2021). The authors generated a series of queries using the keywords, truncation (*), and boolean operators "fail point*" OR "failpoint*" AND "pain point*" OR painpoint* AND "customer experien*" in the TOPIC field in the Web of Science database. The publication range spread from January 1, 2009 to May 27, 2025. For the inclusion criteria quality control, articles had to be published in journals ranked Web of Science (WOS) Q1 and Q2. The query generated 53 documents.

The authors chose to apply the theories, constructs, characteristics, and methods (TCCM) and the antecedents-decisions-outcomes (ADO) frameworks to analyze the results since they deliver the highest level of clarity and coverage in their reviews (Paul et al., 2021). The literature addresses the characteristics of pain points either by classifying them or by developing tools for detecting and managing them. Pain points in customer experience arise from a variety of structural, technological, and interactional antecedents across service and consumption contexts. Research shows that fragmented omnichannel environments, access-based service models, and immersive digital platforms often generate inconsistencies that disrupt the customer journey (Alexander et al., 2025; Gahler et al.,

2023). Systemic interdependencies in platforms contribute to friction when customer actions affect others in the circulation flow (Alexander et al., 2025). The management and interpretation of pain points yield differential outcomes depending on the context and intervention strategy.

Firstly, this paper proposes that it is important to adopt a more human-centric perspective when identifying and managing pain points, especially in a world more prominently dominated by back-and-forth "phygital" movement between virtual and physical spaces. Secondly, it proposes that pain points can be examined through the lens of phygital – media, digital, physical, and human – connectors that facilitate sharing and creating value (Batat, 2024).

This systematic review has demonstrated that pain points are critical yet understudied elements in the management of customer experience. While prior literature in experiential and service marketing has largely focused on the design and optimization of touchpoints, this review highlights the disruptive potential of poorly managed or misaligned touchpoints—pain points—that interfere with the seamless progression of customer journeys. Across diverse consumption contexts, from access-based services to omnichannel retail and immersive metaverse environments, pain points emerge as identifiable disruptions that degrade perceived experience quality. In omnichannel and phygital environments, where customers move fluidly across digital and physical spaces, the management of pain points requires an integrated understanding of how value is co-created across touchpoints.

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MARCOM IN THE GENERATIVE ERA: A FRAMEWORK FOR AGILE AND ADAPTIVE INTEGRATION

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ABSTRACT

Generative AI technologies are evolving more rapidly than marketing communication professionals can adapt and integrate them into practice. Organizations require systematic integration approaches that bridge this gap between rapid technological change and the realities of organizational learning. This study examines how agile methodologies combined with university partnerships create sustainable lifelong learning frameworks addressing rapid AI adoption. Using diffusion of innovations theory (Rogers, 1962), we propose a framework enabling small to midsize organizations to leverage students as innovation drivers who catalyze organizational technology adoption. Results demonstrate that structured educational partnerships provide continuous innovation capabilities while preparing graduates as effective change agents.

INTRODUCTION

The world's leading media agencies are each taking a distinctive approach to AI workforce integration, and together they paint a compelling picture of an industry in active transformation. To begin, Publicis Groupe has operated the furthest ahead, building Marcel, an AI-powered learning ecosystem connecting over 100,000 employees to skills development, mentorship, and knowledge sharing since 2017 and extending it through PL.AI, a personalized upskilling program tailored to individual roles and experience levels (Publicis Groupe, 2018; Publicis, 2024).

WPP Media has invested most distinctively in early-career talent pipelines, launching its Creative Technology Apprenticeship programs in partnership with Google to train more than 1,000 creative technologists by 2030 through real client briefs from L'Oréal and Unilever explicitly positioning early-career professionals as innovation catalysts rather than junior executors (WPP, 2025b). At the enterprise level, WPP replaced its legacy GroupM brand with WPP Media, an AI-powered media company backed by £300 million annually in its WPP Open platform and announced a full organizational restructure under its Elevate28 plan to become a single, AI-enabled company (WPP, 2025a; WPP, 2026). Omnicom has focused on distributing AI capability across all professional disciplines simultaneously, deploying its relaunched Omni platform with 2.6 billion identity records and embedded AI agents as the daily infrastructure through which its entire workforce engages with AI (Omnicom Group Inc., 2026).

Dentsu, the Japanese-headquartered global agency group frames AI as a collaborative partner in human creativity rather than a productivity substitute (Dentsu Inc.,

n.d). It has formalized this philosophy through research partnerships with academic institutions spanning a decade. In 2025, Dentsu extended this model through a multi-party research initiative with SoftBank and SB Intuitions to develop Japanese-language generative AI for copywriting (SoftBank, 2025). Internally, the company implemented mandatory AI literacy training globally in May 2025, developed over 80 AI solutions through collaborative hackathons, and runs "Café AI and Me" a reflective dialogue series exploring the human and ethical dimensions of AI alongside its technical training infrastructure (MatrixBCG.com, 2025; Dentsu-ho, 2025).

Today, marketing communication organizations of all types and sizes, must systematically review their operational structures against the transformative capabilities of AI, which has fundamentally shifted how many industries operate. Traditional approaches to technology adoption, whether rushing to implement every new tool or maintaining status quo operations, prove insufficient for the scale and pace of generative AI disruption.

Marketing communication sits at the intersection of organizational strategy and audience engagement. When marcom teams fail to effectively integrate AI, either by resisting or delaying adoption, or implementing tools without strategic frameworks, organizations risk losing competitive advantage, diminishing creative quality, or inadvertently violating ethical boundaries (Kietzmann et al., 2018). Conversely, marketing communication professionals who successfully navigate AI integration can amplify their strategic impact, extend their creative capabilities, and demonstrate the enduring value of human judgment in an increasingly automated landscape.

This paper explores how effective AI integration requires organizations to move through a deliberate process that ensures appropriate access and education for team members and incorporating AI capabilities into redefined workflows that preserve the strategic and creative judgment that distinguishes effective marketing communications (Huang & Rust, 2021).

LITERATURE REVIEW

Marcom professionals typically embrace the adoption of technology faster than other business sectors (Berthon et al., 2012). Rogers' (1962) diffusion of innovations theory provides essential framework for understanding innovation adoption patterns across industries through the identification of adopter categories: innovators (2.5%), early adopters (13.5%), early majority (34%), late majority (34%), and laggards (16%). Dearing and Cox's (2018) meta-analysis of the theory (N=5,208) found that Rogers' theory remains the most widely applied framework for understanding innovation adoption in professional settings.

Rogers' theory proposes that successful innovation diffusion depends on five key drivers, including relative advantage, compatibility, complexity, trialability, and observability. Greenhalgh et al.'s (2004) systematic review analyzed 495 empirical studies and confirmed that these attributes consistently predict adoption rates, with relative advantage and compatibility showing the strongest effects. The diffusion process follows predictable patterns, with innovations spreading through social systems via communication channels over time. Rogers (2003) emphasizes that interpersonal channels prove particularly effective for persuading potential adopters. Opinion leaders play critical roles in accelerating diffusion by legitimizing innovations for their social networks. Change agents facilitate adoption by

linking the sources of innovation with potential adopter systems. This innovation orientation creates responsibilities for marketing communication professionals and educators. Marketing professionals function as critical links in organizational diffusion processes, serving as change agents who facilitate adoption among colleagues in other departments who typically fall into early majority, late majority, or laggard categories.

Innovation Adoption in Marketing Communication through Partnerships

Research on real client engagement and agency partnerships in education illuminates how experiential learning develops innovator characteristics. Multiple studies in marketing and communication education journals document the pedagogical benefits of authentic client projects. Lipschultz and Hilt's (2002) research compared student outcomes across courses with and without authentic client projects, finding that students working with real clients demonstrated significantly higher competency development in strategic planning, creative execution, and professional communication. Critically, these experiences develop students' confidence in championing innovations, a key characteristic of successful change agents in diffusion processes.

In addition, research on combining high-impact practices in advertising education provides particularly compelling evidence for how experiential learning develops students as innovation drivers. Faculty-undergraduate research collaborations focused on teaching applied diffusion theory through authentic client projects demonstrate that students engaged in real-world innovation campaigns develop a significantly deeper understanding of Rogers' diffusion of innovations framework than students learning theory through traditional lecture formats (Rego & Carey, 2023). This understanding proves invaluable when students enter the workforce and must facilitate adoption among colleagues less familiar with emerging technologies.

A study by Beard and Morton (1999) examined the effectiveness of client-based projects in marketing courses, finding that these experiences enhanced students' understanding of theory-practice connections. Students reported that working with real organizations illuminated complexity, ambiguity, and interpersonal dynamics absent from case studies, developing adaptive capacities valuable for professional success. These experiences specifically develop skills essential for innovation championing, including stakeholder persuasion, benefit articulation, and objection addressing.

Industry Practice as Validation, Havas Media

Havas Media Network's Media Imperatives 2026 report identifies five imperatives shaping brand communications, drawn from interviews with senior practitioners across the global media industry (Havas Media Network, 2026). Together, they describe a professional environment where static knowledge and traditional campaign thinking are no longer sufficient, and where adapting, iterating, and integrating AI with human judgment has become the defining professional competency.

The first imperative, the blending of physical, digital, and social experience into a single consumer field, demands professionals who have built and measured within these environments. The agile university-employer framework develops this fluency directly, as students working on real organizational briefs acquire practical capabilities that classroom instruction alone cannot produce (Havas Media Network, 2026). The second and third

imperatives address AI's relationship with human emotion and trust. Havas identifies the expectation that AI should "understand people's tone, nuance, and emotion" (Havas Media Network, 2026, p. 5) as a central challenge, while noting that AI disclosure has become consumers' top concern about brands on social media (Havas Media Network, 2026, p. 7). Together, these imperatives confirm that the most consequential AI competency is not technical but communicative: the judgment to deploy AI in ways that build rather than erode human connection. Structured employer partnerships develop exactly this capacity through practice, feedback, and genuine professional accountability. The fourth imperative, the compression of decision-making into real-time, single-interaction purchase cycles, maps directly onto agile methodology's emphasis on iterative, speed-responsive development. Students trained through short brief-create-test-reflect cycles develop the adaptive intuition Havas describes as essential: engineering "creativity and conversion as one connected experience" (Havas Media Network, 2026, p. 10) at market speed. The fifth imperative reframes attention as cumulative equity, arguing that durable brand value is built through sustained, emotionally resonant experience rather than momentary reach (Havas Media Network, 2026).

The evidence examined in this paper, theoretical and case-based, converges on a consistent set of implications for curriculum design, employer engagement, and institutional strategy. Curricula designed around agile principles and genuine employer partnership produce graduates who are more adaptive, more strategically capable, and more effective as change agents within the organizations they join. In a professional landscape defined by constant motion, the graduates who will thrive, and the organizations that will grow are those that have learned not just to adapt to change, but to move with it. Across industries, marketing communication (marcom) professionals are attempting to engage audiences with diminished internal resources and access to large language models (LLMs), but often without defined parameters for how their organizations will actually use these tools (Davenport & Ronanki, 2024). Some organizations have yet to establish AI usage policies.

METHODOLOGY

A case study at Northeastern University provides an example of how students function as drivers of innovation through structured experiential learning and authentic client engagement. The class project was part of a semester-long course in which students worked in agile teams on a comprehensive digital marketing campaign for a small business client in Maine specializing in organic pet products to produce client deliverables to be used in a digital marketing campaign to drive traffic to its e-commerce website and Amazon brand page.

Students organized into cross-functional teams of five members, mirroring agency structures with designated roles including project management, marketing research, media strategy, and creative. Teams worked in two-week sprints, conducting target audience segmentation research, developing digital media strategy, creating social media content, and presenting work-in-progress to the client for feedback at sprint reviews. This iterative structure provided students with direct experience with agile methodologies while reducing perceived complexity through incremental skill building.

Critically, the course incorporated structured exposure to professional innovation adoption practices through site visits to two large digital media agencies during the semester. At each agency, students attended panel discussions with alumni current practitioners specifically focused on how agencies integrate generative AI into campaign workflows. Practitioners discussed concrete applications including AI-assisted audience research, automated content generation for A/B testing, AI-enhanced visual asset creation, and generative tools for ideation and concept development.

Student as Innovation Drivers in Agile Learning Environments

Students applied learning from agency visits directly to their client project in real time, functioning as innovation sources who introduced AI capabilities to their small business client. The client, operating with limited marketing resources typical of small enterprises, lacked awareness of generative AI tools and their potential applications. Students demonstrated AI applications for social media content creation, showing how tools could generate multiple post variations for testing, create visual assets aligned with brand guidelines, and produce product descriptions optimized for different platforms.

Through Rogers' (2003) innovation-decision process, students educated the client about AI capabilities during the knowledge stage, providing demonstrations and concrete examples. During the persuasion stage, students articulated AI's relative advantage specifically for the client's context: limited marketing budget requiring content production efficiency, need for consistent posting across multiple platforms, and desire for professional-quality visual assets without photography costs. Students addressed compatibility concerns by emphasizing human oversight of all AI-generated content, ensuring alignment with the client's brand values emphasizing natural products and authentic relationships.

Students reduced complexity perceptions by creating simplified workflows the client could replicate independently, providing tutorials on AI tools appropriate for small business contexts, and offering troubleshooting guidance. The trialability factor proved particularly important, as students demonstrated AI tools using free or low-cost platforms accessible to small businesses. Observability emerged through tangible campaign deliverables that the client could directly compare to previous manual creation processes. The client adopted campaign materials immediately, implementing social media content and integrating website copy into their e-commerce platform. More significantly, the client reported continued use of AI tools introduced by students for ongoing marketing activities, demonstrating successful innovation transfer from educational to professional context.

RESULTS

Post-project assessment revealed several critical insights. First, students' extensive hands-on AI experience positioned them as credible sources despite their student status. Second, students' learning directly from agency practitioners about professional AI applications enabled them to articulate appropriate use cases and best practices. Third, the agile sprint structure with iterative client feedback created trust that facilitated client receptiveness to innovation recommendations. Fourth, students' explicit training in diffusion

theory informed their strategic approach to facilitating adoption, anticipating objections, and proactively addressing authenticity concerns.

The case study illuminates factors critical for preparing students as effective innovation drivers. The combination of hands-on client work, structured exposure to professional practice through agency visits, explicit diffusion theory instruction, and iterative engagement through agile sprints proved more effective than any single element alone. Working with a small business client created optimal conditions for student innovation driver roles, as small businesses prove particularly receptive to recent graduates' innovation championing.

Agile frameworks operationalize continuous learning through iterative cycles of action, feedback, and adaptation (Conboy, 2009). The case study demonstrates a critical connection between agile methodologies, experiential education, and organizational lifelong learning. When educational institutions structure student experiences around agile principles, they simultaneously develop student capabilities while modeling learning processes organizations must adopt to maintain competitive advantage in rapidly changing technological environments.

Kolb's (1984;1985) experiential learning theory proposes that knowledge construction occurs through transformation of experience. Applied to organizational lifelong learning, this suggests that organizations partnering with educational institutions gain access to systematic experiential learning processes already refined in academic contexts. Organizations can leverage educational partnerships to import proven learning frameworks while simultaneously gaining access to graduates trained in these approaches. Further, work by Slater and Narver (1995) demonstrated that firms with strong learning orientations achieved superior new product success rates and maintained competitive advantages in rapidly changing markets. Through the lens of diffusion theory, learning-oriented firms maintain larger proportions of innovators and early adopters in their workforce. Organizations partnering with universities gain direct access to innovators (students with extensive hands-on experience using emerging technologies) and create pipelines for continuous innovation influx as new cohorts graduate annually.

The Northeastern University case study validates this model. Students functioned as both learners developing their own capabilities and teachers transferring knowledge to their client. The client gained not just campaign deliverables but ongoing capability enhancement through AI skills transfer. This bidirectional learning represents precisely the continuous knowledge development organizations require to maintain technological currency. Organizations establishing ongoing partnerships with communication programs essentially outsource innovation scouting to educational contexts while benefiting graduates trained specifically in change agency. Recent graduates entering organizations bring not just current technical skills but also explicit training in how to facilitate peer adoption. Their understanding of diffusion processes enables them to diagnose resistance patterns and design targeted persuasion strategies. Their training in analyzing innovation barriers and attributes helps them articulate relative advantage in terms meaningful to different stakeholders. Their hands-on experience implementing innovations in diverse contexts provides relevant examples addressing colleagues' concerns.

Recommended Framework for Agile-AI Integration Enabling Continuous Learning

Drawing on diffusion theory and case study evidence, this framework enables small to midsize marketing communication organizations to integrate generative AI within agile structures while building continuous learning capabilities through university partnerships.

Phase One: Partner & Prepare

Establish partnerships with communication programs built around agile methodologies and emerging technology. Recruit recent graduates as organizational innovators, individuals with hands-on AI competence positioned to serve as change agents. Prioritize foundational AI training for opinion leaders whose influence will shape broader adoption (Rogers, 2003), and establish ethical guidelines covering client disclosure, copyright, quality standards, and human oversight before pilot work begins.

Phase Two: Pilot & Prove

Select pilot projects to maximize observability and demonstrate relative advantage, key drivers of adoption (Rogers, 2003). Structure work in two-week sprints, validated as optimal for momentum and feedback (Conboy, 2009). Incorporate student teams and recent graduates, document outcomes systematically, and share results across channels, recognizing that different adopter categories respond to different forms of evidence.

Phase Three: Scale & Sustain

Expand AI-enhanced agile practices beginning with teams connected to early adopters. Develop playbooks documenting proven applications, prompt engineering techniques, and quality criteria. Establish regular retrospectives to institutionalize learning (Dingsøyr et al., 2012) and create rotating AI champion roles filled largely by recent graduates to embed innovation within teams rather than siloing it.

Phase Four: Co-Create & Educate

Bring clients into AI-enhanced processes, aligning integration with existing relationship values (Palmatier et al., 2006). Develop materials explaining how AI enhances rather than replaces creative quality, as transparency significantly shapes client trust (Wang et al., 2024). Recent graduates are particularly effective here, translating current educational frameworks into accessible guidance on disclosure and responsible practice.

Phase Five: Evolve & Embed

Sustain university partnerships through client collaborations, internships, recruitment, faculty consulting, and advisory board participation, embedding continuous innovation scouting into operations as each new cohort introduces emerging technologies and research. Recognition systems should explicitly reward innovation championing at all levels, particularly for recent graduates whose contributions may otherwise go unacknowledged.

CONCLUSION

The agile-AI integration framework requires intentional educational design preparing students as innovation drivers while establishing partnership structures enabling knowledge transfer. Communication programs should systematically integrate agile methodologies into course structures, organizing courses around iterative approaches where students develop work incrementally with ongoing feedback (Frontczak, 1998). Exposure to generative AI must become standard rather than optional. Students need structured opportunities to experiment with AI applications, analyze strengths and limitations, and develop critical perspectives on appropriate use.(Aithal & Aithal, 2023,) Extensive hands-on experience positions students as innovators who enter the workforce with technical expertise enabling them to function as credible change agents.

Implications for Marcom Education and Organizational Practice

Educational programs should structure experiential learning around integrated components: authentic client work involving innovation adoption challenges, explicit instruction in diffusion theory and related frameworks, structured exposure to professional practice through agency partnerships, and reflective analysis examining experiences through theoretical lenses. The case study validated this integration, demonstrating that students need technical competency, professional context, theoretical frameworks, and practical experience facilitating adoption to function effectively as change agents.

For organizations, the framework offers a practical pathway for addressing seemingly competing demands: immediate AI integration requirements, long-term innovation capability development, workforce skill development, and competitive talent acquisition. University partnerships address all dimensions simultaneously. The convergence of agile methodologies, lifelong learning imperatives, and generative AI technologies represents both challenge and opportunity. Diffusion of innovations theory provides a comprehensive framework for understanding how these innovations spread through professional communities and what factors facilitate or impede adoption. The systematic process of preparing students as innovation drivers through agile-structured experiential learning, then leveraging their change agency capabilities in organizational contexts, creates sustainable competitive advantages for both educational institutions and organizations.

Marketing communication's future belongs to adaptable, collaborative, technologically fluent professionals who combine strategic sophistication with iterative execution and change agency capabilities. Organizations establishing sustained partnerships with these institutions gain continuous access to innovation drivers who create value beyond individual technical competence by enabling colleague success and organizational competitive advantage.

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EMBEDDING CYBERSECURITY COMPETENCES IN UNDERGRADUATE MARKETING DEGREES: A CYBOK–DIGCOMP CURRICULUM FRAMEWORK

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ABSTRACT

Digital marketing increasingly depends on data-driven platforms and cloud-based systems, exposing marketing functions to cybersecurity risks with legal, operational, and reputational consequences. Despite this relevance, cybersecurity education in undergraduate marketing degrees remains limited, particularly for non-IT students. This paper proposes a curriculum framework for integrating cybersecurity competences into marketing programs, drawing on the Cyber Security Body of Knowledge and the European Digital Competence Framework for Citizens. The framework identifies baseline competences for marketing graduates and maps them onto mandatory and elective subjects, combining cross-curricular integration with modular delivery. It enables institutions to embed cybersecurity content without structural redesign.

INTRODUCTION

The digital transformation of marketing has reshaped how organizations design campaigns, manage customer relationships, and operate across digital platforms, increasing reliance on data-driven and automated systems (Petrescu & Krishen, 2018). Core marketing activities now depend on digital infrastructures such as customer databases, e-commerce platforms, analytics tools, and cloud-based services, all of which are exposed to cybersecurity risks affecting data integrity, system availability, and organizational trust. Within the European Union, the General Data Protection Regulation (European Parliament, 2016) reinforces the importance of cybersecurity by establishing binding security and accountability obligations for organizations processing personal data, including marketing functions (Thomas, 2019).

Marketing professionals increasingly participate in decisions with direct cybersecurity implications, such as the selection and configuration of marketing technology platforms, the management of third-party service providers, and the handling of customer data across digital channels. Cybersecurity failures affecting marketing systems can result in regulatory sanctions, financial losses, and reputational damage, particularly when customer data are involved (Martin & Murphy, 2017; Vallejo-Blanxart et al., 2026). Higher education institutions are therefore expected to prepare marketing graduates to recognize cybersecurity risks and understand their organizational and legal consequences, even when technical implementation remains outside their direct responsibilities (Peltier et al., 2010).

These limitations are particularly visible in national higher education systems with decentralized curriculum design. Despite this growing relevance, cybersecurity education within business and marketing degrees remains limited. Existing educational literature predominantly targets cybersecurity specialists or IT professionals, offering frameworks and curricula aligned with workforce preparation rather than non-technical roles (Steinhagen et al., 2021). Business-oriented contributions tend to remain abstract and provide little guidance on how cybersecurity competences can be embedded into undergraduate marketing curricula. In the Spanish context, marketing degree programs lack systematic and explicit approaches to cybersecurity competence development, leaving curricular inclusion largely dependent on institutional initiative (Vallejo-Blanxart, 2025).

This paper addresses these limitations by proposing a curriculum design approach for undergraduate marketing degrees grounded in established European reference frameworks. It applies the Cyber Security Body of Knowledge (Rashid et al., 2018) to structure cybersecurity content and uses the Digital Competence Framework for Citizens (Vuorikari et al., 2022) to identify competences relevant to non-IT students, such as marketing students. The resulting framework defines a baseline set of cybersecurity competences and illustrates how they can be embedded across mandatory subjects and reinforced through modular electives.

The paper contributes a practical, standards-based reference that supports the systematic integration of cybersecurity competences into marketing degree programs without requiring structural redesign.

CYBERSECURITY FOUNDATIONS FOR MARKETING EDUCATION

CyBOK framework

The Cyber Security Body of Knowledge (CyBOK) project (Rashid et al., 2018) was developed in the UK (Europe) as a reference framework for structuring cybersecurity knowledge. Unlike workforce-oriented frameworks such as NICE or ACM (both developed in the United States), CyBOK places explicit attention on human, organizational, and regulatory dimensions alongside technical topics. It adopts an interdisciplinary perspective that draws on computer science, information systems, law, and human factors, making it suitable for non-IT audiences.

CyBOK is organized into 21 knowledge areas grouped into five categories: Human, Organizational and Regulatory Aspects; Attacks and Defenses; Systems Security; Software and Platform Security; and Infrastructure Security. This structure allows selective use of cybersecurity content based on the educational context and target audience, including undergraduate business and marketing programs.

DigComp framework and digital competences

The Digital Competence Framework for Citizens (DigComp), developed by the European Commission (Vuorikari et al., 2022), defines the digital competences expected of citizens and professionals across sectors in the European Union. DigComp consists of 5 competence areas, with cybersecurity-related competences distributed across several of

them, particularly those addressing digital safety, responsible use of technologies, and protection of digital identities and systems.

DigComp functions as a reference model for curriculum development at national and institutional levels, making it suitable as a baseline expectation for non-technical graduates. Although not mandatory, it is widely used to guide the alignment of educational programs with baseline digital competence expectations. In this study, DigComp is used as an external benchmark to identify cybersecurity competences relevant to non-technical professional profiles, including marketing graduates.

Proposed analytical framework

This study applies DigComp as a filtering mechanism for the CyBOK knowledge base, following the approach proposed by Vallejo-Blanxart (2025) for business degree programs. Only those CyBOK knowledge areas that align with DigComp cybersecurity competences intended for citizens and non-IT professionals are retained. This selection reflects the scope and constraints of undergraduate marketing education.

Table 1

CyBOK Knowledge Areas covered explicitly or implicitly in DigComp framework

	CyBOK's Knowledge Areas	EC's DigComp	EC's DigComp anchor
1	Risk Management & Governance	Yes	Competence 4.1/4.2 (items 167-170)
2	Law & Regulation	Yes	Competence 3.3 (items 138-149)
3	Human Factors	Yes	Competence 2.5 (items 97-103)
4	Privacy & Online Rights	Yes	Competence 4.2 (items 174 and 175)
5	Malware & Attack Technologies	Yes	Competence 4.1 (items 168 and 170)
6	Adversarial Behaviors	Yes	Competence 4.1 (item 170)
7	Security Operations & Incident Management	Yes	Competence 4.1 (item 176)
8	Forensics		*(Not covered)*
9	Cryptography	Yes	Competence 4.1 (item 175)
10	Operating Systems & Virtualization Security	Yes	Competence 4.1 (item 168)
11	Distributed Systems Security		*(Not covered)*
12	Formal Methods for Security		*(Not covered)*

13	Authentication, Authorization & Accountability	Yes	Competence 2.6 (items 104-108)
14	Software Security		*(Not covered)*
15	Web & Mobile Security		*(Not covered)*
16	Secure Software Lifecycle		*(Not covered)*
17	Applied Cryptography		*(Not covered)*
18	Network Security	Yes	Competence 4.1 (item 169)
19	Hardware Security		*(Not covered)*
20	Cyber Physical Systems		*(Not covered)*
21	Physical Layer & Telecommunications Security		*(Not covered)*

Table 1 presents the resulting mapping, with DigComp-aligned CyBOK knowledge areas highlighted and linked to specific DigComp competence areas and items. The mapping identifies a subset of 11 CyBOK knowledge areas that define a baseline set of cybersecurity competences appropriate for marketing degree programs. These areas represent cybersecurity knowledge expected of graduates as future professionals who routinely engage with digital platforms, customer data, and technology-mediated business processes.

By narrowing the full CyBOK structure through DigComp, the framework isolates cybersecurity competences that are broadly applicable across professional roles, including marketing, while excluding highly specialized technical domains that exceed the needs of non-IT curricula. This mapping serves as the structural basis for the curriculum integration strategy developed in the following sections.

CYBERSECURITY CURRICULUM DESIGN STRATEGY

Most research on cybersecurity education in business schools has focused on specialized degree programs designed to prepare cybersecurity professionals. Studies reviewed by Vallejo-Blanxart (2025) emphasize technical content and curriculum structures aligned with workforce preparation, offering limited guidance for undergraduate programs in which cybersecurity functions as a supporting competence rather than a primary specialization. Empirical work addressing cybersecurity education in general business or marketing degrees remains scarce. Existing reviews, such as Trumbach et al. (2023), typically examine full programs or region-specific implementations, which limits their applicability to marketing curricula and leaves little consensus on how cybersecurity competences should be structured, sequenced, or distributed for non-IT students.

To address this gap, this study adopts a dual curriculum design strategy that combines cross-curricular integration with modular delivery. This design supports progressive exposure to cybersecurity concepts across the degree while preserving institutional flexibility in curriculum organization.

Cross-curricular integration

Peltier et al. (2010) argue that information protection topics in marketing education should not be isolated in a single course. Instead, they recommend repeated exposure across core subjects such as marketing fundamentals, consumer behavior, and marketing communications. Coverage varies by subject, yet students repeatedly confront cybersecurity-related issues within diverse marketing decision contexts such as data collection, segmentation, and campaign execution.

Applied to cybersecurity, this model positions secure data use, risk awareness, and responsible digital practices as standard components of marketing reasoning. Recurrent exposure across courses supports the development of professional judgment in digitally intensive marketing environments.

Modular curriculum structure

Trumbach et al. (2023) propose a modular approach to cybersecurity education based on the premise that security risks affect all organizational functions. Their framework organizes content into discrete modules addressing topics such as cyber risk, organizational responsibilities, and incident communication. Modules may be embedded within existing courses or assembled into a standalone cybersecurity subject.

This modular structure complements cross-curricular integration by allowing institutions to scale cybersecurity coverage according to program constraints. Foundational concepts can be distributed across required marketing courses, while selected modules may be offered as electives for students seeking deeper preparation. Although Trumbach et al. rely on the NICE framework, this study adopts CyBOK as a more appropriate reference for marketing education.

CYBERSECURITY COMPETENCE INTEGRATION IN MARKETING DEGREE PROGRAMS

Spain is used as an illustrative governance context within the European Union to demonstrate how the proposed framework can be operationalized within a European higher education system. In Spain, Marketing is not a regulated profession, unlike fields such as Medicine or Architecture, and there is no nationally defined list of mandatory competences for Marketing degrees. National regulations establish general structural requirements for undergraduate programs, including minimum credit thresholds, while responsibility for defining specific competences and curricular organization is delegated to individual universities and evaluated through external quality assurance processes (Ministerio de Universidades, 2021).

Within this framework, cybersecurity-related competences are not included among the mandatory basic competences defined at the national level (Ministerio de Educación, 2011) and are instead classified as domain-specific outcomes determined at the program level. When designing business and marketing degrees, universities typically rely on reference documents such as the White Paper on Economics and Business (ANECA, 2005) and subject benchmark statements issued by the Quality Assurance Agency for Higher Education (2023). However, these sources do not explicitly address cybersecurity competences.

As a result, the inclusion of cybersecurity content in Spanish Marketing curricula depends largely on institutional initiative rather than formal regulatory requirements. This governance model helps explain the uneven and limited integration of cybersecurity education in Marketing degree programs, despite the growing relevance of digital platforms, data-driven practices, and technology-related risks in contemporary marketing practice.

Cybersecurity in Mandatory Subjects

CyBOK knowledge areas mapped in Table 1 are used as conceptual blocks to integrate cybersecurity competences across mandatory Marketing subjects, following a cross-curricular approach (Peltier et al., 2010). Because Marketing degrees in Spain do not follow standardized subject structures, this method supports consistent exposure to cybersecurity content while allowing institutional flexibility. The official Marketing degree at Universitat Rovira i Virgili (2021) (URV) is used to illustrate how the mapping can be applied to concrete subjects.

Organizational and Legal Foundations:

Risk Management and Governance (CyBOK KA #1). This block addresses cyber risk awareness, assessment, and response in marketing activities that depend on digital platforms and customer data. For marketing students, it supports informed decision making regarding operational risk, incident handling, and organizational accountability. Coverage is anchored in technical and e-commerce subjects and extended to general management courses.

Table 2 maps existing URV subjects to KA#1.

Table 2

Mapping of CyBOK KA #1 to existing Marketing degree subjects

Subject	Relevance	CyBOK KA #1 Focus	DigComp
Computer Science Applied to Marketing E-Commerce	This subject is the foundational technical layer. E-commerce is a high-risk environment for data breaches and fraud.	Component Security Risk Management	4.1 (167-170) 4.2

Table 3 proposes additional subjects where KA#1 concepts can be integrated. These subjects currently focus on strategy or general management but lack explicit cyber-risk content relevant to contemporary digital marketing practice.

Table 3

Proposed integration of CyBOK KA #1 into additional Marketing degree subjects

Subject	Relevance	Proposed CyBOK KA #1 Added Concepts	DigComp
Company Fundamentals	Introduces organizational structures where cyber risk affects business operations.	Cyber Risk Definition	4.1 (Understanding risks and threats)

Legal Compliance Foundations (CyBOK KA #2). This block focuses on the legal constraints shaping digital marketing activities, including data use, intellectual property, and contractual obligations. For marketers, it supports compliant campaign design and responsible use of third-party content. Coverage builds on core legal subjects and is reinforced in strategy-oriented courses.

Table 4 maps existing URV subjects to KA#2.

Table 4

Mapping of CyBOK KA #2 to existing Marketing degree subjects

Subject	Relevance	CyBOK KA #2 Focus	DigComp
Legal Regulation of the Market	This is the foundational legal module for the degree.	IP, Contracts, Consumer Law	3.3 (138, 139, 140)
Communication and Advertising	Advertising is heavily regulated regarding data usage and content ownership.	Advertising Law	3.3 (142, 149)
E-Commerce	The intersection of digital transactions and data law.	Online Contracts, Trust Services	3.3 (147)

Table 5 proposes additional subjects where KA#2 concepts can be integrated. These courses currently focus on technical execution or strategy but lack the explicit legal guardrails required by modern data protection frameworks.

Table 5

Proposed integration of CyBOK KA #2 into additional Marketing degree subjects

Subject	Relevance	Proposed CyBOK KA #2 Added Concepts	DigComp
Strategic Brand Management	Brand strategy depends on proprietary assets and licensed content in digital environments.	Intellectual Property Rights	3.3 (Copyright and Licenses)

Behavioral and Ethical Dimensions:

The Human Factor (CyBOK KA #3). This block focuses on behavioral and organizational aspects of cybersecurity relevant to marketing practice, including security awareness, social engineering, and internal security culture. For marketing students, it supports responsible handling of customer data, awareness of manipulation risks, and effective internal communication in digital environments. Coverage is embedded in ethics, communication, and consumer behavior subjects.

Table 6 maps existing URV subjects to KA#3.

Table 6

M*apping of CyBOK KA #3 to existing Marketing degree subjects*

Subject	Relevance	CyBOK KA #3 Focus	DigComp
Corporate Social Responsibility and Marketing	The ethical layer of human behavior.	Stakeholder Engagement	2.5 (101, 102)(Ethics)
Business Communication	Security incidents often worsen due to poor communication.	Internal Comms / Awareness	2.5 (97-100) (Netiquette)

Table 7 proposes additional subjects where KA#3 concepts can be integrated. These subjects currently teach psychological or behavioral concepts for persuasion (marketing), but must be expanded to teach defense (cybersecurity) to close the formative risk gap.

Table 7

Proposed integration of CyBOK KA #3 into additional Marketing degree subjects

Subject	Relevance	Proposed CyBOK KA #3 Added Concepts	DigComp
Consumer Behavior I & II	Teaches persuasion psychology that parallels social engineering exploitation techniques.	Human Biases & Social Engineering	2.5 (Managing digital identity)

Data Ethics and Responsible Data Use (CyBOK KA #4). This block addresses ethical decision making in data-driven marketing, including transparency, profiling practices, and responsible use of analytics tools. For marketers, it supports trust-based customer relationships and sustainable data strategies. Coverage builds on technical marketing subjects and is reinforced in analytics-oriented courses.

Table 8 maps existing URV subjects to KA#4.

Table 8

Mapping of CyBOK KA #4 to existing Marketing degree subjects

Subject	Relevance	CyBOK KA #4 Focus	DigComp
Computer Science Applied to Marketing	The technical layer of Data Protection Controls.	Data Protection Controls	4.2 (174, 175)

Table 9 proposes additional subjects where KA#4 concepts can be integrated. These courses currently focus on data exploitation (analytics/tracking/CX) and must be balanced with data protection concepts to prevent "Formative Risk" and ensure graduates do not design non-compliant campaigns.

Table 9

Proposed integration of CyBOK KA #4 into additional Marketing degree subjects

Subject	Relevance	Proposed CyBOK KA #4 Added Concepts	DigComp
Marketing Analytics	Data collection and profiling techniques intersect directly with privacy obligations.	Privacy Engineering	4.2 (Protecting personal data)

Technical Foundations for Marketing Systems:

Privacy-Enhancing Technologies and Secure Marketing Infrastructure (CyBOK KA#5-21). This knowledge area addresses technical implementation of privacy and security principles across marketing systems. Core topics include privacy-by-design configuration in martech platforms (CRMs, email systems, analytics), pseudonymization and anonymization techniques, encryption principles, and secure data retention. For digital channels, coverage extends to web/e-commerce security, social media protection, and mobile campaign security. For marketers, this supports informed configuration of digital tools and effective collaboration with IT on secure implementations. These competences align with DigComp 4.1 (items 167–170): device protection and secure configuration.

Table 10 maps existing URV subjects to KA#5-21.

Table 10

Mapping of CyBOK KA #5-21 to existing Marketing degree subjects

Subject	Relevance	CyBOK KA #5-21 Focus	DigComp
Computer Science Applied to Marketing	The baseline for OS and Network security.	OS Hardening / Firewalls / Malware	4.2 (168, 169, 170)
E-Commerce	The practical application of cryptography and secure transactions.	Cryptography (TLS) / Payments	4.2 (175)
Databases	Database security and Access Control.	Access Control / DB Security	4.2 (176)

Table 11 proposes additional subjects where KA#5-21 concepts can be integrated. These subjects currently operate in high-risk digital environments but lack the specific "Technical Defense" and "Threat Landscape" training required to address cybersecurity risks.

Table 11

Proposed integration of CyBOK KA #5-21 into additional Marketing degree subjects

Subject	Relevance	Proposed CyBOK KA #5-21 Added Concepts	DigComp
Mobile Device Marketing	Mobile marketing channels expose users to app-based threats and digital identity risks.	Malware & Mobile Security	2.6 (Managing digital identity)

Final Degree Project. To consolidate cybersecurity competences developed across the degree, the Final Degree Project should require an explicit cybersecurity assessment covering risk awareness (KA #1), legal constraints (KA #2), human factors (KA #3), ethical data use (KA #4), and technical safeguards (KA #5–21).

Summary of Cybersecurity Competence Coverage:

Table 12 provides a consolidated view of how core cybersecurity competences are distributed across mandatory Marketing subjects using the CyBOK knowledge areas as reference blocks. Integration Mode indicates whether cybersecurity competences are addressed at a baseline level within existing subjects ('Embedded') or require additional reinforcement beyond core coverage ('Embedded + extended'), based on the mappings presented in Tables 2–11.

Table 12

Summary of cybersecurity competence integration in mandatory Marketing subjects

CyBOK Block	Focus for Marketing Education	Integration Mode	Representative Mandatory Subjects
KA #1	Cyber risk awareness and response	Embedded + extended	Computer Science Applied to Marketing, E-Commerce
KA #2	Legal and contractual constraints	Embedded	Legal Regulation of the Market
KA #3	Human and organizational behavior	Embedded	Consumer Behavior, CSR
KA #4	Ethical and responsible data use	Embedded + extended	Marketing Analytics
KA #5–21	Technical safeguards in digital systems	Embedded	Databases, E-Commerce

Cybersecurity in Elective Subjects

Building on the modular curriculum approach proposed by Trumbach et al. (2023), this study recommends the inclusion of an elective cybersecurity course for Marketing students seeking deeper technical and applied preparation. While mandatory subjects provide baseline cybersecurity competences, electives allow interested students to develop advanced skills relevant to marketing technology, analytics, and digitally intensive roles. This elective is proposed as optional and institution-dependent.

Advanced Security Technologies for Marketing Systems. This elective focuses on advanced technical cybersecurity topics drawn primarily from CyBOK knowledge areas 5-21, with emphasis on their application in marketing environments. Students develop applied competences in secure system configuration, data protection techniques, encryption principles, cookieless tracking architectures, and risk-aware use of marketing technology platforms (Vallejo-Blanxart et al., 2026). The course supports effective collaboration between marketing and IT functions, enabling graduates to assess security implications of marketing tools and contribute to secure design choices in data-driven marketing Systems.

CONCLUSION

This paper proposes a structured approach to integrating cybersecurity competences into undergraduate Marketing degrees by aligning CyBOK knowledge areas with DigComp expectations for non-IT professionals. The framework defines a realistic baseline of competences and illustrates how they can be embedded across mandatory subjects and reinforced through electives. By combining cross-curricular integration with modular design, the proposal offers a practical path for addressing regulatory, ethical, human, and technical risks in digital marketing practice. Future research should empirically assess learning outcomes and faculty adoption across institutions and national contexts.

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FROM ORDERING FOOD TO FINDING BELONGING: ACCULTURATION AS MICRO-NEGOTIATION IN THE MARKETPLACE

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EXTENDED ABSTRACT

Acculturation has long been central to international and multicultural marketing research, yet it is still too often treated as a stable outcome or consumer profile rather than an unfolding lived process. Much of the existing literature helps explain what immigrants buy, what media they consume, or where they fall on assimilation, integration, separation, or marginalization dimension (Berry, 1980, 1997). Far less is known about how acculturation is actually lived in the marketplace through routine service encounters, family decisions, digital platform use, and everyday acts of consumption (Akaka et al., 2015; Holmqvist et al., 2020; Peñaloza, 1994). This omission matters because these ordinary episodes are often where immigrants test whether they are safe, recognized, respected, and able to participate fully in host-country systems.

This research examines how first-generation Chinese immigrants in the United States negotiate identity, safety, and agency through everyday consumption and service experiences. The paper introduces the concept of acculturative micro-negotiations, defined as the moment-to-moment linguistic, emotional, economic, digital, and relational adjustments immigrants make to manage vulnerability, preserve dignity, and construct belonging. Rather than conceptualizing acculturation as a fixed cultural orientation, this study treats it as a dynamic and bidirectional process in which marketplace experiences shape immigrants' evolving identities while immigrants' acculturative orientations also shape their evaluations, choices, and participation within the marketplace (Holmqvist et al., 2020; van der Zee and Oudenhoven, 2022).

The study uses a qualitative, interpretive design guided by the Gioia methodology (Gioia et al., 2013). Seven first-generation Chinese immigrants living in the United States participated in in-depth semi-structured interviews. Participants represented varied occupations and family situations, but all had resided in the United States for at least ten years and regularly engaged with American service and consumption environments. Interviews focused on experiences with restaurants, retail, education, healthcare, financial decisions, digital platforms, home aesthetics, and family role negotiation. Data were coded inductively from first-order informant terms to second-order concepts and then to aggregate dimensions, allowing the development of a process-oriented conceptual model.

Findings show that acculturation unfolds through recurring marketplace episodes rather than through a single linear path. Participants described service encounters as

diagnostic moments in which they assessed whether they would be misrecognized, dismissed, or respected. Language anxiety emerged as a key source of vulnerability, with some participants avoiding complaint, remaining silent, or delegating speech to children in order to reduce embarrassment and maintain face. At the same time, marketplace participation also served as a mechanism for agency and identity construction. Participants expressed belonging through choices such as adopting "modern" American home aesthetics, celebrating selected American holidays, or redefining family decision roles in ways that reflected new forms of autonomy.

Several additional themes emerged. First, economic pragmatism functioned as both a financial strategy and an emotional safety mechanism. Saving, bargain-seeking, debt avoidance, and convenience tradeoffs were not merely economic preferences; they were ways of creating predictability and control in unfamiliar systems. Second, gender and family roles were frequently renegotiated through consumption decisions, especially in financial management, educational investment, and high-stakes service interactions. Third, digital platforms such as WeChat, Amazon, and Instacart operated as acculturative infrastructures by reducing linguistic friction, supporting transnational continuity, and enabling lower-risk participation in host-country markets. Across these domains, participants moved fluidly between heritage and host cultural frames, revealing acculturation as situational, adaptive, and emotionally mediated.

This research contributes to international marketing in three ways. Theoretically, it reframes acculturation as a dynamic process of marketplace negotiation rather than a static category. Conceptually, it introduces acculturative micro-negotiations as a new mechanism linking service experiences, consumer identity work, and broader acculturative trajectories. Practically, it highlights hidden sources of friction for immigrant consumers and suggests that firms, schools, service organizations, and digital platforms should design for psychological safety, cultural recognition, and flexible participation rather than assuming that access alone equals inclusion.

The study also offers implications for future international marketing research. Acculturation should be examined as an episodic and context-sensitive process that unfolds across service systems, domestic spaces, and digitally mediated environments. Comparative work across immigrant groups, national contexts, and stages of migration would help determine whether these micro-negotiations are culturally specific or more broadly generalizable. Overall, the paper argues that the marketplace is not simply where immigrants adapt to a new culture; it is where they actively negotiate who they are, how they belong, and how they move between cultures in everyday life.

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FROM DISPLAY DESIGN TO ADOPTION: FLOW-MEDIATED PATHWAYS TO VIRTUAL REALITY USE IN MUSEUMS

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ABSTRACT

Virtual reality (VR) is increasingly adopted by museums to enhance visitor engagement, yet the drivers that transform initial interest into intentions to use VR remain unclear. Using survey data from 254 visitors across the PIOP Museum Network in Greece, this study examines how VR Display Quality, System Quality, Information Quality, and Aesthetic Quality influence intention to use VR, with Flow as a mediating mechanism and VR familiarity as a potential moderator. Flow strongly predicts intention and partially mediates the effect of display quality, while familiarity shows no moderating role. The model explains 46.6% of intention variance and offers implications for designing accessible, high-fidelity museum VR experiences.

INTRODUCTION

Museums increasingly deploy immersive technologies to deepen interpretation, widen access, and create memorable experiences that complement, extend, or even substitute for encounters with physical artefacts. From headset-based reconstructions to room-scale interactive installations and browser-delivered virtual tours, VR allows curators to layer narrative, spatial context, and sensory cues onto collections in ways that static displays cannot. For audiences, the promise is both cognitive (clearer understanding, perspective-taking) and affective (a sense of presence, wonder, and play). For institutions, the promise is strategic: new reach, new segments, and new reasons to return. Yet moving from promise to practice depends on a deceptively simple behavioral outcome: visitors' intention to use VR when it is available.

Literature has advanced several complementary explanations for that intention. Technology-acceptance perspectives emphasize cognitive appraisals such as perceived usefulness and ease of use: visitors are more likely to adopt VR when it is clear, smooth, and helpful to their goals. Experience-centric perspectives emphasize hedonic drivers and the quality of the experience itself, often operationalized through Flow, a state of deep absorption and enjoyment defined by focused attention, time distortion, and intrinsic reward. A third perspective, common in services and consumer behavior, unites these by specifying how stimuli in the environment (how information is presented, how reliable and responsive the system seems, how coherent and pleasing the visuals are) shape organismic states such as Flow, which then drive responses such as intention. This Stimulus-Organism-Response (S-O-R) lens is suited to museum settings, where the exhibit-as-environment is composed of multiple cues that jointly scaffold meaning and emotion.

Despite conceptual convergence, evidence remains fragmented. Experimental work in museum VR demonstrates that immersive presentation can increase presence and elicit greater Flow relative to photographic displays. Field studies show that perceived display quality, clarity, and responsiveness matter for satisfaction and continued use. Meanwhile, research in tourism marketing indicates that VR previews are effective at shaping behavioral intent in rich, engagement-based contexts. Two gaps continue for curators and designers who must decide what to prioritize. First, the balance between a direct appraisal route (from display quality to intention) and an indirect experiential route (via Flow) is rarely modelled and tested in the same analysis outside laboratory settings. Second, little is known about when visitor familiarity with VR strengthens or weakens these pathways in cultural-heritage contexts, an important boundary condition for inclusive design.

Dealing with these gaps, we analyze data from 254 visitors who experienced VR within the context of a national museum network. We model VR Display Quality (VDQ) - the perceived immersiveness, clarity, interactivity, realism, engagement, and general appeal of the VR presentation - alongside Information Quality, System Quality, and Aesthetic Quality as stimuli; Flow as the organismic state; and intention to use VR as the response. We suggest and test a dual-pathway account in which VDQ influences intention both directly (an appraisal route consistent with technology-acceptance logic) and indirectly via Flow (an experiential route consistent with S-O-R and Flow Theory). We further examine whether familiarity with VR moderates these relationships. The contribution is twofold: a field-based, integrative test that reconciles experiential and utilitarian routes to intention; and effective guidance for museum VR design that prioritizes the cues most likely to lift Flow and intention without assuming high prior familiarity among visitors.

THEORY, CONCEPTUAL BACKGROUND AND HYPOTHESES

Under S-O-R, environmental indicators are proximal drivers of inner states that shape behavior. In a VR-enabled exhibition, cues span content attributes (Information Quality), technical performance (System Quality), sensory form (Aesthetic Quality), and the overall experiential gestalt captured by VDQ. Flow Theory explains why these cues matter: when challenge and skill are balanced, and feedback is immediate, visitors are more likely to experience absorption, enjoyment, and time distortion - conditions under which exploratory behavior and positive intention flourish. Integrating S-O-R with technology-acceptance logic implies two complementary routes from display features to intention: a direct appraisal route via clarity, usefulness, and ease; and an indirect experiential route via Flow. The following hypotheses operate on this logic.

Immersive VR Display Quality (VDQ) provides richer sensory input, natural interaction, and responsive feedback, creating conditions for Flow—focused attention, perceived control, and time distortion, predicted by Flow Theory when challenge and skill are balanced with immediate feedback (Csikszentmihalyi, 1990; Nakamura & Csikszentmihalyi, 2009). In museum contexts, immersive display methods are associated with stronger presence and absorption than non-immersive alternatives, indicating that higher VDQ should elevate Flow (Wang et al., 2024). Evidence from related engagement settings further shows that visual/aesthetic coherence and interaction density are linked to Flow and sustained engagement (Jo & Park, 2023; Zhang & Abd Rahman, 2022). Therefore, we can state that:

Additional literature supports these mechanisms (Ai et al., 2025; Al Khalifa et al., 2025; Albrezzi, 2024; Alexandrovsky et al., 2020; Aouad et al., 2025; Ariya et al., 2025; Avlonitou et al., 2024; Baroin, 2024). Further studies in museum and adjacent contexts corroborate these patterns (Bruni et al., 2025; Chang et al., 2025; Csikszentmihalyi, 1997; Dai et al., 2025; DeLone et al., 1992; Gao et al., 2025; He et al., 2025; Jangra et al., 2025). Related research on design, space, and evaluation is consistent with our framework (Ortiz et al., 2025; Piccardi et al., 2025; Rivera-Trigueros, 2022; Runnel et al., 2021; Sangamuang et al., 2025; Shi et al., 2025; Sinha et al., 2025; Sylaiou et al., 2019). Related research on design, space, and evaluation is consistent with our framework (Wang et al., 2025; Xu et al., 2025). Therefore, we can state that:

H1: VR display quality positively influences flow experience.

Beyond Flow, technology-acceptance perspectives show a direct appraisal route from VDQ to intention through perceived usefulness, clarity, and ease of use (Davis, 1989; DeLone & McLean, 2003). In museum tourism, display methods (e.g., immersive VR versus photographs) are positively associated with intentions to use VR, supporting a direct VDQ on the Intention path that coexists with the experiential route via Flow (Wang et al., 2024). Therefore, we can state that:

H2: VR display quality positively influences intention to use VR.

Concise, accurate, and context-aware information reduces cognitive load and uncertainty, enabling absorption and enjoyment—key Flow signals (DeLone & McLean, 2003). Empirical work shows that information richness facilitates mental imagery and lowers cognitive load, which are Flow antecedents (Guo et al., 2025), while museum and hospitality studies underline the value of clear, well-timed interpretive content for engagement (Li et al., 2024). Thus, information Quality is expected to raise flow:

H3: Information quality positively influences flow experience.

System Quality (reliability, responsiveness, and ease of use) prevents presence breaks and self-consciousness, supporting immersion and Flow (DeLone & McLean, 2003). In applied cultural-heritage contexts, dependable and usable mixed-reality systems improve visitor experience (Hammady et al., 2021), while resilient platform studies show that responsive systems promote entry into Flow and sustained engagement (Li et al., 2025; Nguyen, 2025). Hence, higher system quality should increase flow:

H4: System quality positively influences flow experience.

Aesthetic Quality (visual coherence, harmony, and sensory appeal) shapes affect and attention, antecedents of Flow in experience-centric media (Jo & Park, 2023). Empirical findings across arts and interactive media show that aesthetic attractiveness strengthens immersion and flow-like states (Lee & Youn, 2025; Zhang et al., 2025). Therefore, a stronger aesthetic quality should elevate flow:

H5: Aesthetic quality positively influences flow experience.

Across experiential technologies, Flow foretells continued use, recommendation, and favorable intentions (DeMatos & Duarte, 2021; Csikszentmihalyi, 1990). In museum VR and tourism, Flow positively relates to intention to use and revisit, consistent with pathways in which hedonic immersion transforms into behavioral intention (Zhou et al., 2025; Wang et al., 2024). Thus, flow should positively influence Intention to use VR:

H6: Flow experience positively influences intention to use VR.

Integrating S–O–R with technology-acceptance logic implies dual routes: an experiential route via Flow and a direct appraisal route via perceived usefulness/clarity/ease (DeLone & McLean, 2003; Davis, 1989). Museum evidence finds display effects on intention with Flow as an intervening mechanism, typically partial mediation, consistent with real exhibits where users assess both "does it work?" and "does it move?" (Wang et al., 2024; Jo & Park, 2023). Therefore, Flow is expected to partially mediate the relationship between VDQ and intention:

H7: Flow experience partially mediates the effect of VR display quality on intention to use VR.

Familiarity with VR may shape how display cues translate into flow. Prior work shows that prior experience can alter presence and immersive responses (Sagnier et al., 2019) and that designing for experience can improve outcomes, particularly for older adults (Lu et al., 2025). Moreover, fostering acquaintance can boost presence and engagement (Yang & Xiao, 2024). Hence, familiarity may moderate the VR display quality and flow association, strengthening or dampening the effect depending on user experience:

H8: Familiarity with VR moderates the relationship between VR display quality and flow experience.

Similarly, experience can moderate the direct appraisal path from VR display quality to Intention: novices may rely more on clarity and responsiveness when forming intentions, whereas experienced users may need less support from display novelty (Li & Lv, 2024; Wang et al., 2024). The above-cited works evidence from AR/VR acceptance contexts suggests that prior comfort and perceived ease can alter intention formation, motivating a moderation test on the VR display quality and intention path:

H9: Familiarity with VR moderates the relationship between VR display quality and intention

The operational definitions of the key constructs are presented in Table 1.

Table 1

The operational definitions of the key-constructs

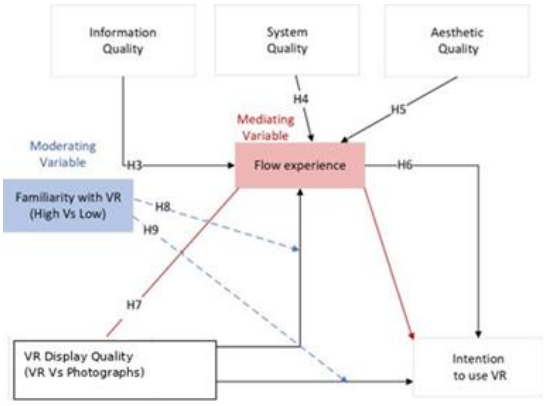
Constructs	Definitions	References
VR Display Quality	Visitors' perceived quality of the VR presentation, including immersiveness, clarity, interactivity, realism, engagement and overall presentation appeal.	Adapted from Wang et al. (2024); see also Jo & Park (2023)
Information Quality	the degree to which information meets the needs of its users in terms of accuracy, completeness, relevance, and timeliness	Hammady et al. (2021); Lin (2008)

System Quality	the degree to which a system meets the needs of its users in terms of performance, reliability, usability, and maintainability	Rivera-Trigueros (2022); Hammady et al. (2021)
Aesthetic Quality	the degree to which the visual appeal of a system or information meets the preferences and expectations of its users	Jo and Park (2023); Hammady et al. (2021)
Flow Experience	a positive affective and cognitive state characterized by deep immersion and engagement in an activity	Wang et al. (2024); DeMatos et al. (2021)
Intention to Use VR	the degree to which individuals are willing to adopt and engage with virtual reality technology, and is influenced by factors such as perceived usefulness, ease of use, and the overall user experience	Wang et al. (2024); Sánchez et al. (2021); Manis and Choi, (2019)
Familiarity with VR	the degree to which individuals have prior experience and knowledge of virtual reality environments and technologies and can influence their comfort level, ease of use, and overall engagement with VR applications	Wang et al. (2024); Yang and Xiao (2024); Alexandrovsky et al. (2020)

The research hypotheses derived from the literature review that inform the research model are presented in Figure 1.

Figure 1

Research model



METHOD

Sample and Context

We analyzed 254 valid responses from Greek museum visitors who experienced VR at the PIOP Museum Network between March 30 and April 30, 2025, via an online survey. The network comprises multiple industrial-heritage and cultural sites; respondents reported engaging with VR primarily through virtual tours and interactive stations next to physical exhibits. The sample was predominantly female (64.2%); the largest age group was 35 to 44 years (44.9%). Most held higher education (47.6%) or postgraduate qualifications (32.7%); annual income was most commonly between 10,001 and 20,000 euros (42.5%).

Because this is a field sample rather than a lab assignment, contact with specific display modes and exhibit topics varied naturally across sites. We therefore focus on perceived qualities (VR Display Quality, Information, System, Aesthetic) and their relationships with Flow and intention, acknowledging that such observational heterogeneity is a feature of the design.

Measures

All items used a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). VR Display Quality items reflected immersiveness, interactivity, realism, clarity, engagement, and overall impression. Information Quality captured accuracy, usefulness, and relevance; System Quality covered reliability, ease of use, and responsiveness or performance; Aesthetic Quality captured visual or sensory coherence and appeal. Flow measured absorption, enjoyment, and time distortion; Intention captured future use, recommendation, and willingness to pay; Familiarity captured self-reported knowledge and comfort with VR.

Data Analysis

We conducted a confirmatory factor analysis (CFA) for construct validation, then tested bivariate associations using Spearman's rho. Hypotheses were tested via regression, mediation (PROCESS Model 4; 5,000 bootstraps), and moderation (PROCESS Model 1).

We prioritized Spearman's rho to assess monotonic associations because indicators are Likert-type and several composites showed non-normality. This choice is consistent with our objective to characterize both the impact and the nature (direction and monotonicity) of the relationships among VR Display Quality (VDQ), Flow, and their antecedents, and Intention in a museum setting. For robustness, we cross-checked key conclusions with Pearson correlations; the substantive pattern of results was unchanged.

RESULTS

Measurement Model

The seven-factor CFA indicated marginal global fit, given the model's complexity and sample size (CFI = 0.880; TLI = 0.858; NFI = 0.844; RMSEA inside acceptable bounds). All standardized loadings were significant ($p < 0.001$; range 0.209-0.991), and composite reliabilities were in acceptable-to-good ranges across constructs. Convergent and

discriminant checks, along with item-pruning diagnostics, were used to confirm that the results did not hinge on any single low-loading indicator.

Descriptive Statistic

Descriptive statistics supported positive levels for the core constructs. Aesthetic Quality exhibited the highest mean (about 4.03), with Intention (about 3.86) and Information Quality (about 3.85) also above the scale midpoint; System Quality and Flow were moderate (about 3.85 and 3.71). Respondents generally endorsed VRs interactivity and realism; adoption intentions were high, though willingness to pay was more divided, suggesting sensitivity to pricing and to the distribution of value between basic access and premium layers.

Hypothesis Tests

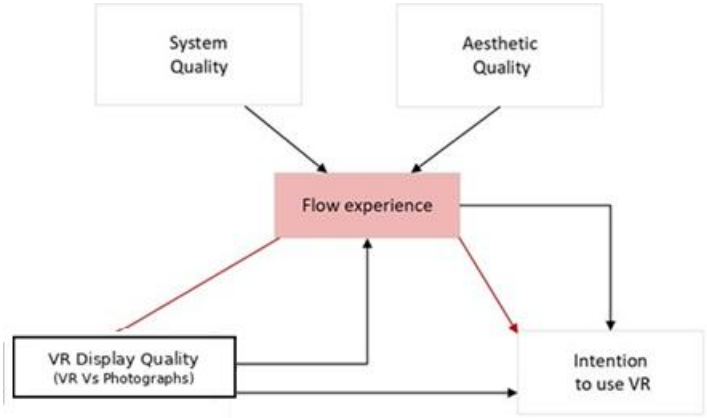
Bivariate analyses and multivariate models converged on support for H1-H6. H1 (VDQ to Flow) was positive and significant, consistent with the view that perceived display quality creates the conditions of absorption and enjoyment. H2 (VDQ to Intention) was also positive and significant, indicating that appraisal-driven effects co-exist with experiential effects. Quality dimensions predicted Flow as expected (H3-H5): Information Quality, System Quality, and Aesthetic Quality each showed positive associations with Flow, with Aesthetic Quality often the strongest in the triad. H6 (Flow to Intention) was supported; Flow exerted a sizable effect on intention after accounting for exogenous qualities, in line with the theorised hedonic route.

Mediation analysis supported H7: Flow partially mediated the VR Display Quality to Intention link, meaning the indirect effect via Flow was significant while the direct effect remained significant, consistent with a dual-pathway account in field conditions. Moderation tests for H8 and H9 did not reach significance in this dataset; the lack of moderation suggests that in this museum-network context, the combination of onboarding, interface affordances, and content design succeeded in minimizing familiarity-based disparities in outcomes.

Final Predictive Model

Figure 2

Empirically tested model with significant paths to intention



A parsimonious predictive model retained Flow (beta = 0.229, p < 0.001), VDQ (beta = 0.252, p = 0.001), System Quality (beta = 0.261, p = 0.002), and Aesthetic Quality (beta = 0.228, p = 0.001) as significant predictors of Intention, explaining 46.6% of the variance (R squared = 0.466). Information Quality, while positively related to Flow, did not add unique variance to Intention once the other qualities and Flow were present, an expected pattern when experiential and system cues dominate the final adoption decision. The explained variance indicates that display and experience factors capture a substantial portion of the decision space without overfitting the model.

DISCUSSION

This section explains how presentation features translate into visitors' intention to use museum VR. The evidence supports a dual pathway: an experiential route in which VR Display Quality (VDQ), together with information, system, and aesthetic qualities, elevates Flow; and a direct appraisal route from VR Display Quality to intention. The two operate in parallel, clarifying why execution details matter alongside content.

Theoretical and Research Implications

Integrating Stimulus Organism Response with technology acceptance logic in museum VR, the data position Flow as the proximal organismic state through which information, system, and aesthetic quality cues shape intention, while VR Display Quality (VDQ) also exerts a direct appraisal effect on intention after controlling Flow, providing evidence of partial rather than full mediation. The non-significant moderation by familiarity suggests that inclusive onboarding and accessible interface patterns can make prior VR experience non-essential for reaching Flow and forming intention, affording a useful boundary condition for theory. Methodologically, compact, field deployable measures recover the dual path structure without loss of explanatory power (R2 = 0.466), clarifying when and how experiential Flow and utilitarian appraisal mechanisms jointly drive adoption in cultural heritage VR (Wang et al., 2024; DeLone & McLean, 2003; Csikszentmihalyi, 1990; Davis, 1989).

Managerial Implications

Institutions may value presentation quality alongside content by aiming for visual and interaction coherence, low latency, responsive controls, and succinct in scene information that preserves immersion; brief onboarding and comfort options can reduce familiarity based disparities, while treating narrative pacing and interaction rhythm as adjustable levers aligns moments of agency alongside moments of explanation to sustain Flow; finally, lightweight analytics (for example, dwell time and interaction cadence) and short in context prompts can surface attention drop offs and guide iteration, with premium layers positioned after a satisfying core experience (Wang et al., 2024; Jo & Park, 2023).

Limitations and Future Research

The study relies on a single museum network and self-reported outcomes, which constrains causal identification of specific design choices and limits generalizability. Subsequent studies might combine the current measurement model with within-site experiments that manipulate presentation modes and narrative pacing, incorporate behavioral outcomes such as repeat visits and station-level dwell time, and test credibility and personalization cues (for example, curator voice, provenance badges, adaptive difficulty) to examine how trust and individual fit shape Flow and intention (Li & Lv, 2024; Wang et al., 2024; DeMatos & Duarte, 2021). Cross-cultural replications and long-term studies can then assess generalizability across curatorial traditions and technology baselines and determine whether Flow's influence on intention persists as novelty fades (Li & Lv, 2024; Wang et al., 2024; DeMatos & Duarte, 2021).

CONCLUSION

This study shows that museum VR adoption is driven by two complementary routes: an experiential path, in which VR Display Quality (VDQ), together with information, system, and aesthetic qualities, elevates Flow; and a direct appraisal path from VDQ to intention. Using field data from 254 visitors, we find that Flow substantially predicts intention and partially mediates the VDQ-intention link, while VDQ, system, and aesthetic qualities retain direct effects in the final model (R-squared = 0.466). Practically, the results prioritize visual and interaction coherence, low latency and responsive controls, and succinct in-scene information; brief onboarding and comfort options help novices reach Flow, consistent with the non-significant moderation by familiarity. Conceptually, the findings integrate Stimulus-Organism-Response and technology-acceptance perspectives, showing that hedonic immersion and cognitive appraisal operate together in cultural-heritage VR. Future work needs to pair field measurements with targeted experiments on presentation modes and narrative pacing, incorporate behavioral outcomes such as dwell time and repeat use, and test credibility and personalization cues across audiences and settings.

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DESIGNING MEANINGFUL MARKETING MANAGEMENT ASSIGNMENTS IN THE AGE OF GENERATIVE AI

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ABSTRACT

The rapid diffusion of generative artificial intelligence (AI) tools has disrupted assessment practices across higher education, particularly in applied disciplines such as marketing management. As AI systems increasingly replicate traditional student deliverables, marketing management educators face growing concerns related to academic integrity, assessment validity, and the meaningful evaluation of student learning. This paper reviews AI, assessment design, and experiential learning in higher education. Five pedagogically salient assignment design strategies are identified that can potentially reduce AI substitutability while enhancing learning outcomes: contextualization, personalization, process transparency, experiential integration, and metacognitive reflection. (Dwivedi et al., 2023; Kasneci et al., 2023).

INTRODUCTION

Marketing management courses are designed to prepare students for managerial decision-making in complex and dynamic market environments. Unlike theory-dominant courses, marketing management emphasizes applied analysis, strategic judgment, ethical reasoning, and contextual problem solving. Assessment in these courses typically relies on written deliverables such as marketing plans, case analyses, consulting reports, and campaign evaluations.

The emergence of generative artificial intelligence (AI) has introduced a pedagogical challenge that is particularly problematic in marketing management education. AI systems can now generate fluent, well-structured, and theoretically grounded marketing analyses with minimal prompting, raising concerns about whether traditional assignments still measure student learning or managerial reasoning.

Institutional responses have often emphasized detection technologies or restrictive policies. However, research on academic integrity suggests that deterrence-based approaches alone are insufficient. Increasingly, educators are exploring AI-proof assignment design by utilizing assessments structured so that meaningful completion requires judgment, engagement, and reflective reasoning. (Bretag et al., 2019; Eaton, 2023).

LITERATURE REVIEW

The rapid advancement in the use of generative artificial intelligence (AI), has resulted in significant challenges to assessment practices across higher education. Generative AI systems are capable of producing coherent, discipline-specific written outputs that

approximate or exceed the quality of typical undergraduate and graduate submissions (Dwivedi et al., 2023; Kasneci et al., 2023). As a result, traditional assessment formats, such as written essays, reports, and case analyses, are increasingly vulnerable to the use of AI by students.

Scholars have emphasized that generative AI does not merely facilitate academic misconduct but fundamentally alters the relationship between student effort and observable performance (Eaton, 2023). When assessment outputs can be generated independently of cognitive engagement, instructors risk evaluating proficiency of the AI rather than student learning and comprehension. This is especially concerning in applied business disciplines such as marketing management, where strategic reasoning, judgment, and ethical decision-making are core learning objectives.

Early institutional responses to AI have focused heavily on detection technologies and restrictive policies. However, research on academic integrity consistently demonstrates that deterrence-based approaches alone are insufficient and may undermine trust and learning (Bretag et al., 2019). Instead, assessment design has emerged as a critical mechanism for shaping ethical behavior and meaningful engagement. Assignments perceived as authentic, relevant, and professionally meaningful are less likely to invite misconduct and more likely to promote learning.

Within marketing education, this insight is consistent with long-standing criticisms of overly standardized or formulaic assessments. Marketing educators have argued that assignments disconnected from real managerial contexts fail to capture the complexity of marketing decision-making and limit student engagement (Peltier et al., 2018; Schlee & Harich, 2014). Generative AI amplifies this problem by making generic assessments easier to complete without genuine understanding.

Experiential learning theory provides a foundational lens for understanding how assessment design can remain meaningful in AI-augmented classrooms. Kolb's (1984) experiential learning model emphasizes learning through concrete experience, reflective observation, abstract conceptualization, and active experimentation. Marketing management pedagogy has long embraced experiential approaches. Live client projects, simulations, and applied research are often utilized because they require students to engage with uncertainty, context, and critical thinking (Lumpkin et al., 2015).

Empirical research in marketing education supports the effectiveness of experiential and applied learning. Previous studies demonstrate that experiential assignments enhance student engagement, improve learning transfer, and better prepare students for professional practice (Peltier et al., 2018; Schlee & Harich, 2014). Importantly, these assignments are inherently resistant to automation because they rely on lived experience, contextual interpretation, and iterative decision-making.

Reflection and metacognition further strengthen the pedagogical value and integrity of experiential assignments. Formative assessment research emphasizes that reflective activities promote self-regulated learning and deeper understanding by requiring students to articulate not only what decisions were made, but why those decisions were appropriate in a given context (Nicol & Macfarlane-Dick, 2006). In marketing management education, reflective components support the development of managerial judgment, ethical reasoning, and professional identity.

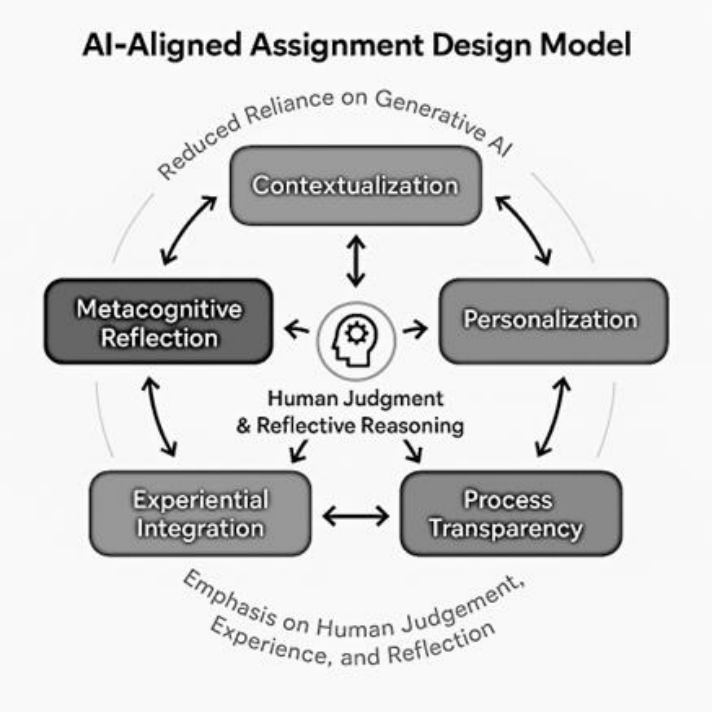
Recent pedagogy literature increasingly frames AI not as a threat to learning, but as a catalyst for reassessing what assessments are intended to measure. Recent scholarship increasingly emphasizes transparent and bounded uses of AI that support learning without replacing student cognition. (Mollick & Mollick, 2023). Within this framing, AI-proof assignment design does not prohibit AI outright but renders inappropriate substitution ineffective.

Taken together, this literature suggests that AI-proof assignment design is best understood as a conceptual and pedagogical response rather than a technological solution. By emphasizing contextual specificity, experiential engagement, process transparency, and reflective reasoning, marketing management educators can design assessments that align with professional practice while preserving academic integrity in AI-enabled learning environments.

Five interrelated assignment design strategies emerged: contextualization, personalization, process transparency, experiential integration, and metacognitive reflection.

Figure 1

A Framework for Marketing Management Education



These strategies are not intended as a rigid linear sequence, but rather as flexible, reinforcing design principles. In practice, instructors may emphasize different strategies depending on course level, learning objectives, and institutional context. Collectively, however, they shift assessment emphasis from polished outputs to visible managerial reasoning and learning processes.

Contextualization involves grounding assignments in specific organizational, geographic, or temporal contexts. Such assignments require original insight tied to lived or localized conditions rather than abstract scenarios. For example, a marketing plan focused on a local nonprofit organization, a regional retail chain, or a current industry disruption requires insights that generic AI-generated responses cannot credibly supply without direct engagement. Importantly, contextualization differs from personalization in that it emphasizes external situational constraints, not individual student identity.

Personalization integrates students' experiences, values, or professional aspirations into assessment tasks. Personal meaning-making increases cognitive engagement and limits generic AI-generated responses. For example, students may be asked to justify strategic decisions based on their intended career path (e.g., brand management vs. analytics) or to reflect on how their values influenced campaign recommendations.

Process Transparency shifts assessment emphasis from final deliverables to learning processes. Drafts, decision logs, and rationale memos make managerial reasoning visible. In marketing management courses, this may include draft submissions, strategic rationale memos, analytics interpretation logs, or peer-feedback iterations within a marketing plan project.

Experiential Integration incorporates direct engagement with real or simulated market environments through interviews, observations, simulations, or client work. Examples include live client consulting projects, customer interviews, social media analytics dashboards, A/B testing simulations, or observational brand audits.

Metacognitive Reflection requires students to articulate how and why decisions were made, supporting learning transfer and ethical reasoning. For example, a campaign post-mortem might ask students to evaluate what strategic assumptions failed and how they would revise their approach.

Collectively, these strategies shift assessment emphasis from polished outputs to managerial reasoning and learning processes. Tables 1 and 2 provide examples for assignments and how AI can be utilized.

Table 1

AI-Proof Assignment Examples for Marketing Management Courses

Assignment Type	Course Level	Design Features	Learning Emphasis
Local Market Analysis	Undergraduate	Field engagement	Situational analysis
Process-Based Marketing Plan	UG/MBA	Drafts and rationales	Strategic judgment
Live Client Project	UG/MBA	Client constraints	Applied problem solving
Experiential Brand Audit	Undergraduate	Observation	Brand evaluation
Campaign Post-Mortem	Digital Marketing	Performance analysis	Adaptive learning

Table 2

AI-Permitted vs. AI-Prohibited Assignment Components

Component	AI-Permitted	AI-Prohibited
Idea Generation	Brainstorming	Final ideas
Writing Support	Grammar edits	Writing sections
Strategic Decisions	Exploring options	Final recommendations
Reflection	Prompt generation	Reflective content
Experiential Data	Question drafting	Fabrication

DISCUSSION

From a pedagogical perspective, AI-proof assignments function less as enforcement mechanisms and more as qualitative assessment designs, that prioritize meaning-making, judgment, and reflection. Across the literature, instructors emphasize assignments that make learning visible rather than polished outputs. Rather than rendering marketing management assessment obsolete, generative AI clarifies which competencies matter most. When assessments emphasize context, experience, and reflective judgment, AI becomes a bounded support tool rather than a substitute for learning.

This synthesis suggests that AI has not rendered marketing management assessment obsolete; rather, it has clarified which aspects of learning matter most. When assignments emphasize context, experience, and reflection, AI becomes a peripheral support tool rather than a substitute for learning. For marketing management educators, AI-proof assignment design requires a shift toward qualitative evaluation of learning processes. Assignments should mirror how marketing decisions are made in practice, emphasizing ambiguity, iteration, and ethical consideration.

LIMITATIONS AND FUTURE RESEARCH

As a conceptual qualitative synthesis, this study does not claim exhaustive coverage of all AI-related pedagogy literature. Future research should extend this work through classroom-based qualitative studies examining instructor implementation, student perceptions, and learning outcomes associated with AI-proof assignment design.

CONCLUSION

Generative AI represents a permanent shift in marketing education. This manuscript demonstrates that thoughtfully designed AI-proof assignments preserve assessment integrity while strengthening experiential learning and managerial reasoning. For marketing management educators, AI-proof design offers a pedagogically grounded and sustainable response to AI-enabled classrooms. By integrating contextualization, personalization, process transparency, experiential engagement, and metacognitive reflection, marketing management educators can design assignments that preserve assessment integrity while enhancing professional relevance. Rather than resisting AI, this framework positions

thoughtful assessment design as a sustainable pedagogical response to AI-enabled learning environments.

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AN INTEGRATED MODEL OF CONSUMPTION VALUE, INTERACTIVITY, AND TECHNOLOGY ACCEPTANCE IN AR RETAIL TO CLOSE THE IMAGINATION GAP

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ABSTRACT

We ran a study on how AR helps online shoppers see products more clearly. Using data from 216 people who use AR, we tested relationships among shopping intentions, five types of value people derive from consumption, and the interactive experience of AR, highlighting the roles of mental imagery and perceived usefulness. Our results show that AR works best when people find it useful and when it helps them imagine the product clearly. Retailers can make AR shopping tools more attractive by emphasizing both utility and creativity.

INTRODUCTION

AR narrows the retail "imagination gap" by placing products in realistic contexts, enhancing shoppers' visualization and trust (Hilken et al., 2023; Hilken et al., 2022). With U.S. retail sales totaling $890 billion in 2024 (16.9%), the lack of physical interaction in e-commerce fuels uncertainty and high return rates (e.g., NRF & Happy Returns, 2024; Jiang et al., 2024; Shaban et al., 2024), AR helps people feel more confident and positive when shopping, and it makes products seem like a better match and creates a stronger connection feeling, which nudges shoppers toward buying, especially for big or high-risk purchases (e.g., Fan et al., 2025). Additional market data suggests that AR can reduce returns if adoption and implementation costs are properly controlled (Hou et al., 2024).

AR technology lets customers interact with virtual products in their own environments by blending digital information with the real world (Rauschnabel et al., 2019). The degree of personalization provided by tools such as virtual clothing try-ons and furniture placement apps is unmatched by traditional retail (McLean & Wilson, 2019). However, because many retailers are unsure of how augmented reality adds value or influences consumer behavior, adoption is uneven (Kumar & Srivastava, 2022).

Global mobile AR users are projected to reach about 1.03 billion in 2024 and 1.07 billion in 2025, signaling rapid expansion. In Europe, the AR retail market is expected to grow at roughly 32% per year from 2025 to 2033 (ARtillery Intelligence via Statista, 2025; Grand View Research, 2024). Less than 25% of online shoppers reported that AR affected their purchasing decisions, according to a 2022 survey (Statista, 2023), suggesting that further research is needed to determine what motivates customers to use AR in retail.

The literature on AR adoption includes experiential value frameworks (Babin et al., 1994), technology acceptance (Venkatesh & Davis, 2000; Davis, 1989), and behavioral

responses to AR (Qin et al., 2021). Nevertheless, a few integrated models link the constructs of acceptance, perceived interactivity, and consumption value. Furthermore, empirical evidence on whether perceived usefulness and mental imagery mediate the relationship between AR features and consumer behavior in retail is limited (Park & Yoo, 2020).

To address these gaps, we test a model that combines the Technology Acceptance Model (TAM), Consumption Value Theory (CVT), and Perceived Interactivity to explain how AR helps close the imagination gap in retail. We look at how mental imagery, attitudes toward AR, perceived usefulness, and the intention to use AR are shaped by perceived interactivity and five types of consumption value. Using confirmatory factor analysis, polynomial regression, and mediation analysis, we show how these factors are connected and offer practical advice for retail marketing managers looking to improve AR strategies.

THEORY, CONCEPTUAL BACKGROUND AND HYPOTHESES

CVT proposes that choice reflects multiple value dimensions (Sheth et al., 1991). In AR retail, virtual content unites these values in the shopping experience (Hilken et al., 2018). Hedonic value from interactivity, immersion, flow, and presence is boosted by vividness, novelty, and virtual try-on, improving enjoyment, diagnosticity, and attitudes (e.g., Attri et al., 2024; Tom Dieck et al., 2023; Yoo, 2023). Meta-analytic work finds that emotional/hedonic value strongly predicts responses (Mason et al., 2023). Enjoyment increases perceived usefulness, and telepresence elevates hedonic and utilitarian value (e.g., Kwok et al., 2024; Yoo, 2023). Therefore, we can state that:

H1: Hedonic value positively influences the perceived usefulness of AR in retail.

Convenience value in AR retail reflects time and effort savings from information-rich overlays, virtual try-ons, and real-time visualization, reducing uncertainty, mental effort, and the need for store visits. According to studies conducted in 2025, users tend to perceive AR apps as informative and user-friendly, leading to increased diagnosticity and behavioral intention. This correlation aligns with the perceived utility of TAM (Micheletto et al., 2025; Liang et al., 2025). In line with Gary et al. (2025), the dual-path SOR analysis also shows that information richness has the biggest technical impact, supporting the idea of usefulness. In AR shopping contexts, UTAUT2 links convenience and perceived usefulness, and it also identifies links among performance expectancy, intention, and trust (Anand & Sheena, 2025). Thus, we can state that:

H2: Convenience value positively influences the perceived usefulness of AR in retail.

Monetary value encompasses cost–benefit perceptions and includes AR's time-saving and decision-support benefits, in accordance with perceived utility constructs (Xu & Ling, 2025; Davis, 1989). Mobile AR applications affect both cognitive evaluations and affective reactions, with perceived value immediately impacting behavioral intentions (Lai et al., 2025). Therefore, we can state that:

H3: Monetary value positively influences the perceived usefulness of AR in retail.

Informational value is the usefulness of AR-delivered product information (Javornik, 2016). AR's interactive visuals and scenario replication diminish cognitive effort and support purchase decisions (Kowalczuk et al., 2021). High-quality, contextual AR content increases consumer involvement and perceived usefulness (Fan et al., 2025). Therefore, we can state that:

H4: Informational value positively influences the perceived usefulness of AR in retail.

Social value in AR stems from communication and relationships that foster acceptance, status, and community (Sheth et al., 1991). Point-of-view sharing in social AR enables users to increase purchase intention and advocacy (Do et al., 2025), while AR apps heighten engagement and visual appeal, making social interactions appear more useful (Do et al., 2020). AR-enabled browsing strengthens self–brand connections (Jun, 2025), and meta-analytic retail AR/VR evidence links experiential components to favorable attitudes and intentions, consistent with social–relational value pathways which improve perceived usefulness (Fan et al., 2025). Thus, we can state that:

H5: Social value positively influences the perceived usefulness of AR in retail.

Previous experience with AR strongly affects perceived usefulness and perceived ease of use (Amores-Valencia et al., 2025; Ayaichi et al., 2025; Bonnin, 2020). Familiarity with AR reduces perceived risks and enhances patronage intentions, with experienced users better appreciating technology capabilities. Research has demonstrated that AR features such as interactivity and vividness contribute towards perceived ease of use, with prior experience enabling smoother user experiences (Tran & Khoa, 2025; Jung et al., 2020). Therefore, we can state that:

H6: Previous experience with AR positively influences perceived usefulness, and

H7: Previous experience with AR positively influences perceived ease of use.

The Technology Acceptance Model asserts that perceived ease of use strongly affects perceived usefulness (Davis et al., 1989). In retailing, AR evidence substantiates this path: virtual fitting-room research has shown that perceived ease of use positively predicts perceived usefulness (Jiawei & Liu, 2025), while fashion VTO and retail meta-analyses grounded in TAM report that easier-to-use AR tools improve perceived utility and downstream attitudes and intentions (e.g., Fan et al., 2025). Thus, we can state that:

H8: Perceived ease of use positively influences perceived usefulness of AR.

Perceived AR interactivity, defined by real-time participation, control, instant feedback, and enjoyable engagement, makes shopping more captivating and educational, strengthening controllability/playfulness, mental imagery, attitudes, and behavioral intentions (Park & Yoo, 2020; Kim et al., 2021). It also improves ease of use and, crucially, usefulness (Kleilat et al., 2025), increasing enjoyment, confidence, purchase/reuse intentions, and decision shaping imagery (Kembau et al., 2025; Ven et al., 2025). Therefore, we can state that:

H9: Perceived interactivity positively influences perceived usefulness of AR, and

H10: Perceived interactivity positively influences mental imagery.

Mental imagery is the process of visualizing concepts, scenarios, objects, or experiences without direct sensory input (Schlosser, 2003). Recent work has shown that AR features such as lucidity and interactivity enhance imagery, informativeness, and downstream confidence in choice and purchase intentions (e.g., Kleilat et al., 2025; Ven et al., 2025). Interactive AR also improves processing fluency and decision comfort, particularly for visually oriented consumers (Park & Yoo, 2020; Heller et al., 2019). Thus, we can state that:

H11: Perceived usefulness positively influences behavioral intention toward AR;

H12: Mental imagery positively influences attitude toward AR; and

H13: Attitude toward AR positively influences behavioral intention toward AR.

Prior AR experience tends to lower perceived risk and strengthen patronage intention in digital retail, demonstrating the role of acquaintance in forming evaluations (Bonnin, 2020). Recent work has further shown that AR feature quality (especially interactivity) increases perceived ease of use and perceived usefulness, which, in turn, increases engagement and purchase intention (e.g., Kleilat et al., 2025). Complementary evidence in AR adoption models confirms the perceived ease of use–perceived usefulness–intention chain and documents higher perceived usefulness and intention among users with prior AR exposure, reinforcing perceived usefulness's mediating role in extended TAM frameworks (Ayaichi et al., 2025; Venkatesh & Davis, 2000). Therefore, we can state that:

H14: Previous experience positively influences behavioral intention toward AR through perceived usefulness.

H15: Perceived ease of use positively influences behavioral intention toward AR through perceived usefulness; and

H16: Perceived interactivity positively influences behavioral intention toward AR through perceived usefulness.

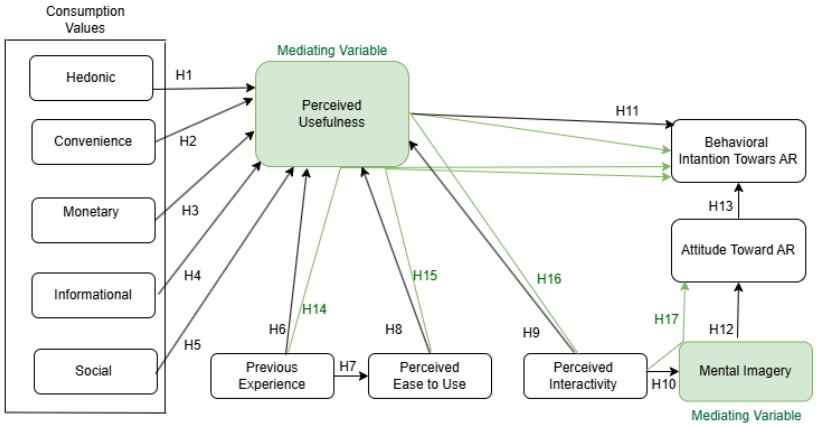
Recent examinations have shown that interactivity in immersive retail experiences catalyzes mental imagery and, through affective/experiential responses, shapes downstream evaluations and decisions. In AR decision environments, AR improves mental imagery, which, in turn, simplifies decision-making and establishes confidence (Ven et al., 2025). In parallel, playfulness positively influences attitudes toward products in AR retail contexts (Pourabedin & Biglari, 2025), reinforcing Park and Yoo's (2020) mechanism, in which controllability and playfulness stimulate mental imagery, thereby increasing attitudes and intentions. Thus, we can state that:

H17: Perceived interactivity positively influences attitude toward AR through mental imagery.

The research hypotheses derived from the literature review that inform the research model are presented in Figure 1.

Figure 1

Research model



METHODOLOGY

Research Design and Sample

Using a quantitative cross-sectional design, we administered a self-completed Google Forms survey to adult consumers with prior experience with AR retail apps. Convenience sampling yielded 264 responses (March 20–May 15, 2025); after removing partial and non-experienced cases, 216 valid observations remained, exceeding recommended sample-size guidelines. Most of the sample (53.2% female and 46.8% male) were between the ages of 35 and 44 (44.9%), followed by 25 to 34 (22.7%) and 45 to 54 (14.8%). Income was primarily between €10,001 and €20,000 (50.0%), with 21.8% at €20,001 to €30,000. Education was high (44.9% with higher education and 32.4% with postgraduate qualifications).

Measurement Instruments

On a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree), we used validated, AR-tailored scales. The following established instruments were used to measure consumption values: hedonic (3 items), convenience (4 items), monetary (3 items), informational (4 items), and social (3 items). TAM constructs 1) perceived usefulness (7 items), 2) prior experience (3 items), 4) perceived ease of use (5 items), 5) attitude toward AR (6 items), and 6) behavioral intention (2 items) from Davis et al. (1989) were used to measure technology-related beliefs. Eight items on mental imagery (elaboration, quality) and 12 items on perceived interactivity (controllability, responsiveness, playfulness) by Park and Yoo (2020).

Data Analysis

Data analysis proceeded through multiple stages using SPSS 29 and JASP 0.18.3. Confirmatory Factor Analysis (CFA) validated the measurement model, examining construct validity through factor loadings, fit indices (CFI, RMSEA, SRMR), and overall model fit. We computed reliability using Cronbach's alpha and Composite Reliability, with Average Variance Extracted (AVE) confirming convergent validity.

For hypothesis testing we employ Spearman's rank correlation to examine relationships among constructs, given the ordinal nature of Likert-scale data. Polynomial regression equations explored both linear and nonlinear relationships. Mediation analyses used the PROCESS macro v. 4.2 with bootstrapping (5,000 samples) to test indirect effects. Multiple regression analysis assessed the model's overall predictive capacity.

RESULTS

Measurement Model Validation

CFA indicated excellent model fit [$\chi^2(1644)= 929.67$, p=1.000; CFI=.963; TLI=.962; NFI=.946; GFI=.953; RMSEA=.042; SRMR=.045], with all indices meeting recommended cutoffs (CFI>.95, RMSEA<.06, SRMR<.08, GFI>.90; Hu & Bentler, 1999). Standardized loadings ranged from .665 to .947 (M = .748), all significant ($p < .001$) and with 95% CIs excluding zero, supporting convergent validity. Reliability was strong: Cronbach's α=.782–.952, CR=.851–.941, and AVE=.534–.869 (≥.50).

Hypothesis Testing Results

All direct hypotheses (H1–H13) received strong support through Spearman correlation analysis (all $p < .01$). Hedonic value demonstrated a moderate positive correlation with perceived usefulness ($\rho = .613$, $p < .01$), with a linear relationship ($Y = 0.34X + 2.55$). Convenience value exhibited a strong positive correlation ($\rho = .648$, $p < .01$) with a quadratic relationship, indicating slight diminishing returns at high levels of convenience. Monetary value ($\rho = .577$, $p < .01$), informational value ($\rho = .623$, $p < .01$), and social value ($\rho = .602$, $p < .01$) all showed substantial positive relationships with perceived usefulness, with varying degrees of nonlinearity.

Previous experience positively predicted perceived usefulness ($\rho = .563$, $p < .01$) and ease of use ($\rho = .511$, $p < .01$) with threshold-like nonlinearities. Ease of use strongly predicted usefulness ($\rho = .711$, $p < .01$). Perceived interactivity strongly predicted usefulness ($\rho = .672$, $p < .01$) and mental imagery ($\rho = .622$, $p < .01$). Usefulness linearly predicted behavioral intention ($Y = 0.81X + 0.97$; $\rho = .676$, $p < .01$). Mental imagery predicted attitude toward AR ($\rho = .634$, $p < .01$), and attitude strongly predicted intention ($\rho = .697$, $p < .01$); both were nonlinear (cubic).

Mediation Analysis

Mediation analyses verified that perceived usefulness fully mediated the relationships between previous experience and behavioral intention (H14), perceived ease of use and behavioral intention (H15), and perceived interactivity and behavioral intention (H16). In each case, the direct effect became non-significant when the mediator was included, whereas indirect effects remained significant ($p < .001$).

Mental imagery fully mediated the relationship between perceived interactivity and attitude toward AR (H17). The direct effect of perceived interactivity on attitude ($c = .244$, $p < .001$) became nonsignificant ($c' = -.122$, $p = .054$) when mental imagery was included, while the indirect effect remained significant.

Predictive Model

Multiple regression analysis showed strong predictive capacity. A model including perceived usefulness, attitude toward AR, and mental imagery explained 73.4% of variance in behavioral intention ($R^2 = .734$, $F(3,212) = 195.12$, $p < .001$). All predictors achieved significance: perceived usefulness ($B = .376$, $p < .001$), attitude toward AR ($B = .459$, $p < .001$), and mental imagery ($B = .282$, $p < .01$). The Durbin–Watson statistic (1.925) confirmed no autocorrelation, and VIF values below 2.5 indicated no multicollinearity concerns.

DISCUSSION

Theoretical Implications

We empirically validate an integrated AR retail framework that combines CVT, TAM, and perceived interactivity, and we find that all consumption values increase perceived usefulness (most strongly for hedonic and informational values). Value strategy is guided by the nonlinear, diminishing returns of convenience, money, and social values, meaning that improvements only yield benefits up to a point.

The confirmation of perceived usefulness as a central mediating mechanism supports and extends TAM in AR contexts (Davis, 1989; Venkatesh & Davis, 2000). We observe the full mediation effects for previous experience, perceived ease of use, and perceived interactivity through perceived usefulness emphasize the essential role of utility perceptions in translating AR features into behavioral outcomes, and we find in accordance with recent AR research emphasizing perceived usefulness as a key determinant of technology acceptance (e.g., Xu et al., 2025).

We can better understand how people interpret AR experiences by using mental imagery to link attitudes toward AR and perceived interactivity (Park and Yoo, 2020). Thus, AR's capacity to produce vivid mental images contributes to the transformation of interactive elements into constructive attitudes. The dual-pathway model provides a framework that takes into account both rational and affective aspects of AR adoption.

Managerial Implications for Marketing Analytics

Retail managers who embrace AR should: (1) prioritize entertainment, enjoyment, and education over perceived usefulness. (2) Design apps that prioritize entertainment, enjoyment, and education. (3) Highlight the advantages of each feature, showing how AR improves results, speeds up decision-making, and saves time. Additionally, given the nonlinear returns, they ought to (4) prioritize a few high-impact capabilities. To improve attitudes and mental imagery while preserving the interface's usability, they should create authentic interactivity with real control, immediate feedback, and captivating options. (5) Allocate resources to efficient onboarding, including contextual guidance, gradual feature rollouts, and guided tutorials.

Data Analytics Implications

Regarding the data analytics implications, we clearly show the value of using advanced analytics in retail technology research. Not surprisingly, polynomial regression helps identify nonlinear relationships, enabling a better comprehension of intricate consumer responses than standard linear methods (Yaseen & Omer, 2025). Retailers can use these techniques with their own data to find the best feature levels and asset allocation.

By incorporating mediation analysis, retailers can provide a way to understand indirect effects in how consumers make decisions. Retailers using AR can apply similar analyses to their own customer data to see which features encourage adoption by increasing perceived usefulness, rather than just emotional appeal. This helps them focus on their optimization strategies (Micheletto et al., 2025).

Further, employing CFA for measurement validation makes certain that analytics efforts are accurate measurements. Practically, when retailers create their own metrics for AR effectiveness, they should adopt comparable validation procedures to ensure their systems capture the right aspects of user experience and behavior.

Limitations and Future Research

We recognize that this study has limitations that suggest avenues for future research. Since we use a cross-sectional design, we can only observe relationships at a single point in time and cannot track how AR adoption changes over time. Future studies should use panel designs to track consumers and examine how their attitudes and intentions change over time as they continue using AR.

The degree to which these findings can be extrapolated to other cultures is limited by using a convenience sample. Factors such as shopping habits, privacy concerns, and technology habits can affect the acceptance of AR across regions. Research comparing nations would be useful in demonstrating how these relationships are impacted by culture.

We focused only on people who already have AR experience, so we did not include those who have not tried it yet. Future research should examine what non-users think and what prevents them from adopting AR to gain a more complete view. Also, this study does not separate different types of AR apps, which could affect value and user experience differently.

Finally, while our model explains much of behavioral intention (73.4%), it does not test the link between intention and actual use. Research that tracks real behavior would help us understand how intentions become actions and what helps or prevents this process.

CONCLUSION

We test an integrated framework that combines the TAM, perceived interactivity, and consumption values to examine how AR closes the "imagination gap" in retail. The results highlight the need for careful optimization, as each value dimension uniquely influences perceived usefulness, while interactivity shapes intentions through both affective mental imagery and tangible functional benefits. We explain how CVT and TAM work together to promote AR adoption, identify mental imagery as a key conduit, and find nonlinear effects that go beyond simple linear models. In actuality, the results provide retailers with focused,

data-driven advice on how to create augmented reality experiences that maximize value and interactive elements to increase adoption.

To stay competitive as AR technology advances and retail becomes increasingly digital, it's critical to understand what drives customers to embrace new tools. We provide a tried-and-true framework to the literature that demonstrates how effective data analysis can direct retail technology strategies for both researchers and retail managers. To better understand AR's impact, future research should examine how intentions translate into actual use, how cultural differences shape use, and how use changes over time.

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ADDRESSING TECHNOLOGICAL CHANGES IN MARKETING ANALYTICS

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PANEL POSITION PAPER

There have been many changes in the field of marketing analytics in recent years, and with the rise of artificial intelligence (AI) more changes are certainly on the way. This can feel overwhelming to practitioners, and challenges teachers to adapt their instructional methods as well. We desire and need our students to be ready to hit the ground running when they graduate, oftentimes even before then. So, how do we do this, and how should we best use the limited opportunities that we have to prepare them for the workforce in the age of AI? It may be helpful for us to address three changes with lessons that have stood the test of time and can increase our future marketers' understanding of marketing analytics today.

First, we must teach our students how to discern what really matters. Often marketers suffer from an avalanche of information. We can just as easily doomscroll through our Google or Facebook analytics dashboard as any social media site. While analytics offer great potential for insights, they offer us equal opportunities for distractions as well. Whereas in the past we lacked data today we may have too much, so we must develop the ability to determine what's worthwhile or not from the information available to them. Similarly, these tools and often the same or similar data may be available to everyone and so again they must know how to use analytics strategically and effectively to be successful. Developing a form of intuitive judgment is essential, whereby students must learn to apply critical thinking skills, which remain foundational to most university programs, within the field of analytics and marketing generally.

Second, the way that we use analytics data and reports has changed. When I worked within the nonprofit world I participated in and witnessed firsthand a big shift in customer relationship management (CRM) software where notifications and reports changed from pull to push technology. Instead of always requiring a relatively experienced and knowledgeable fundraiser to create reports in Blackbaud's Raisers Edge or its competitors to prepare date for analysis, new nonprofit CRM solutions automatically run the most common and important reports in the background and can prompt users to contact the right people accordingly. Salesforce does the same now too, which not only saves time but also could potentially turn almost anyone into a serviceable salesperson, fundraiser, etc. With AI the depth of this CRM automation is leading to a world where knowing how to use databases and create reports to find a needle in a haystack is much less beneficial, and database management skills are losing their value just as much of coding has. Thus we cannot fall into the trap of overemphasizing technical skills that may quickly become outdated.

Third, just as in all marketing research and analysis we must encourage and lead our students to dive into their work and gain real world experience. More specifically, this means involving them with data analytics work and practice. This can be through simulations, university resources, or working with local businesses or nonprofits. For instance, in one of

our digital marketing and analytics courses we share actual dashboards and data from some university marketing efforts. In a marketing research course the professor, who owns multiple small businesses, shares their data analytics information with students as well. By being able to view and see how the data is collected, analyzed and then used, the students can much more deeply understand the theoretical concepts they are learning in the textbook.

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SOCIAL MEDIA AND COMMUNITY: BEYOND CONTENT TO AUTHENTIC CONNECTION – A CASE STUDY IN THE AIRLINE INDUSTRY

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EXTENDED ABSTRACT

Social media has transformed the way in which brands communicate and connect with customers. With observed trends emphasizing video content, influencer and user generated content, and AI-driven personalization, the fundamental shift is relational. The panel suggests that effective marketing goes beyond content to building authentic digital connections. This research contributes to digital marketing literature by framing social media as a channel for building connection with consumers in service industries such as air transportation.

Drawing from brand community theory (Muniz & O'Guinn, 2001; Wong, 2025), this research positions social media platforms as contemporary spaces where shared consciousness, rituals, and moral responsibility are enacted digitally. In these environments, consumers do not merely engage with brand content, they participate in meaning-making processes that co-create brand identity. Extending this lens, relationship marketing theory (Morgan & Hunt, 1994; Hussain et al., 2025) emphasizes long-term relational exchange over short-term transactions, reinforcing the importance of trust, commitment, and mutual value creation in service-based industries. Additionally, social identity theory (Tajfel & Turner, 1979; Farivar & Wang, 2022) provides a useful framework for understanding how consumers affiliate with airline brands that reflect cultural values, destinations, and shared travel aspirations. Through digital storytelling and user-generated content, customers signal membership within aspirational or culturally grounded communities. Finally, service-dominant logic (Vargo & Lusch, 2004; Akaka, et al., 2024) reframes value as co-created through interaction rather than embedded in the service itself, aligning with the notion that airlines facilitate experiences such as destinations, memories, and social connection rather than merely transportation. Together, these frameworks support the argument that social media marketing in air transportation functions as a relational ecosystem where identity, trust, and shared experience help shape consumer-brand connection.

Contemporary social media trends further reinforce this relational shift. Short-form video formats such as TikTok and Instagram Reels have become dominant channels for storytelling, privileging immersive and emotionally resonant travel narratives over static promotional messaging (Smith & Kim, 2023). Influencer collaborations and user-generated content continue to democratize brand storytelling, positioning travelers not merely as consumers but as co-creators of destination meaning (Maeran & Mignemi, 2021; Wong, 2025). At the same time, advances in artificial intelligence support hyper-personalized content delivery and real-time social customer care, enabling airlines to anticipate traveler

needs and strengthen digital dialogue (Teepapal, 2025). Interactive platform features such as live streaming, polls, and community-driven comment threads further blur the line between marketing communication and communal participation (Zhao & Huang, 2025). Collectively, these trends signal a transformation in which social media functions less as a broadcast channel and more as a participatory ecosystem grounded in authenticity, cultural resonance, and sustained relational engagement.

The airline industry represents an interesting context for investigating the role of authentic connection in marketing practice. First, in air transportation, customer value is less about the service delivered as it is about the destination. Socially shared journeys, through user-generated or influencer marketing, serve as inspiration for others seeking air transportation services. Second, air travel is inherently trust-dependent with social platforms increasingly the go-to channel for service disruptions. Thus, social media marketing in the airline industry goes beyond simply "selling a seat" and extends to promoting a destination and building trust throughout the journey.

A community-centric approach is especially notable within collectivist cultures across South America, where airlines such as LATAM, GOL and Azul have integrated regional festivals (see Figure 1), cultural symbolism (see Figure 2) and passenger-generated content (see Figure 3) into their promotional messaging. Furthermore, airlines are opting for authentic storytelling over polished and inauthentic corporate messaging to reinforce brand credibility and trust. As exemplified in a 2023 campaign, Azul turned to social media to help foster new talent and awareness of internship opportunities for recent graduates (see Figure 4). These social media strategies foster a sense of belonging and inspire both domestic and international travel.

Social media is a powerful community infrastructure where brand identity and trust are co-created with consumers. In service industries like air transportation, continuing the social media shift from transactional to authentic content builds relational bonds derived from shared experiences. The advantage is amplified with authentic storytelling captured through the images, words, and video of real people and the brands they engage.

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APPENDIX

Figure 1

GOL [@voegoloficial]. (2026, February 9). Influencer promoting GOL for the Carnival holiday. [Reel] Instagram. https://www.instagram.com/reel/DUip5tWgJCS

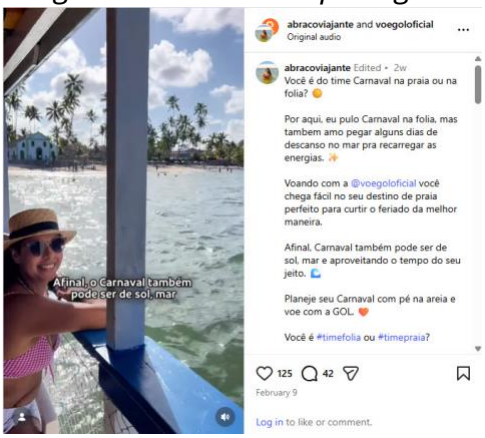

Figure 2

Azul (n.d). "The sky in Brazil is blue" advertising campaign. [Photo]

Figure 3

Azul. [@azulinhasaereas]. (2026, January 30). Influencer promoting the destination of Fortaleza. [Reel] Instagram. https://www.instagram.com/reel/DUI63ffAAYE

Figure 4

Azul. [@azulinhasaereas]. (2023, August 3). Internal employees and interns. [Reel] YouTube & Instagram. https://endomarketing.portalpublicidade.com.br/case-estagiarios-azul

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INTERNATIONAL MARKETING IN A POLARIZED WORLD

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Antoinette Okono, Houston Christian University
Ursula Sullivan, Northern Illinois University

PANEL POSITION PAPER

Kristina Harrison

For the panel discussion, I'm positioning acculturation as a marketplace process: consumers continually adapt preferences, identities, and participation through everyday interactions with brands, retail formats, and service systems. From an international marketing lens, the key point is that value creation in multicultural markets is relational and contextual, recognition, trust cues, and risk perceptions shape whether consumers engage, avoid, or switch channels as they navigate "home" and "host" cultural frames. I'll close by previewing our next step: a cross-group survey that tests these mechanisms beyond any single demographic, treating multicultural consumers as heterogeneous, intersectional segments rather than one acculturation profile.

Antoinette Okono

Consumer culture positioning (CCP) provides a strategic lens for understanding how brands embed cultural meaning into global marketing programs. Rather than viewing markets solely through economic segmentation, CCP emphasizes how brands align with cultural identities, symbolic systems, and shared narratives. In this panel, I will discuss three dominant positioning strategies that structure this framework: global consumer culture positioning (GCCP), foreign consumer culture positioning (FCCP), and local consumer culture positioning (LCCP). In a polarized and culturally fragmented marketplace, understanding how these positioning strategies interact is central to international marketing effectiveness.

Ursula Sullivan

In this panel presentation, I'll discuss the effects of tariffs and their rise due to the polarization affecting international business. The effect of tariffs is that they earn revenue and make foreign goods more expensive in the host country, thereby discouraging importation of goods. The recent polarization in trade relationships has yielded greater rifts between trading partners. Pricing, product and distribution policies of the global firms are affected, as well as investment decisions. International marketers are generally not pleased with the new tariffs, but some US industries are quite receptive as they have struggled to compete with cheaper goods from around the world.

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POLARIZATION-ADJUSTED GLOBAL IMC: MANAGING COO EFFECTS, STANDARDIZATION/ ADAPTATION, AND POLITICAL RISK

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PANEL POSITION PAPER

Political polarization is spreading across countries through global media, diaspora networks, and platform algorithms, which makes international marketing communications more likely to be interpreted through identity lenses and to trigger rapid reputational spillovers. In polarized settings, consumers and other stakeholders don't just judge product claims – they also infer where the brand stands, whether it's legitimate, and what it intends, often treating marketing cues as identity tests rather than straightforward information. Affective polarization research shows that out-group hostility can be strong and behaviorally meaningful, increasing the probability that ambiguous signals are decoded adversarially (Iyengar & Westwood, 2015). Marketing scholarship has emphasized that polarization has direct implications for consumer welfare, marketer strategy, and public policy, suggesting that firms must treat polarization as a market condition rather than an episodic "issues moment" (Weber et al., 2021). For global integrated marketing communications (IMC), the practical shift is from a coordination problem (i.e., one voice, many markets) to a meaning-variance problem (i.e., one voice, many interpretations). This panel position paper proposes Polarization-Adjusted Global IMC (PA-GIMC), a planning framework that integrates (1) country-of-origin (COO) effects and country image research, (2) standardization versus adaptation in international marketing strategy, and (3) political risk and legitimacy constraints. PA-GIMC is designed as a repeatable planning cycle and decision map so managers can decide what to standardize globally, what to adapt locally, and how to prepare for predictable flashpoints. The central claim is that polarization increases cue sensitivity (i.e., small signals produce large inferences) and response dispersion (i.e., segments react in divergent directions). Brand polarization means people feel strongly in opposite directions – some love the brand while others strongly dislike it (Osuna Ramírez et al., 2024). Therefore, global IMC should be built in flexible pieces, grounded in strong evidence, and designed with institutional and political constraints in mind.

COO effects matter because origin cues are often one of the quickest shortcuts consumers use to interpret brands in cross-border markets and settings. Country image can operate as either a halo or a summary construct depending on consumer familiarity (Han, 1989). Meta-analytic evidence indicates that COO has a reliable effect on perceived quality and related evaluations, but the magnitude is contingent on context and cue salience (Verlegh & Steenkamp, 1999). More recently, foreign country image evidence has been synthesized at scale, using input obtained from 253 studies included in 176 empirical articles published over the past five decades (Leonidou et al., 2022). Under polarization, COO cues are more likely to be moralized or politicized, shifting interpretation from "what is it?" toward

"what does it signal about who we are and who they are?" PA-GIMC views origin as a set of different COO cues and effects – not just a single 'Made in X' label. In polarized environments, consumers can separate and react differently to (a) product/category origin stereotypes, (b) brand origin story, (c) manufacturing origin (supply chain footprint), and (d) ownership/control origin (capital and governance). Social identity theory explains that when identity is top of mind, these cues are more likely to be interpreted as 'us vs. them' signals (Tajfel & Turner, 1979). Consumer ethnocentrism research also suggests that when out-group cues are salient, people may avoid foreign products to stay consistent with their identity (Shimp & Sharma, 1987). For managers, this means 'origin management' starts with diagnosis: which origin dimension is most salient right now, for which segments, and on which platforms.

PA-GIMC treats standardization versus adaptation as a modular design decision, not a binary choice. International marketing research finds that standardization versus adaptation outcomes vary by context and by marketing-mix element (Theodosiou & Leonidou, 2003). A recent systematic review similarly concludes that contingencies and execution choices drive outcomes, and that element-level analysis is often more informative than campaign-level labels (Mandler et al., 2021). Consistent with this, neither standardization nor adaptation is universally better (Hultman & Oghazi, 2024). PA-GIMC treats polarization as a key contingency because it raises identity risk – the chance that a standardized element will be read as ideological alignment, a moral stance, or a geopolitical signal. The modular recommendation is to keep the coherence core consistent while adapting high-risk cues. The coherence core includes the global promise and positioning, tone-of-voice guardrails, and substantiation practices (i.e., evidence standards, disclosures, and documentation norms). High-risk cues are the elements most likely to be interpreted through identity lenses – symbols, imagery, language choices, spokespersons, partnerships, sponsorships, and platform/channel mix. Political exposure must also be treated as a front-end marketing planning variable. Political risk research emphasizes that political events and policy actions can significantly impact firm outcomes and should be integrated into planning (Adarkwah & Benito, 2023; Kobrin, 1979). From a legitimacy perspective, organizations must be perceived as appropriate and acceptable within socially constructed systems of norms and beliefs (Suchman, 1995). Polarization makes legitimacy challenges more likely to become rapid and public, so IMC itself becomes a risk point because communication increases both visibility and the chance of being misinterpreted. PA-GIMC adds a political-risk gate before launch: identify relevant constraints (i.e., laws, enforcement patterns, disclosure rules, platform policies), likely stakeholder conflicts (i.e., regulators, activists, employees, channel partners), and how the message may be interpreted as a stance in that market.

PA-GIMC treats response readiness as part of the plan. Recent evidence suggests that inoculation, or prebunking, can make audiences more resistant to manipulative narratives (Traberg et al., 2022). Brands should accept that some claims will be attacked or reframed, especially in polarized environments. Thus, PA-GIMC recommends a prebunking and response protocol: prepare an evidence package, draft a response ladder (i.e., clarification, correction, disclosure, and escalation), assign a spokesperson, and set rules for pausing paid media if dispersion indicators surge. In practice, PA-GIMC follows a six-step cycle: (1)

polarization and issue mapping; (2) *COO effects audit across product/category, brand, manufacturing, and ownership origins*; (3) *standardize/adapt decisions by IMC element*; (4) *risk screening for claims, partners, and channels*; (5) *prebunk/response protocol design* (i.e., plan in advance how to prevent and handle misreadings or attacks on your message); and (6) *monitoring response dispersion and iterating* (i.e., track whether reactions to message are splitting across segments, markets, or platforms). Collectively, these tools turn polarization from a vague threat into a concrete planning input. In other words, polarization is not just background noise in international marketing – it shapes how audiences create meaning, influencing COO effects, standardization/adaptation decisions, and political exposure. PA-GIMC combines these research streams into a practical planning approach that keeps the brand globally consistent while making messages easier to interpret – and easier to defend – locally.

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BRIDGING THE ACADEMIC-CONSULTING DIVIDE: STUDENT-RUN AGENCIES, LIVE-CLIENT WORK, AND HIGH-IMPACT LEARNING IN MARKETING AND SALES EDUCATION

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Patrick Lynch, Lyon College
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PANEL POSITION PAPER

Marketing and sales programs occupy a uniquely applied position in higher education: community partners and employers frequently request marketing services, while students need authentic experiences that develop professional skills, confidence, and identity. Faculty often experience a persistent tension between two logics-teaching (curricular goals, assessment, scaffolding) and consulting (client expectations, timelines, deliverables). This panel compares three institutional approaches to bridging that divide through student-run agencies, live-client projects, and industry/community partnership models.

Drawing on experiential learning theory, we frame these initiatives as intentional learning cycles in which students engage in concrete professional tasks, reflect on outcomes, form transferable concepts, and iteratively test improvements in subsequent client interactions (Kolb, 1984). Situated learning theory adds a complementary emphasis: students learn through participation in communities of practice, gradually moving from legitimate peripheral participation toward fuller membership as they adopt professional norms and responsibilities (Lave & Wenger, 1991). Together, these lenses highlight why "doing client work" is not automatically "learning"-the educational value depends on design features that turn work into structured practice, feedback, and reflection.

Across the three cases represented on this panel-(a) a credit-bearing immersive digital marketing consulting course at a mid-sized public university, (b) a two-semester course sequence designed to sustain a student-run business/agency model at a small liberal arts institution, and (c) an applied service model that includes compensation or stipend goals to support student access and continuity-panelists will surface the operational decisions that most directly influence student learning and partner value. These include partner selection and readiness, scope definition and revision limits, quality assurance and faculty oversight, student role structures and peer mentoring, and the integration of guided reflection into course routines.

The panel also positions these models as aligned with widely recognized high-impact practice characteristics, including sustained effort, meaningful interaction, real-world application, and structured feedback (Kuh, 2008). Importantly, these initiatives create public-facing value for institutions and communities-through websites, campaigns, analytics, and other deliverables-while simultaneously supporting workforce preparation and student portfolios. Yet they also generate hidden faculty labor and risk (e.g., scope creep,

inconsistent client expectations, uneven project difficulty). By explicitly naming and comparing these tensions, the panel offers practical guidance to faculty who want to scale experiential learning without turning courses into uncompensated consulting.

Consistent with the Scholarship of Teaching and Learning, this proceedings abstract emphasizes transferable design principles rather than outcomes claims (Boyer, 1990). Participants will leave with a set of concrete implementation considerations and discussion prompts that can be adapted to their own institutional constraints. The panel will be delivered in a conversational "fireside chat" format to model how faculty can share practice-based knowledge, spark new collaborations, and strengthen the pedagogy of marketing and sales education across diverse program contexts.

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MARKETING STUDENTS JUST WANT TO HAVE FUN: HOW TO INCORPORATE GAMES TO IMPROVE THE CLASSROOM EXPERIENCE

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PANEL POSITION PAPER

The topic of gamification as a teaching strategy in higher education has been explored considerably throughout the last decade in a variety of fields (Wiggins, 2016; Varannai, Sasvari & Urbanovics, 2017; Langendahl, Cook & Mark-Herbert, 2016; Ortiz, Chiluiza & Valcke, 2016). While gamification can be an effective and engaging teaching strategy, these studies also highlight that it may not be the most efficient or easiest for faculty to utilize. To set up a gamification experience in the classroom can range from easy and straightforward to confusing and time consuming. For faculty members who want to incorporate these tools into their courses but are concerned about the planning or implementation, there may be certain activities that would be more appropriate or beneficial for a particular course or topic. Three effective game experiences with varying difficulty and preparation will be explained here: Jeopardy, The Price is Right and Escape room.

For several decades, it has been possible to play a jeopardy type game in the classroom. With minimal googling (or AI utilization) you can find a jeopardy template to use. The easiest and most familiar form is a powerpoint presentation where the board is linked to the various questions and the questions flow to the answers and back to the board. In order to set up the game, you would choose a series of topics related to a subject, chapter, or course. Then create questions for each category with the easiest questions worth the smaller amounts of money and the hardest questions at the bottom for more money. Jeopardy can be played in groups in class and monopoly money or candy or other small prizes can be used. Buzzers may be helpful. Once made, this can require minimal to no effort to update across semesters. Unless course material changes, the questions and answers would remain largely unchanged. It is not the most effective review in that the questions are fast and students are usually too engaged with the game to be preparing for what is on a test, so this method is best for a knowledge check or even an in class quiz.

While Jeopardy can be reused with minimal updates, The Price is Right can take a bit more work. This game is an obvious fit for a pricing course or chapter. It can be done on powerpoint or any visual site where you can have a picture of a product and have the price appear after students have guessed. You can do one item at a time or several at once for students to guess. You can also go through all of the guessing and then show the answers or just go one product or set of products at a time. Students can work individually or in groups. It can be a bit more fun for this to be done with 2 products at a time and with students in teams. Each team can have a different marker and write their guess on the board, or on individual boards they hold up. Professors can keep track of who guesses

correctly each round. Price is right rules apply so the winner is the team who is the closest without going over. Products should range from utilitarian to hedonic and inexpensive to very expensive. Students may be good at guessing the price of a Gatorade or a video game, but are less likely to know the cost of a washing machine or depending on the university demographic, certain luxury or discount brands. Having a variety of products helps students to learn what things cost. This activity reinforces many pricing and branding concepts while also being fun for students. As this isn't a rushed activity compared to Jeopardy (they aren't necessarily trying to be the first to guess correctly), there is more learning and reinforcement happening. Prices may need to be updated as inflation and the economy can lead to changes, and the products themselves will change over time.

While Jeopardy and The Price is Right are both fun games to play in a class, a newer classroom game where students can compete and learn at the same time is an escape room. This can be significantly more work for the faculty member in advance as it requires several activities or puzzles for each group to complete and therefore props and advanced set up. When visiting a traditional escape room, you are typically in a group and given certain challenges and puzzles in order to eventually escape the room. In this case, students would also be in groups. They can be assigned a number or color and all things for their group can maintain that theme throughout the activity in order to maintain consistently. Then challenges are developed that allow students to move around the room, and provide the opportunity for learning and critical thinking. For instance, to start, the teams could have to locate a bag the color of their team. When they get there, they may find supplies and the first clue in the bag. The first clue might be a puzzle that can be solved by reading through several term definitions from the chapter they were supposed to read. By applying them, they can unlock a clue that leads them to a box elsewhere in the room. The box can have a quick case study for students to read and apply. Upon doing so it can lead to another clue that utilizes something in their tool bag (blacklight, flashcards, cipher, magnifying glass etc.).

Escape room activities can take a lot of planning in order to set up activities that don't take too long, and can still reinforce course learning and are not too confusing. This is definitely more work for faculty than a traditional game set up. It also requires more materials and space to move around. However, it is undoubtably fun and engaging for students and a very memorable class experience. If it's a topic that may benefit from a more exciting and active classroom an escape room game may be a helpful activity.

All of these classroom activities vary in terms of their difficulty and effectiveness but depending on the course and the topic, each of these may be a viable and engaging activity that students won't soon forget. There are smaller ways to gamify your classroom as well, if you don't want to actually "play" a game. Students can gain points in class by volunteering or answering questions. A roster is an easy place to keep track of student points and a leaderboard can be posted. There can be rewards or prizes for students, groups or the entire class. For example, a group with the most points can choose their topic for a project first, or decide which order they go in during presentations. An individual could receive an automatic A on a small quiz or homework assignment, or even get to ask the quiz questions for a day.

Creating a sense of competition, whether it's for the semester or just for a course period, can engage students in a unique way. It also makes them active participants. And let's be honest, games are fun.

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THE 2030 MARKETING SKILLS STACK: EXPERIENTIAL DESIGN, AUTHENTICITY, AND INTEGRITY-BY-DESIGN ASSESSMENT

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PANEL POSITION PAPER

Marketing education is entering a period where it's easier to produce polished assignments than to make – and justify – sound decisions. Generative AI can draft copy, create outlines, and produce plausible analyses, but these outputs are only valuable if students can frame problems, verify claims, interpret evidence, and justify trade-offs. The educational risk is that assessments start rewarding formatting and polished writing instead of real competence. Recent research on generative AI in higher education argues that institutions should respond by redesigning assessments and setting clear norms, rather than relying only on detection or bans (Cotton et al., 2024). Many policies define the central problem as being the risk that students will submit non-original work for assessment (Luo, 2024). Marketing-education scholarship likewise emphasizes that generative AI will reshape what students must learn and how educators should teach it (Acar, 2024; Guha et al., 2024; McAlister et al., 2024). GenAI has the potential to revolutionize or transform marketing education (Acar, 2024). Marketing-education work similarly emphasizes that generative AI will reshape what students must learn and how educators should teach it (Guha et al., 2024). This panel position paper proposes the 2030 Marketing Skills Stack, a practical framework that links course design and assessment to three reinforcing layers: (1) *experiential studio learning*; (2) *authenticity as a market-facing competency*; and (3) *integrity-by-design assessment*. The Stack is grounded in constructive alignment: learning outcomes, learning activities, and assessment tasks must be intentionally matched so that what educators claim to teach is what they actually evaluate (Biggs, 1996). It also follows the logic of authentic assessment: to judge real competence, educators should evaluate performance on meaningful tasks, not proxy measures that students can game or are easy to complete without demonstrating competence (Wiggins, 1990).

Layer 1 is experiential studio design. Experiential learning theory emphasizes cycles of concrete experience, reflection, conceptualization, and experimentation (Kolb, 1984). Evidence from active learning supports the idea that well-designed engagement and practice improve learning outcomes relative to passive instruction (Prince, 2004). However, a second-order meta-analysis suggests that when digital technology instruction simply replaced nontechnology instruction, students' cognitive learning outcomes did not change substantially (Sailer et al., 2024). In a marketing studio model, students work through or complete repeated cycles – i.e., brief, prototype, critique, and revise – so they build lasting routines for developing campaigns, interpreting evidence, and communicating recommendations. Feedback is essential: formative feedback supports self-regulated

learning when it is timely, criteria-based, and followed by opportunities to revise (Nicol & Macfarlane-Dick, 2006).

Layer 2 is authenticity as a market-facing competency. In contemporary markets, trust is increasingly shaped by transparency, consistency, and evidence. Authenticity can be taught as the mechanics of credibility: students learn to make claims they can substantiate, disclose limits and constraints, and maintain coherence between message, behavior, and evidence. Classic brand-authenticity research illustrates how authenticity perceptions are constructed through disciplined practices rather than mere storytelling (Beverland, 2005). In a classroom context, authenticity training includes evidence standards (e.g., citations, data provenance), stakeholder expectation mapping (i.e., who will contest a claim and why), and "trust under scrutiny" performance tasks where students must defend claims against challenges. Layer 3 is integrity-by-design assessment in the GenAI era. Valid assessment depends on defensible inferences from performance to competence (Messick, 1995). When AI can produce polished work, outputs alone are weaker evidence of learning because, in general, markers are unable to distinguish' assessments that include GenAI input (Kofinas et al., 2025). Integrity-by-design addresses this by requiring process evidence and decision. Findings indicate that markers, in general, are not able to distinguish accountability. The goal is not surveillance but rather assessment architecture: students submit decision rationales, version histories, evidence logs, and AI-use disclosures that document how conclusions were reached. This approach also aligns with research showing that academic dishonesty is shaped by contextual factors and norms, suggesting that design and expectations matter (McCabe & Treviño, 1993).

In practice, you can implement integrity-by-design using a set of repeatable assessment patterns. Pattern 1 is *process artifacts*: a brief decision memo describing assumptions, alternatives considered, and why the chosen path fits the evidence. Pattern 2 is *evidence provenance*: a source and data log that ties each major claim to a verifiable source or dataset. Pattern 3 is *graded AI-use disclosure*: students document what tools were used, for what tasks, and what verification steps were applied; instructors grade the quality of workflow and validation, not the mere fact of tool use (Cotton et al., 2024). Pattern 4 is *short oral or recorded defenses* where students respond to targeted questions about trade-offs, measurement, and limitations – making reasoning observable and deterring outsourcing. Program implementation can be achieved in three steps. First, map the Skills Stack across the curriculum: where are students introduced to evidence standards, where do they practice iterative studio work (i.e., repeated, structured cycles of doing and improving marketing work with feedback), and where are they expected to master decision defenses? Second, convert a small number of high-impact assignments (i.e., two or three) into studio-plus-defense formats, using rubrics that reward reasoning, substantiation, and reflection (Biggs, 1996; Wiggins, 1990). Third, publish clear GenAI rules and evidence standards so students understand acceptable assistance and required documentation (Cotton et al., 2024).

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BACK TO THE FUTURE: OLD SCHOOL VS. NEW SCHOOL

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PANEL POSITION PAPER

Teaching has never been a one size fits all task. Students have different learning styles, interests, lived experiences and ideas that lead to an inconsistent absorption of knowledge (Tulbure, 2012a&b). There is always an ever evolving array of new teaching strategies in order to connect students with course topics. However, despite tools like flipped classrooms, interactive videos and games, and comprehensive simulations, many faculty still rely on a teaching style that dates back to at least as early as Plato, with many students still preferring a lecture based course (Sajjad, 2010). Today, with the increasing utilization of Artificial Intelligence (AI) in our world, professors have greater challenges than ever before when it comes to keeping students engaged and learning (Crompton & Burke, 2023; Popenici & Kerr ,2017). Some faculty have embraced this challenge, finding new ways to incorporate AI into their teaching. Some have turned back to in class writing assignments, oral in person exams and activities that are more AI proof. And yet a third group of faculty are doing neither of these things and in fact, are ignoring it completely.

So what do we do as higher education evolves? How do we prepare students in a world that allows for easy access to answers and supports less cognitive growth, while their lives are increasingly demanding? I propose three strategies for teaching students into the future: embrace the past, teach towards the future, and keep improving soft skills.

While it is unlikely a traditional lecture format will ever go out of style, it is increasingly challenging to supplement a lecture with at home assignments that cannot be easily replicated by a computer. Essays, summaries and even creative projects are being done for students by programs like Chatgpt or Grammerly. Depending on the purpose of a course, utilization of these tools may not interfere with course content enough to motivate faculty to change their procedures. Other faculty however, may be looking for better evaluative activities for students. Essays and assignments written in class are easier to oversee and forces students to think for themselves. Quizzes and exams can also be given in class. All assignments can also incorporate more personal thinking that artificial intelligence could not easily answer. For example, asking students what they would do and why, or what their personal experiences or connection are can lead to more authentic answers. Faculty need to allot time for these activities as any additional in class work will take more time if it was previously done at home. If this cannot be done, utilizing online software to lock down a students computer or have a proctor or video of students taking the exams can help to minimize their usage of other tools.

Whether or not you are concerned about students using AI, the reality of our world is that it exists and is frequently utilized. If AI is an important part of the field a student will be graduating into, students may need to know more about it and how to use it correctly. Encouraging students to build their professional skills utilizing new technologies helps them to stay current and be better prepared on the job market. Google for example has AI tools

for designing apps, website and products. This can help students to learn more about design. We can teach students how to evaluate the output they receive. They can use their knowledge to decide if what they have created is an appropriate fit. Critical evaluation of new tools has always been an important part of learning. Whether consumers learned about the microwave, digital cameras or even the internet, the more we learn about how to use it and the benefits and limitations of these new technologies, the better prepared we are.

Regardless of the new tools that are developed, employers are still emphasizing the need for students to have strongly developed soft skills (Romanenko, Stepanova, Maksimenko, 2024). While faculty continue to face new challenges and concerns, the need for students to understand how to communicate, work as a team, and manage their time are all things that remain relevant. Students can improve their soft skills through modern or traditional teaching methods. On the job market, students will still need to be able to interview, explain their skills and goals and be a good colleague regardless of their knowledge of AI or their usage of new tools. We can reinforce these skills through presentations, group work, case studies, and creative assignments. In an online course students can make a video where they explain a concept or project, or work in teams using discussion boards or breakout groups. Maintaining a focus on soft skills will ensure students are still well-prepared.

Another great way to prepare students for the future is by bringing real-world projects into the classroom. This requires faculty to find an organization that students could work with that would be relevant to the course and a project that could be beneficial to the organization as well as the students. This would allow students to network, learn more about industry and develop the skills they need to be successful on the job market. It also gives students more experience for their resume and concrete examples to bring to an interview.

By embracing the past, teaching towards the future and maintaining a strong focus on soft skills, faculty can confidently continue to successfully teach students regardless of what the future may hold.

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THE RISE OF THE ATHLETIC DEPARTMENT ENTERPRISE: NEW ROLES, NEW RISKS, NEW RESEARCH

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EXTENDED ABSTRACT

Change has been a defining characteristic of intercollegiate athletics in the 2020s. Conference realignment, relaxed student-athlete transfer rules, and the rise of name, image, and likeness are three examples of the upheaval experienced in athletic departments across the country. Our panel addresses three issues related to the current environment in college athletics: 1) head coach roster management with Name, Image, and Likness parameters, 2) strategic resource deployment to gain a competitive advantage, and 3) finding revenue in the new era of college athletics. These issues have implications for sport management practice, pedagogy, and scholarly research.

Head Coach Roster Management with NIL Parameters. The head coach of intercollegiate programs faces many responsibilities including recruiting, coaching, scouting, community relations, and program administrative duties. With recent changes from the Transfer Portal to NIL, these components have added additional and complex layers to the head coach managing their program. With the combination of both the portal and NIL, head coaches are now forced into trying to put together the best group of players for "next year's team" and one year versus in the past in developing a continued program. In the past, there was normally a mix of recruiting including high school players, junior college players, and transfers. With the Transfer Portal (and immediate eligibility) and the continued pressures to win now, head coaches often gravitate to transfers for immediate assistance. With the added layer of NIL and including last year's activation of revenue sharing, head coaches are now tasked with targeting the best transfer players that they can get for their team to elevate next year's success but also with their "financial package" for potential players.

The head coach is now tasked with seeking financial resources from their Director of Athletics to assist in recruiting. With recent 2025 House Settlement, and revenue sharing by schools, the Director of Athletics is the "bank dealer" in sorting out applicable percentages and amounts of money to their department's sports. While football and men's basketball are the main revenue sports, all sports can receive allocated funds and thus lobbying for their program.

The head coach and his staff including assistant coaches and administrative staff must decide which players to pursue but also within their financial pool. The head coach while pursuing the best available players also must look at filling all the roster needs but specific team positions needed to have the best team for next year and to win now.

In Search of Competitive Advantage. Like the competition on the field of play, athletic directors and coaches are exploring how to leverage organizational resources to gain an edge. Resource-Advantage (R-A) theory explains competition as an ongoing process in which organizations pursue superior performance by acquiring, developing, and deploying resources more effectively than rivals. Applied to Power 4 college athletics, the rapid adoption of general manager (GM) roles and the expansion of program staff can be interpreted as strategic investments in specialized managerial capabilities. In an era characterized by transfer portal volatility, NIL-related complexity, and heightened stakeholder coordination demands, programs must redesign internal structures to improve the speed and quality of resource acquisition and deployment.

The GM role represents a formal mechanism for resource orchestration. Rather than requiring the head coach to function simultaneously as strategist, recruiter-in-chief, roster manager, and NIL coordinator, the GM centralizes personnel intelligence, athlete compensation, and roster construction. From an R-A perspective, this specialization can create a comparative advantage by improving information processing and enabling rapid reconfiguration of the roster, a core productive resource in a time marked by high levels of roster churn due to the transfer portal.

Staff size provides an indicator of resource investment. Average staffing levels at Power 4 member schools of approximately 50 employees in football and 19 employees in men's basketball suggest that leading programs increasingly compete through expanded capability systems. A larger staff may enhance comparative advantage by increasing capacity for recruiting operations, analytics, player development, sports performance, communications, and NIL coordination. Importantly, R-A theory implies that these staffing investments matter when they improve resource deployment efficiency, such as through better roster fit, retention, and the development of compelling athlete value propositions. In short, the GM trend and staff expansion reflect programs' efforts to build a comparative advantage in operating resources that ultimately drive competitive outcomes.

Finding Revenue in the New Era of College Athletics. With the recent House v. NCAA settlement, universities are allowed to directly pay student-athletes. This allows student-athletes to receive payment in addition to their athletic scholarships and third-party NIL earnings. The cap for 2025-26 is $20.5 million per school and it is expected that the cap will increase by 4% the following two years and be reevaluated every three years over the time of the 10-year settlement.

The ability for universities to pay their student-athletes presents issues for institutions, especially those in the Non-Power 4 conferences, as to how to generate funds to help pay these players. This new revenue-sharing system makes it difficult for the Non-Power 4 institutions to keep up with the Power 4 conferences such as the SEC and Big Ten. Furthermore, non-revenue sports may face tough times as more money will be diverted to football and basketball. For this reason, institutions are facing a dilemma as to how to address this "new normal" in college athletics and how to find funding sources to help generate revenue to pay the players.

Universities, especially in Non-Power 4 conferences, are having to depend heavily on their athletic associations to raise more money in addition to relying on NIL collectives to help provide additional funds to players. The need to generate more revenue with the

acquisition of new athletic donors, as well as the ability to retain regular donors, will be vitally important to these institutions. However, concerns arise from athletic fundraisers in terms of donor fatigue and other issues, as universities are having to continually ask donors for more donations.

How these new guidelines will change the landscape of college athletics and athletic fundraising is still to be determined; however, universities are already adjusting their athletic fundraising in an attempt to generate more revenue to help compete in this new era of college athletics.

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ESCAPE-GAME METHOD FOR TEACHING AGILE DIGITAL PROJECT MANAGEMENT PRINCIPLES TO UNIVERSITY INSTITUTE OF TECHNOLOGY STUDENTS

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PANEL POSITION PAPER

In this panel presentation, I discuss my experience in using an escape game to teach students about the principles of the AGILE manifesto and the SCRUM method in digital project management. During the introductory session of the digital project management course, students participated in a structured escape game designed as an experiential learning activity. The primary objective was to immerse second-year Bachelor's students specializing in digital marketing, entrepreneurship, and e-business in the foundational principles of the Agile manifesto and the SCRUM framework. Rather than presenting these concepts through a traditional lecture format, the activity required students to solve a series of time-constrained challenges organized in iterative cycles, thereby simulating sprint dynamics. Through successive problem-solving tasks, learners were encouraged to prioritize collaboration over individual performance, respond to evolving constraints, and deliver incremental solutions under uncertainty – core principles aligned with Agile values.

The escape game format fostered active engagement and collective decision-making, enabling students to experience SCRUM roles and ceremonies in practice before formal conceptualization. By assigning implicit roles (e.g., coordination, facilitation, execution), the activity highlighted the importance of self-organization, iterative improvement, and continuous feedback. Debriefing discussions following the exercise facilitated reflexive learning, allowing students to articulate connections between their in-game behaviors and Agile principles such as adaptability, transparency, and customer-centric value creation. Overall, the activity functioned as a pedagogical bridge between theory and practice, establishing a shared experiential foundation for subsequent, more structured exploration of digital project management using SCRUM.

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DEFUSING TEAM DYSFUNCTION: USING A BOMB-DIFFUSAL GAME TO BUILD COMMUNICATION, PROJECT MANAGEMENT, AND CRITICAL THINKING

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PANEL POSITION PAPER

Team-based work is central to many marketing and sales courses, yet students often enter projects without shared norms for communicating under pressure, dividing labor, or adapting when a plan changes. This panel position paper describes a high-impact, low-cost classroom activity that uses the commercial game Keep Talking and Nobody Explodes to create a time-bounded "pressure cooker" simulation that surfaces common team breakdowns and provides an immediate structure for improvement.

The activity has been implemented in an advanced digital marketing course and professional selling courses where students will remain in semester-long teams. Students are told they will face a high-stress scenario that requires precise communication and rapid coordination. One student (the "defuser") sits at the front of the room with an iPad or iPhone running the game and can see the virtual bomb. The remaining teammates (the "experts") sit together with a printed bomb-diffusal manual. Critically, the defuser cannot see the manual and the experts cannot see the bomb, forcing teams to rely on description, questioning, and a shared vocabulary to complete the task.

A typical implementation uses short cycles. Teams receive five minutes to scan the manual (approximately 30+ pages with multiple modules, rules, and exceptions). The instructor then starts a five-minute round in which the defuser must describe the bomb's modules (e.g., wires, buttons, symbols, keypads) while experts search the manual for the correct procedure and direct actions in the proper order. The rest of the class observes, noting moments of confusion, overload, and effective coordination. In the first round, bombs frequently "explode," which becomes a productive failure that makes communication gaps visible without real-world consequences.

Immediately after each round, the instructor facilitates a structured debrief. Students identify what went well, what failed, and what information they wished they had shared earlier. Discussion prompts focus on (a) how the team established (or failed to establish) a common language, (b) who assumed leadership and how leadership shifted, (c) whether the team divided labor by module or worked redundantly, and (d) how time pressure changed listening, turn-taking, and decision quality. Observers contribute feedback to widen learning beyond the team at the front of the room.

Subsequent rounds add complexity and intentionally require adaptation. A second team runs the same "easy" level after observing the first attempt. Without dedicated preview time, teams typically improve by delegating manual sections, asking more diagnostic questions, and using clearer descriptors. A third iteration increases difficulty by

adding additional modules and novel elements, which pushes students to practice critical thinking: teams must diagnose unfamiliar conditions, revise their approach, and avoid over-reliance on a single "expert" voice. A final iteration scales the team (e.g., nine students with multiple voices) and may include one student who has previously seen the bomb as a content expert. This configuration helps students practice coordination in larger, more ambiguous team environments where expertise is unevenly distributed.

Across implementations, the exercise functions as more than an icebreaker. It provides a shared reference point for later teamwork conversations about project planning, role clarity, and communication norms. Instructors can connect debrief insights to authentic marketing work (agency and client projects) where requirements shift, constraints appear midstream, and teams must coordinate across specialized roles. Assessment can be lightweight (e.g., a brief reflection submitted after class) or more formal (e.g., a rubric for communication behaviors such as clarity, confirmation, delegation, and adaptability).

For instructors considering adoption, the key is psychological safety and clear framing. Students should understand that mistakes are expected, the "explosion" is a learning outcome, and the debrief is where performance becomes insight. When implemented early in the semester, the activity accelerates team formation by giving groups a meaningful shared challenge and an immediate language for discussing how they work together. The panel will demonstrate the activity flow, share debrief prompts and reflection questions, and discuss practical considerations (time, technology, classroom setup, and accessibility) for integrating this gamified simulation into marketing and sales curricula.

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LESSONS LEARNED IN CREATING STUDENT ENTREPRENEURS

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SPECIAL SESSION PAPER

The importance of an entrepreneurial mindset for marketing students continues to grow. Today's employers seek innovative thinkers, and a number of students are interested in starting their own businesses and running their own companies. Thus during this special session we will examine the student-focused entrepreneurship lessons we have developed in our institutional education model. These allow us to encourage and support the creation of actual student-led and student-partnered businesses. In our small, private business school within a Midwestern university we offer three primary methods to support these students. The first is to collaborate with other stakeholders to foster experimentation and growth of small businesses and a community to support them. The second is to offer and in fact require students complete a significant internship experience while attending school. The third principle is to build upon past successes by sharing the stories of others who have been successful before them.

First, universities are uniquely prepared to foster start-up businesses. They have a wide variety of subject matter experts in multiple fields. They have access to different resources solo entrepreneurs often lack. Additionally, they have a strong reputation as centers of learning that attracts talent and spurs innovation with strong community and fellowship. Finally, as nonprofit organizations themselves universities are strategically positioned to foster and incorporate larger community resources to help support students who can in turn energize the local start up community even further. We also believe that in most cases, entrepreneurship is not something that you can teach; however, you need to create the proper soil for the seeds to blossom. The key to doing this is through incorporating larger community resources and getting students involved in events like 1 Million Cups and any local start-up opportunities such as a pitch challenge. One of the events that we have previously hosted, and which we are planning to bring back, is our Entrepreneur Fair or E-Fair. We have had a number of alumni who have started their own businesses and got their start at the E-Fair. Now, they want to give back as judges and mentors themselves.

Second, we believe that real life work experience is a non-negotiable for our students. In order to graduate with a business degree it is necessary to complete an internship or equivalent experiential learning program. This goes beyond the normal experiences in a classroom, simulations, or even the industry leaders and other guests we already bring into the classroom, and offers real world experiences to supplement the use of in-class simulations. It also often leads to future job placements for students. Having great connections, while keeping in mind of course the workforce needs of our business leaders, gives our students an incredible amount of opportunities. Often these internships can lead to job offers or, at the very least, students have a wonderful network community of business

leaders they can call upon for job references. Therefore, we highly recommend others follow the same path in requiring professional marketing or management internships for each in-person business student. Marketing especially can be an area where many of the nonprofits or smaller businesses don't have a solid handle, with many of them using other departments or relying on managers to figure out how to best place, price, and promote their products.

Third, we share specific examples which stand out as prototypes from whom other students, and educators in attendance from other schools, can learn from. The first entrepreneurship story we have to share is about an app-based local personal services business that is starting small but has big plans to scale up in the next couple of years. Another one is a local publishing business that was created by a team of recent graduates and has been in operation and successful for the better part of a decade now, with no signs of slowing down. The third example we plan to share is of an original product and health goods brand which was formulated and produced by a student working out a dorm room in order to address real-life health challenges. As existing products failed to help, out of frustration the student started creating their own concoctions. When one started working, others saw the results and started asking for it too. This student quickly saw the potential to help others with similar needs and relied in large part upon university professors and community resources in order to launch a business while still a student and then continue on building it full-time upon graduation. By sharing these and other examples of former students and successful business leaders in our classes, we plant the seeds of entrepreneurship in the next generation. In that way, through inspiration and cultivation, we watch and wait in eager anticipation as additional future entrepreneurs continue to grow and bloom.

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STRENGTHENING CONNECTIONS WITH MULTICULTURAL CONSUMERS IN THE INSURANCE INDUSTRY

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DEVELOPMENTAL PAPER

Until the beginning of 2025, corporate America had been on a forward moving trajectory to capture the increasing buying power of ethnic customers. Researchers have documented that the population growth, favorable demographics, and rising educational attainment among minority groups have contributed to increases in these segments' buying power. Studies show that the collective buying power of African American, Asian American, and Hispanic American consumers rose to $6.6 trillion in 2024 (Collage, 2025). After the social unrest of 2020, the pendulum swung in the direction of companies making concerted efforts to embrace this diversity. In the early months of 2025, we witnessed many of these same companies scaling back their efforts to focus on diverse customers, recruit more representative employees of their customer base, and work with diverse suppliers. From post-2020 to the start of 2025, many companies made public commitments to embrace the diversity of the marketplace with intentional and concerted actions. Today, under the influence of the current presidential administration, we see more companies following the example of the federal government in dismantling all diversity initiatives. While the buying power of diverse groups in the marketplace has continued to increase, many companies are restricting efforts to capitalize on this growth. For insurance companies, where relationships with customers are built on trust, reversals in social responsibility efforts can dismantle progress towards embracing diverse populations. The importance of trust is even more paramount when the trust is built on a promise, as is the case when buying and selling insurance.

When examining communication attempts to reach diverse audiences, we acknowledge the effectiveness of direct marketing, which is a company's attempt at making one-to-one connections with customers. Insurance companies should explore establishing connections between diverse sales agents and diverse customers. The lack of representation amongst insurance agents and brokers is noted in a 2022 survey referenced in the Commonwealth Fund's article entitled "State Health Equity Initiatives Confront Decades of Racism in the Insurance Industry." Their findings indicate that every non-White group is under-represented in the insurance industry (Clark & Monahan, 2023). To establish a more diverse and trusted broker industry, initiatives like Access Health in CT are slowly having an impact. Having received funding to establish a broker training and mentorship program, the Access Health program provides individuals from historically underserved communities the skills and tools to become health and life insurance brokers. The program covers the costs of students' classes, fees, and supplies and provides five months of mentorship. The goal is to create new pathways to insurance licensure and, therefore, increase insurance coverage in underserved communities through direct one-to-one

relationship building amongst diverse insurance agents/brokers and underserved communities.

There is also an opportunity to increase the pipeline of diverse students interested in pursuing careers in the insurance industry. Mirroring the problem of underrepresentation of every non-White group working in the insurance industry, we see similar underrepresentation in enrollment of diverse students in risk management and insurance programs in business schools. As middle and high school students explore career paths, those currently working in the insurance industry can help educate students as to the career opportunities that can be pursued with a risk management and insurance degree. Students from diverse backgrounds who have limited exposure to different career paths in insurance and risk management need knowledge of what a career as an actuary, claims adjuster, insurance broker, risk analyst and/or insurance broker entails. Students who gain this exposure and knowledge in middle and/or high school, are more likely to explore risk management and insurance major options in college.

In addition to the noted effectiveness of direct marketing as a tool to establish and strengthen connections with diverse customers in the insurance industry, it has also been well-documented how powerful word-of-mouth information is weighted amongst diverse communities. In today's digital marketplace, tremendous weight is placed on the power of influencers as viable, trusted sources of word-of-mouth information. Izea Worldwide surveyed over 1,200 customers in 2023 and, based on their findings they concluded, "Finding the right insurance company comes down to trust, and many shoppers look to friends, family and influencers for recommendations. Gen Z and millennials are known to search social media for those recommendations vs. just word-of-mouth alone. Insurance companies need influencer marketing to gain trust and connect with potential customers" (IZEA, 2023). The company notes statistics such as 42% of respondents ages 18 to 29 turn to TikTok to research a product or service before purchasing. In a similar light, 50% of all respondents have made a purchase after seeing a product used by an influencer. Demonstrating further evidence of the power of influencers, 43% of all female respondents say that social media influencers are the #1 way to get them to try new products (35% of all respondents) (IZEA, 2023). Insurance companies with high name recognition like Nationwide, Allstate, and Prudential have tapped into the power of influencers as a regular communication strategy to connect with diverse customers. These companies recognize that connections between the right influencers and diverse customers is strengthened by the influencers' relatability, authenticity, and trust (IZEA, 2024).

Companies who establish targeted practices to connect to and strengthen connections with the growing segment of diverse customers will reap long-term benefits of these communities' increasing buying power and demand for financial services. These benefits are noted in an April 2023 report published by the McKinsey Institute for Black Economic Mobility (Abrams S. et al., 2023). When examining Black customers, they found that, "More than half of Black survey respondents said they are looking to increase spending on financial services. Specifically, they want solutions that help build long-term wealth, including products for retirement planning (Abrams S. et al., 2023, p. 21)." McKinsey researchers found that, "Key stakeholders in financial services—such as retail banks, wealth managers, and insurance providers—can contribute to more-equitable experiences

for Black consumers and earn their loyalty and spending. We estimate that from 2022 to 2030, the financial-services providers that offer more-equitable, more-accessible, and better products and services can win $225 billion in cumulative spending from Black consumers (excluding organic growth) (Abrams S. et al., 2023, p. 21)." These findings substantiate the long-term financial benefits of companies in the insurance industry that take intentional steps to establish and build their connections with diverse consumers.

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STUDYING PARASOCIAL RELATIONSHIPS AND BEHAVIORS IN PODCAST CONSUMERS

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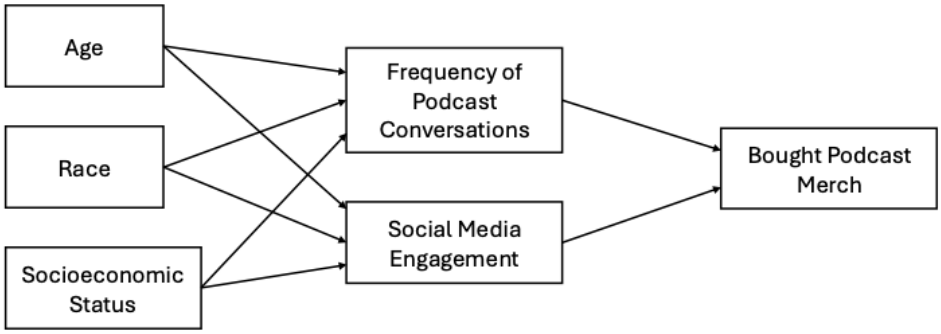
DEVELOPMENTAL PAPER

Podcasts are a popular virtual product many Americans consume. This developmental paper examines how parasocial relationships, or one-sided relationships, common to podcast listeners impact these consumers. Existing research identifies potential desirable outcomes of parasocial relationships- positive perceptions, higher purchase intentions, and stronger word of mouth intentions- that many marketing managers pursue. We propose that podcast listeners "consume" parasocial relationships to boost their self-concept through symbolic self-completion theory, which may offer marketing managers a new way to build desirable outcomes with consumers. Figure 1 visually presents our conceptual model.

Figure 1

Conceptual model of how podcast relationships help consumers complete their self-concept.



Our preliminary results indicate that podcast consumers who use parasocial relationships to strengthen their self-concept are more likely to engage in positive word of mouth (both in-person and online) and purchase podcast merchandise, both outcomes with desirable implications for marketing managers looking for alternative ways to boost customer word of mouth and purchases. This submission is a developmental paper submission, representing research in its earlier stages.

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MARKETING AS A PUBLIC POLICY INTERVENTION IN CHILD ABUSE PREVENTION: INTERRUPTING THE ESCALATION CYCLE AS A DEVELOPMENTAL CONCEPTUAL MODEL OF DISPLACED ANGER AND EMOTIONAL DYSREGULATION

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DEVELOPMENTAL PAPER

Public policy still faces a major challenge: Child abuse remains one the most insidious, persistent and devastating public health issues in the United States, and abroad. Despite extensive awareness of the child abuse problem and the existence of an infrastructure that includes reporting at all levels, current policy interventions narrowly focus on the post-harm response rather than preventative measures that produce adverse childhood effects (ACEs). This developmental paper is conceptually centered, but provides a rigorous framework for empirically exploring the role of displaced anger, emotional dysregulation, and marketing as a public policy function. These pathways are centered on the emotional pattern-making and are cognitively incorruptible, and marketing—which is traditionally focused on the conceptualization of a system for influencing consumer decisions and mapping consumer journeys—must serve as a public policy instrument capable of disrupting escalation before child harm can occur. By repositioning marketing as a central mechanism for attentional capture, emotional reframing, and behavioral interruption for dysfunctional adults of young children, this paper lays the foundation for a potential new subfield: Child Abuse Interruption Marketing.

Public policy literature consistently reports a recognizable pattern: Interventions tend to activate post-harm, which occurs through child protective reporting and subsequent investigations, and criminal justice protocol (Cross et al., 2012). Upstream public policy approaches these issues with parenting programs, resource support, and community education and have some value though they are not designed to intervene before or during acute emotional dysregulation moments where abusive behavior erupts (Fortson et al., 2016). Family violence research paired with developmental psychology and behavioral science suggest that abusive episodes emerge from cycles often triggered by a stress-inducing situation, cognitive overload, and emotional flooding (Dodge et al., 1990; Stith et al., 2009). These predictable cycles likely begin with displaced anger, which is defined as a psychological process where frustration or anger from one work stress, financial hardship, or relational conflict; the fundamental concept of displaced anger is the reaction to stressors and redirection to vulnerable children, the safer target (Averill, 1983). Children subject to violence, displaced anger, due to their lack of social power, physical strength, or

locational or situational recourses, thus they become victims of adult emotional displacement (Slep & Heyman, 2004).

When in isolation, displaced anger does not have a place to land; therefore, the risk escalates when it is coupled with adult emotional dysregulation, which is the temporarily impaired ability of adults to modulate their emotional intensity (Gratz & Roemer, 2004). Adult emotional dysregulation is a predictor of reactive aggression, destructive discipline, and coercive parenting styles (Rodriguez & Richardson, 2007). This type of dysregulation narrows the attentional focus of adults, accelerates escalation speed, and reduces access to existing self-regulatory strategies. With the activation of dysregulation, abusive pathways follow a predictable sequence, much like the process of developing content and communicating with target audiences though not nearly as socially disruptive: triggering event, anger activation, cognitive overload, lowered control, and punitive action (Dodge et al., 1990). This sequence unfolds within seconds to minutes, which could contribute to the emotional breakdown witnessed at child abuse discovery and charge, making it difficult for traditional public policy mechanisms to reach.

The developmental model presented in this paper conceptualizes child abuse risk as a serial emotional-behavioral pathway, akin to consumer journeys. Emotional and cognitive processes along this pathway display interruption sensitivity, leading to a behavioral outcome. Research in affective science indicates that emotional escalation can be slowed or redirected by an unexpected stimulus, message narrative reframing, or attentional shifts (Pfattheicher et al., 2021). This pathway presents an opportunity for public policy intervention in an untraditional way, intervening through attentional mechanisms rather than punitive after-the-fact responses. Marketing is that intervener.

The ways in which marketing can intervene are as follows. First, marketing can serve as a pattern disrupter, which involves the use of repeated, unexpected visual, auditory, and/or contextual stimuli that interrupt the escalation sequence by shifting attentional focus (Itti & Koch, 2001). The tactical approach to providing brief disruptions through creative visualization of abuse, humanizing the abused child, can slow emotional momentum, creative a cognitive and behavioral pause for self-regulation. Second, norm reframing uses message framing to shift perceived acceptability of harsh punishment and coercive parenting. Studies positions message framing as a behavioral deterrent in the context of physical discipline, reducing aggressive responses (Gershoff & Grogan-Kaylor, 2016). Third, creatively activating generalized empathy can leverage narrative perspective-taking to increase parental empathy, which is negatively related to punitive-style or coercive parenting (Decety & Cowell, 2014). Marketing through the use of media can portray the vulnerability of children in an emphatic manner, which reduces abusive impulses. Fourth, crisis-point nudging relies on timed digital messages or environmental cues delivered at high-risk moments, such as evenings and weekends, when family stress peaks (Milkman et al., 2021).

When viewed from the perspective of public policy, these marketing mechanisms expand the toolkit of the modern policymaker, child advocacy leaders and organizations, educators, and community institutions. Traditional interventions rely on mandated reporters, crisis hotlines, and after-the-fact investigations. In contrast, contemporary or marketing-based interventions can operate upstream and in real time, targeting the

psychological and emotional mechanisms that produce abusive behavioral outcomes. Trauma-informed communication further enhances marketing interventions by emphasizing non-shaming, supportive, and culturally sensitive messaging (Bath, 2015). Combining trauma-informing messaging with marketing strategies creates an ethical and effective system of behavioral interruption.

The developmental model proposed here integrates displaced anger, emotional dysregulation, and abusive pathway activation with marketing-based moderators such as empathy activation, attentional capture, and norm reframing through message framing. Specifically, this pathway demonstrates an interaction that is dynamic, mitigating escalation and restoring a sense of emotional and cognitive control. Reduced emotional dysregulation enhances behavioral flexibility, increasing the likelihood that caregivers engage in adaptive over harmful, abusive behaviors.

Future research should examine the effectiveness of different types of interruption stimuli, explore the cultural sensitivity of messaging strategies, testing time windows across traditional and contemporary platforms and modality of interventions, and investigate the long-term influence of interruption systems on parental behavior. Scholars should explore cross-cultural variations in disciplinary norms as different cultures understand parental response to emotional dysregulation may be considered justified, digital accessibility, and willingness to engage in de-escalation content.

This developmental conceptual paper contributes to public policy and social marketing by demonstrating how marketing can prevent child harm, especially to children in vulnerable populations across cultural groups. By reframing marketing as a commercially focused vehicle and socially-stimulated discipline that only serves to make populations aware of various issues, it can serve as an interdisciplinary collaborative initiative of scholars across domains, policymakers, child psychologists, and community organizations designed to meet the needs of its community more closely than broader regulatory bodies. A marketing focused model incorporating the constructs presented in this paper can disrupt and interrupt child abuse and provide a necessary complement to traditional reporting systems, while offering a theoretical foundation for child harm prevention.

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EXPLORING STUDENT ATTITUDES TOWARD FACULTY USE OF AI IN THE CLASSROOM: PERSPECTIVES ON TEACHING EFFECTIVENESS AND ETHICAL CONSIDERATIONS

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DEVELOPMENTAL PAPER

The rapid integration of generative artificial intelligence (AI) tools such as ChatGPT into higher education has created new opportunities and challenges for faculty. While significant attention has focused on student use of AI for academic work, less is known about how students perceive faculty use of AI in course preparation, delivery, and assessment. As institutions develop policies governing AI, student voices remain largely absent from these deliberations, creating a critical gap in our understanding of stakeholder perspectives. This study addresses that gap by investigating student attitudes toward faculty AI use through a sequential mixed-methods design at a private Midwestern university.

Drawing on principles of reciprocity and procedural fairness, this research employed two phases of data collection. In Phase 1, six undergraduate business students participated in a 75-minute focus group discussion exploring perceptions of AI use across course preparation, delivery, assessment, and general faculty adoption. Thematic analysis was conducted on the transcribed data. In Phase 2, a comprehensive survey instrument was developed from focus group findings and existing literature and administered to undergraduate business students via Qualtrics during Spring 2025. The survey comprised five sections assessing attitudes toward AI in course preparation, course delivery, assessment, and general perceptions, all measured on 7-point Likert scales.

Qualitative findings revealed nine major themes characterizing student perspectives. Students consistently endorsed AI as a supplementary tool rather than a replacement for human instruction. Three core principles emerged as central to student expectations: transparency, reciprocity, and moderation. Students strongly advocated for mandatory disclosure of faculty AI use and expressed concern about fairness when institutions restrict student AI use while remaining silent on faculty practices. Students demonstrated differential acceptance based on AI application: administrative tasks, idea generation, and syllabus creation were strongly accepted, while AI-generated video content, AI grading of qualitative work, and sole reliance on AI examples were strongly rejected. Quality control was deemed essential, with students insisting that professors review all AI-generated content before classroom use. Additional themes included data privacy concerns when student work is uploaded to AI platforms and the importance of preserving authentic student-faculty relationships.

These findings carry important implications for faculty practice and institutional policy. Faculty should treat transparency as a default practice, maintain quality control over AI-generated content, preserve human judgment for high-stakes decisions such as grading qualitative work, and apply parallel standards to student and faculty AI use. Institutions developing AI policies should address both student and faculty use, supported by professional development programs. This study extends theories of procedural fairness and reciprocity to the domain of educational AI, demonstrating that students apply nuanced, context-specific evaluations rather than monolithic pro- or anti-AI orientations.

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WHEN SERVICES FEEL HUMAN: ANTHROPOMORPHISM AND CONSUMER WILLINGNESS TO SUBSCRIBE

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DEVELOPMENTAL PAPER

Anthropomorphism—the tendency to attribute human-like traits, emotions, and intentions to nonhuman agents—has become an important concept in consumer research. As consumers interact increasingly with brands and technologies lacking human presence, anthropomorphism helps explain how they develop emotional and relational bonds with such entities (Epley, Waytz, and Cacioppo 2007). Prior studies show that anthropomorphism makes products and services feel more familiar, approachable, and socially engaging (Kim and McGill 2011). When brands display human-like warmth or empathy, consumers perceive them as social partners rather than impersonal tools. By reducing psychological distance and evoking feelings of intimacy, anthropomorphism encourages the formation of relational attachments to otherwise nonhuman entities (Aggarwal and McGill 2007; Waytz, Cacioppo, and Epley 2010).

These human-like perceptions are especially relevant in contexts requiring sustained engagement, such as subscription-based services. Unlike one-time purchases, subscriptions involve recurring financial and behavioral commitments that heighten perceived risk and uncertainty about future satisfaction (Datta, Knox, and Bronnenberg 2018). Thus, consumers evaluate not only functional benefits but also relational qualities—whether the brand seems caring, dependable, and responsive (Morgan and Hunt 1994; Oliver 1999). In this setting, anthropomorphism acts as a relational cue that humanizes the service, signaling warmth and reliability. By framing the brand as a caring partner rather than a faceless provider, anthropomorphism can reduce hesitation and enhance willingness to subscribe (Epley et al. 2007; Qiu and Benbasat 2009; Waytz et al. 2010). Taken together, these arguments suggest that anthropomorphism enhances consumers' willingness to join subscription services by humanizing interactions, reducing perceived risks, and fostering emotional attachment. Therefore, we put forth the following hypothesis:

Research Hypothesis: Anthropomorphism increases consumers' willingness to join the subscription service.

One hundred sixty undergraduate and graduate students from a West Coast university in the United States (average age = 26.44, SD = 7.96, 61.3% female) participated in this study in exchange for extra credit. At the outset, participants were assigned to view one of two versions of an ad (anthropomorphized vs. nonanthropomorphized) for a fictitious wine subscription service called VinoGo. Following prior research, anthropomorphism was manipulated through two types of cues. First, anthropomorphism was manipulated through

a visual cue in the advertisement: the anthropomorphized version featured an animated character resembling a sommelier, whereas the non-anthropomorphized version did not include this character. Anthropomorphism was also manipulated through verbal cues in the ad copy: the anthropomorphized version employed first-person language (e.g., "I am VinoGo Wine Subscription! I send you six bottles of my delightful wines quarterly"), while the nonanthropomorphized version used third-person language (e.g., "This is VinoGo Wine Subscription! It sends you six bottles of its delightful wines"). Participants were then asked to indicate their willingness to subscribe to the service, which we measured with three items, all using the following response option range: 1 = "Strongly Disagree," and 7 = "Strongly Agree". On the following page, participants were asked to answer several questions to ensure that the manipulations were held. Consistent with prior research, as a manipulation check on anthropomorphism, participants responded to the following statements: "It seems almost as if VinoGo has (1) its own beliefs and desires, (2) consciousness, (3) a mind of its own" (1 = Strongly Disagree, 7 = Strongly Agree). They also rated the extent to which the product has come alive in their mind (like a human). We summed the responses to these items to form an anthropomorphism index. Finally, respondents reported their attitudes toward the brand, provided brief demographic information, indicated the purpose of the study, and were thanked for their participation. None of the participants correctly guessed the true nature of the research question.

Independent samples *t*-tests were conducted to evaluate the significance of the impact of anthropomorphism. The test showed that participants in the anthropomorphized (vs. nonanthropomorphized) condition perceived the product as more humanlike (M_{anth} = 3.62, SD = 1.56 vs. $M_{nonanth}$ = 2.89, SD = 1.28; $t(158) = 3.221$, $p < .001$). There were no significant differences in brand attitudes between the two conditions (M_{anth} = 4.61, SD = 1.41 vs. $M_{nonanth}$ = 4.38, SD = 1.40; $t(158) = .209$, $p > 0.1$). There were significant differences between the anthropomorphized and nonanthropomorphized conditions in consumers' willingness to subscribe to a service (M_{anth} = 3.40, SD = 1.84 vs. $M_{nonanth}$ = 2.77, SD = 1.49; $t(158) = 3.39$, $p < .01$). In support of our hypothesis, the independent samples *t*-tests revealed that anthropomorphism significantly influenced consumers' willingness to subscribe for a subscription service, leading to higher willingness to subscribe for the anthropomorphized (vs. nonanthropomorphized) service. The results of this study offer initial support for our prediction that anthropomorphism increases consumers' willingness to subscribe for a subscription service

This research contributes to existing literature on the positive effects of anthropomorphism in the marketplace (Aggarwal and Mcgill 2012; Chen, Wan, and Levy 2017). This research also contributes conceptually by highlighting the role of relational bond and trust in the context of subscription services. Finally, our research has important practical implications for the marketing of online subscription services.

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SMART OBJECTS' AGENCY AND CONSUMER ACCEPTANCE: AN INTERPERSONAL PERSPECTIVE

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DEVELOPMENTAL PAPER

Consumers increasingly interact with smart and connected objects, creating new relationships and generating novel relational outcomes (Wang, 2024). Smart objects have gained agentic features that allow them to modify and actively shape user interactions (Rokonuzzaman et al., 2022). However, few studies have examined consumer perception of these emerging capacities before purchase (Querci et al., 2024), partly because smart objects are still viewed through traditional adoption models (Basarir-Ozel et al., 2023).

Novak and Hoffman (2019) argue that consumer-smart object relationships are social and interpersonal in nature. From these interactions emerge social patterns that can be understood through interpersonal mechanisms structured by the expression of consumers' and smart objects' agencies (Novak and Hoffman, 2019; Schweitzer et al., 2019). Researchers have been invited to study how consumers perceive smart objects' agency to better understand its implications for consumer acceptance (Chouk & Mani, 2022; Attié & Meyer-Waarden, 2022), yet these implications remain underexplored (Querci et al., 2024).

This research fills this gap by exploring how consumers perceive smart objects' agentic capacities and how this perception influences acceptance. The study investigates three characteristics of smart objects' agency: (1) the level of agency, (2) the origin of agency, and (3) the principle of reciprocity of agency.

Study 1 (N=450) examined a coffee machine with three agency levels (low, medium, high) to explore how agency level influences perceived usefulness, ease of use, and attitudes toward usage. Results indicated that high agency levels induced lower perceived usefulness, ease of use, and attitudes toward usage, suggesting that smarter is not always better. Lower and medium agency levels showed similar perceptions, inviting companies to question the necessity of racing to design objects with increasingly advanced agentic features.

Study 2 (N=300) investigated a connected bin with two origins of agency (native and device-enabled) to examine how origin influences perceived agency level, usefulness, ease of use, and attitudes toward usage. Results showed that native and device-enabled smart objects were perceived identically across all measures. This invites companies to consider developing device-enabled smart objects instead of native ones and questions the return on investment for native smart object development.

Study 3 (N=300) examined a highly agentic connected roller device for windows across two samples: mobility-reduced participants and those with no mobility issues. This study explored the reciprocity principle of agency, which posits that users engage in relationships considering both their own and the interactant's agency levels. Both samples

perceived the same level of smart object agency. However, mobility-reduced participants (lower human agency) expressed lower perceived usefulness, ease of use, and attitudes toward usage, illustrating interpersonal dynamics in smart object perception. Paradoxically, consumers most in need of the device perceived it as too agentic to handle due to their reduced mobility.

This research invites researchers and managers to consider the implications of smart objects' agency through its three main characteristics (level, origin, and reciprocity) when designing and developing smart objects that meet not only functional needs but also the interpersonal and relational needs expressed by consumers.

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IMMERSIVE SHORT-TERM STUDY ABROAD AND TECHNICAL COMPETENCE IN SPORT SPONSORSHIP

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DEVELOPMENTAL PAPER

Research on short-term study abroad (STSA) programs consistently validate their positive impact on "soft skills," such as intercultural sensitivity and global citizenship (Niehaus & Nyunt, 2023; Tarrant, et al., 2014). While recent research has begun to link STSA to tangible employability outcomes (Potts, 2022), a gap remains in scholarship of teaching and learning (SoTL) regarding the direct comparison of domain-specific technical competence. Recent scholarship in marketing education suggests that STSA programs are uniquely positioned to bridge the gap between theoretical knowledge and the application of global competencies required in modern business environments (Servi et al., 2023). Additionally, LeCrom, et al. (2015) found that sport-related STSA programs have the potential to impact student global mindedness. As a result, the primary objective of this study is to analyze the impact of an immersive STSA program on students' ability to develop a technically sound and contextually feasible marketing initiative. Specifically, it seeks to compare student learning outcomes related to sport sponsorship competence between the immersive study abroad course and a traditional domestic section of the same course.

Sport sponsorships are a strategic exchange relationship wherein a commercial entity provides resources to a sport property in return for rights to association and commercial advantage (McCarville & Copeland, 1994). Moving beyond simple advertising placement, modern sponsorship relies heavily on congruency theory, which posits that the efficacy of the partnership is contingent upon the perceived "fit" between the sponsor and the sponsee (Groza, et. al., 2012). It has been argued that the importance of "fit" and authenticity are critical to modern sponsorship success (Cornwell, 2019). Consequently, developing competence in this domain requires students to master the technical intricacies of proposal design, moving from creative ideation to the strategic identification of shared brand equity, audience alignment, and measurable return on investment (Southall & McKelvey, 2008).

This study utilizes a quasi-experimental, post-test only design to explore differences in student competency in sport sponsorship strategy. The independent variable is the pedagogical environment (STSA vs. Traditional Class), and the dependent variables are the six dimensions of sponsorship potential, as measured by an adapted version of Cornwell's (2020) Assessing Sponsorship Potential (ASP) Scorecard. Those six dimensions are: Preparation, Relationships, Overlapping Values, Audiences, Objectives, and Synergies.

The treatment group (n = 30) traveled to Munich, Germany at the end of the Spring 2025 semester and the control group (n = 28) will participate in a traditional, on-campus version of a sport sponsorship course during the Spring 2026 semester. Both groups were (will be) provided opportunities to network with, learn from, and present to marketing

executives on both sides of the sponsorship agreement. The final artifact of interest in this study is a sponsorship proposal document and corresponding presentation. Assignments will be analyzed and scored using the adapted version of the ASP Scorecard (Cornwell, 2020). An Analysis of Covariance (ANCOVA) will be employed to analyze group differences while controlling for relevant academic experience differences (e.g. year in school, number of marketing courses taken, major/minor). This research will contribute to the marketing and sport management SoTL by providing empirical evidence on the impact of international immersion on the development of technical skills. Preliminary analysis of the treatment group data indicated that 25 of the 30 students were business majors, 11 students had taken 3 marketing courses, 10 took 2 marketing courses, 8 took 1 marketing course, and 1 student had not taken a marketing course prior to the course that was studied. The students in the course were largely seniors (17) and juniors (9). There were also 4 sophomores enrolled in the course. Overall, student scores on the modified ASP Scorecard were as follows: Preparation (8.17/10), Relationships (8.20/10), Overlapping Values (27.33/30), Audiences (17.87/20), Objectives (18.23/20), and Synergies (9.53/10). Upon completion of the spring 2026 course, an ANCOVA will be conducted. The full methodological design, and a project status update will be presented at the conference.

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FROM CONSUMPTION TO CONSCIOUS REFUSAL: THE NO BUY MOVEMENT AS A CHALLENGE TO CONSUMER BEHAVIOR MODELS

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DEVELOPMENTAL PAPER

For decades, the study of consumer behavior has operated under a quiet assumption: that the "good life" is a curated collection of acquired objects and experiences. Traditional models suggest that individuals are driven by a perpetual cycle of need-satisfaction, where purchasing serves as the primary vehicle for psychological and social fulfillment. However, a growing cohort of consumers is beginning to find liberation not in what they own, but in the "empty space" they protect. The No Buy Movement has emerged as a profound response to a culture that equates material abundance with personal success. This paper explores the intersection of traditional theory and this movement, reframing the act of not buying as an intentional, life-affirming exercise of agency rather than a state of deprivation.

Traditionally, frameworks like Maslow's Hierarchy of Needs (Shutterstock, n.d.) assume that consumption serves as a ladder toward self-actualization, where material security and status-seeking precede higher-order growth.

In contrast, the No Buy Movement represents a fundamental pivot; it suggests that true autonomy is found in the conscious refusal of the market's "obligatory" invitations. For these participants, non-consumption is a tactical reclamation of focus against the relentless psychological noise of overconsumption. By rejecting the pressure to participate in "haul culture" or impulse-driven trends, individuals move from being passive targets of marketing to active architects of their own minimalist lifestyles.

This reclamation of self creates a significant friction point with Belk's (1988) framework, which posits that individuals define their identities through material

possessions—the idea that "we are what we have." Under the No Buy lens, identity is instead forged through what one refuses to own.

This shift aligns with Self-Determination Theory (Deci & Ryan, 2000), where individuals seek to fulfill intrinsic motivations—such as ethical alignment, environmental stewardship, and financial independence—rather than responding to the extrinsic status markers of material wealth. It is an evolution from an identity of *accumulation* to an identity of *alignment*, where the consumer prioritizes deep-seated values over the immediate gratification of a transaction.

Contemporary research supports this shift toward "identity through absence." Case studies in digital behavior, such as visual curation on platforms like Pinterest, reveal that consumers can satisfy the human urge for discovery and identity-building through imagery without the physical burden of ownership (Jing et al., 2016). Similarly, research into the fast-fashion industry indicates that while "fear of missing out" (FOMO) traditionally drives purchase intentions, the No Buy Movement serves as a deliberate counter-strategy to maintain environmental ethics (Bläse et al., 2024). Ultimately, this movement proves that the human spirit does not require a constant influx of goods to achieve success; rather, the power to *not* buy is perhaps the most sophisticated form of agency in the modern marketplace.

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AI-ENABLED WEARABLES AND SOCIAL MEDIA: A PROPOSED FRAMEWORK FOR EXAMINING CONSUMER BEHAVIOR

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DEVELOPMENTAL PAPER

Smart Wearables are gaining popularity, and more consumers have started to use smart watches, smart glasses, VR headsets in their daily lives. Wearable technology brings benefits to fitness, entertainment, business and other areas, although the comfort and usage of wearables are still discussed. Integration of AI and social media into wearables revolutionizes customer experience through personalization, voice command, hands free interactions and AI influencers. Analyzing wearable technology might contribute to the digital marketing field leveraging AI driven wearables and social media apps.

Customer interaction with brands can increase if customers get offers and personal messages to their smart watches or smart glasses (Huble, 2015). Photos can be captured while social media users engage with posts by using voice command feature in wearable technology. Huawei works with influencers like Pamela Reif (Molenaar, 2025). Smart rings are used to share the progress toward fitness goals. AI TikTok influencers also share motivational messages and congratulate you for your fitness progress via wearable devices (TikTok, n.d.). Meta AI studio helps generate memes, answer common DM questions and give travel advice (Meta, 2024). Meta Ray Ban AI glasses can live stream to social platforms like Instagram and Facebook (Meta, 2025). Samsung's around the ear EEG wearable detects individual video performance for personalized experiences (Samsung, 2025). Data collection might bring privacy concerns besides its benefits due to social media apps interacting with smart watches such as sending a fitness challenge by comparing users' steps with friends (Li et al., 2023). Privacy enhanced wearables need to be improved to ensure customer safety. A framework is proposed to show how integration of AI and social media into wearables impacts consumer behavior. The framework focuses on four key areas: user interaction features, personalization, data protection and AI influencer driven content. This study can help marketers communicate with customers more efficiently using wearable devices.

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FEATURES AND BENEFITS: A COMMON MISUNDERSTANDING

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DEVELOPMENTAL PAPER

In sales, we explain features and sell benefits. This is a critical premise in sales culture. The trouble is there is a common misunderstanding of what a feature is and what a benefit is. In this pedological study, there are three components. First, we provide a case study for marketing and sales educators. The aim of this case study is to help students and sales professionals better understand the differences between features and benefits. The case study involves evaluating a credit card website. Typically, participants are unable to correctly identify what a feature is and what a benefit is. Second, we provide definitions for features and benefits and provide examples in sales contexts. Then, we propose an exploratory study measure how prevalent the misunderstanding between features and benefits are. We look to examine college students, sales professionals, and marketing professors to better understand how deep the misunderstanding of features and benefits are. Finally, we provide managerial implications on how to implement the principles outlined in this paper.

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ADAPTING SALES EDUCATION TO THE RISE OF ANALYTICAL SELLING SKILLS

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DEVELOPMENTAL PAPER

Hiring managers continue to emphasize communication, rapport building, and presentation skills when evaluating new sales talent, but expectations for early-career sales professionals have shifted. Contemporary sales roles increasingly require the ability to interpret data, use selling technology, and justify value with evidence. In this developmental paper, we define analytical selling skills as the applied capability to use data, tools, and business reasoning to make and explain selling decisions across the sales process. In scope are competencies such as forecasting accuracy, account and opportunity prioritization logic, dashboard interpretation, ROI and value justification, and evidence-based territory decisions. Out of scope for this paper are advanced data science techniques and specialized statistical modeling that exceed typical undergraduate sales course expectations.

Recent research underscores the urgency of this shift. A large-scale mixed-methods study of sales job postings and executive interviews identified analytical skills as a frequently requested competency and characterized analytical selling along two core dimensions: generating customer insight through research and data interpretation, and managing pipeline and territory decisions through analytics (Peeker et al., 2022). Survey evidence further indicates that analytical skills are associated with higher sales performance and can amplify the impact of effort on outcomes (Peeker et al., 2022). Yet many undergraduate sales curricula remain centered on interpersonal skill development and role-play, leaving limited structured opportunities for students to practice CRM-based analysis, insight generation, or business case development.

To strengthen instructional design, we anchor this work in experiential learning and student confidence development. Experiential Learning Theory suggests analytics competence develops when students repeatedly engage in concrete analytical tasks, reflect on outcomes, form transferable concepts, and experiment with improved approaches in subsequent selling scenarios (Kolb, 1984). In parallel, self-efficacy theory implies that students who view themselves primarily as relationship-oriented sellers may avoid analytical tasks unless educators provide scaffolded mastery experiences, clear performance criteria, and supportive feedback that builds confidence over time. Together, these lenses highlight why integrating analytics requires more than adding content; it requires purposeful, practice-based learning cycles and assessment structures that normalize analytical work as part of professional selling identity.

We propose a simple curricular design template that educators can adapt: Module - Skill - Tool - Assignment - Assessment. Example modules include: (1) Customer Insight Analytics (skill: insight generation; tools: industry databases, basic visualization; assignment: competitor and buyer analysis memo; assessment: insight quality and actionability rubric); (2) Pipeline and Territory Analytics (skill: prioritization and forecasting; tools: CRM simulation or sandbox; assignment: pipeline review and forecast justification; assessment: evidence use and decision logic rubric); (3) Analytical Storytelling and Business Case Development (skill: value justification; tools: ROI spreadsheet and value calculator; assignment: value-based proposal and presentation; assessment: clarity of narrative, financial reasoning, and customer relevance rubric). These modules can be embedded within existing role-play and presentation activities so students learn to connect data-driven insights to relational selling behaviors.

Finally, we preview barriers programs commonly face when integrating analytics: faculty comfort level with analytics and CRM tools, limited access to platforms and datasets, curriculum crowding, and uneven student preparation. Practical mitigation strategies include partnerships with CRM vendors or local employers, use of low-cost simulations, shared departmental templates and rubrics, faculty micro-trainings, and incremental integration that preserves core selling skill development while increasing analytical expectations across assignments. We close by outlining future research directions, including comparative effectiveness of instructional methods, longitudinal development of analytical selling identity, and how competitions and experiential projects can accelerate analytics competence. The goal is to help sales educators align curricula with modern marketplace demands while providing a clear, implementable pathway for teaching analytical selling skills.

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SIGNALING FAIRNESS: HOW REPUTATION AND TRANSPARENCY SHAPE TRUST IN AI-DRIVEN PRICING

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DEVELOPMENTAL PAPER

Artificial intelligence is increasingly used to determine prices across digital platforms such as ride sharing services, online retail, and travel booking systems. These technologies allow organizations to adjust prices dynamically based on demand, consumer behavior, and market conditions. While algorithmic pricing improves efficiency and responsiveness, it also raises concerns about fairness and trust. Consumers often do not understand how automated pricing systems work or why prices change. When pricing processes appear unclear or inconsistent, individuals may question whether organizations are acting fairly. As a result, perceptions of fairness play an important role in shaping trust in AI driven pricing systems.

The growing use of algorithmic pricing raises an important question: how do individuals evaluate fairness when pricing decisions are made by automated systems rather than human decision makers? Organizational Trust Theory (Mayer et al., 1995) and Signaling Theory (Spence, 1973) provide a useful framework for understanding this challenge. Organizational Trust Theory explains that trust develops through perceptions of ability, benevolence, and integrity. In traditional business settings these judgments emerge through interpersonal interactions and observed behavior. In AI mediated environments, however, individuals cannot easily observe human intent behind decisions. Instead, they rely on signals from the organization that communicate ethical intent and accountability. Signaling Theory explains how organizations convey these cues under conditions of uncertainty.

Within this framework, corporate reputation represents a history-based signal of integrity that reflects a company's ethical conduct and reliability over time. A strong reputation signals that the organization has consistently acted responsibly and respected stakeholder expectations. AI transparency represents a present-day signal of accountability by clarifying how pricing decisions are generated and monitored. When organizations communicate how algorithms function, what data is used, and how fairness is evaluated, stakeholders may interpret the pricing process as more legitimate and procedurally fair. In contrast, AI opacity reflects the absence of clear information about how algorithmic decisions are produced. Opaque systems create uncertainty and may lead consumers to assume that organizations are hiding opportunistic or manipulative practices. Understanding how these organizational signals shape fairness perceptions contributes to the growing literature on algorithmic decision making and consumer trust in automated systems.

Building on this logic, corporate reputation and AI transparency are expected to increase perceptions of procedural fairness, while AI opacity is expected to reduce fairness

perceptions. These relationships are examined using a quantitative cross-sectional survey design. Participants will be adult consumers in the United States who have previously interacted with AI based pricing systems. Respondents will be recruited through Prolific and will complete an online survey conducted on Qualtrics. Participants will read a short vignette describing a well-known company that uses AI to dynamically adjust prices. After reading the scenario, respondents will evaluate the organization using established scales measuring corporate reputation, AI transparency, AI opacity, and perceived procedural fairness. Measures are adapted from prior research including the Reputation Quotient scale, the Organizational Transparency scale, and widely used procedural justice measures.

Data will be analyzed using IBM SPSS and AMOS. Preliminary analyses will assess reliability, descriptive statistics, and construct validity through confirmatory factor analysis. Hypotheses will be tested using hierarchical regression models in which perceived procedural fairness serves as the dependent variable. Corporate reputation, AI transparency, and AI opacity will be included as predictors while demographic characteristics such as age, gender, education, income, and familiarity with AI pricing will be included as control variables.

The findings are expected to extend Organizational Trust Theory into technology mediated contexts. Prior work has often emphasized technical aspects of algorithm design, bias mitigation, or explainable AI models. Less attention has been given to how organizations communicate fairness and ethical intent when automated systems guide pricing decisions. Integrating Organizational Trust Theory with Signaling Theory highlights how organizational cues influence stakeholder interpretations of algorithmic pricing systems. Fairness perceptions therefore depend not only on technical accuracy but also on how organizations communicate integrity and accountability.

The analysis also offers practical implications for organizations implementing AI driven pricing. Firms can strengthen stakeholder trust by managing signals of fairness through transparent communication and responsible governance of algorithmic systems. Explaining how pricing algorithms operate, what data they rely on, and how fairness is monitored can reduce uncertainty and reinforce perceptions of ethical behavior. In this way, fairness becomes both an ethical principle and a strategic signal that organizations can use to maintain legitimacy as automated decision making becomes more common.

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EXPLORING THE TEST ENVIRONMENT'S IMPACT ON COLLEGE STUDENT TEST ANXIETY: TECHNOLOGY AND TEST FORMATS

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DEVELOPMENTAL PAPER

The rapid integration of generative artificial intelligence (AI) tools into higher education has prompted significant changes in examination practices. Many institutions have shifted toward paper-and-pen exams and enhanced online proctoring in response to concerns about AI-assisted academic dishonesty (Eaton & Turner, 2020). While these measures aim to preserve academic integrity, their impact on student anxiety remains underexplored. This study investigates how AI-era examination changes—including format shifts, proctoring surveillance, and AI detection tools—affect student test anxiety across multiple dimensions. This study uses a mixed-methods approach—combining focus group interviews with a quantitative survey—to investigate how AI-era examination changes affect student test anxiety across multiple dimensions.

Based on the focus group interviews, the analysis identified six themes: (1) affective responses to examinations, (2) AI-driven changes in exam design and administration, (3) trust erosion and anxiety about AI detection, (4) paper-and-pen exam anxiety, (5) concerns about online proctoring, and (6) preferences regarding the exam environment and support. A particularly salient finding was that students perceived AI detection false-flagging anxiety as more stressful than exam anxiety itself, with participants reporting that entirely original essays were flagged as AI-generated. Paradoxically, some students viewed online proctoring as anxiety-reducing because surveillance served as evidence they had not used AI. Students also identified format-specific stressors unrelated to content mastery, including time pressure from slower handwriting and technical glitches during proctored exams. These qualitative themes directly informed the construction of the four survey subscales and provided rich contextual grounding for interpreting the quantitative results.

A cross-sectional survey was administered to 35 undergraduate business students at a private midwestern university. The instrument measured four anxiety dimensions: General Test Anxiety (8 items adapted from the Westside Test Anxiety Scale; Driscoll, 2007), Paper-and-Pen Exam Anxiety (10 novel items), Online Proctoring Anxiety (10 items), and AI-Era Examination Concerns (12 novel items). All items used a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Additional sections assessed exam format experience, AI tool usage, environment preferences, and open-ended responses. Internal consistency was evaluated using Cronbach's alpha.

Regarding AI tool usage, the majority of students reported using AI tools at least sometimes for studying, such as using them to explain difficult concepts and to create practice questions. Notably, many students believed the observed shift toward paper

exams was related to AI concerns, and students noticed more complex, scenario-based questions. No significant gender or first-generation status differences emerged across anxiety scales.

These findings suggest that students' primary anxiety source has shifted from traditional test-taking concerns to worries about institutional responses to AI. Students perceive that faculty distrust and deliberately harder exams—rather than the exams themselves—drive their anxiety. Students also reported increased writing anxiety after being flagged by AI detection tools, even when they had not used AI. These results carry practical implications for marketing educators designing assessments in the AI era. Institutions should prioritize transparent AI use policies, communicate assessment rationale clearly, and offer format flexibility. Future research should expand the sample across multiple institutions, conduct longitudinal tracking as AI policies stabilize, and explore factor analytic approaches to refine the Online Proctoring Anxiety subscale.

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EXPLORING CUSTOMER ACCEPTANCE OF AI-DRIVEN SERVICE ROBOTS IN BANKING

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DEVELOPMENTAL PAPER

Rapid technological advancements have fundamentally transformed interactions between consumers and financial institutions. Among these developments, artificial intelligence (AI) has emerged as a transformative force across industries, including finance, marketing, retail, insurance, and hospitality (Lee and Chen, 2022; Omoge et al., 2022; Shang et al., 2024; Vaidyanathan and Henningsson, 2023). In the banking sector, AI adoption has enhanced operational efficiency, optimized resource allocation, and improved profitability through data-driven decision-making and intelligent automation (Mogaji and Nguyen, 2022). Consequently, banks are increasingly integrating AI technologies to improve customer service, streamline processes, and enhance overall user experience (Piotrowski and Orzeszko, 2023).

Industry projections indicate that global banking sector spending on AI is expected to reach $84.99 billion by 2030, reflecting a compound annual growth rate of 55.55% (Statista, 2025). Despite this substantial investment and rapid technological integration, limited research has examined customer acceptance of AI-driven service robots within the banking context.

Addressing this gap, the present study investigates the determinants of customer acceptance of AI-driven service robots in banking. Data will be collected from U.S. bank customers through an online survey using convenience sampling. The proposed research model includes both direct and mediating relationships, which will be tested using regression analysis. By examining customers' perceptions and their willingness to use AI-driven service robots, this study aims to contribute to the emerging literature on AI adoption in financial services. The findings are expected to provide theoretical insights into technology acceptance in service settings and offer practical implications for banks considering or implementing AI-driven service robots. Limitations and future research directions will also be discussed.

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AN EXPLORATORY ANALYSIS OF THE DETERMINANTS OF SUSTAINABLE LUXURY CONSUMPTION

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DEVELOPMENTAL PAPER

Sustainable luxury consumption is increasingly shaped by psychological values, social dynamics, and digital influence rather than environmental concern alone. This study proposes and motivates a conceptual regression model in which green consumption values, group affiliation, environmentalism, and social media influencers jointly predict intention to purchase sustainable luxury products. Drawing prior work, the framework integrates luxury value theory, environmental value theory, and social identity theory to explain how consumers seek to preserve symbolic and experiential benefits while engaging in responsible consumption. Green values are expected to strengthen affiliation with pro-sustainability groups, which in turn reinforce sustainable luxury purchase intentions, highlighting a key indirect pathway from personal values to behavior. The model also positions influencer credibility and visual design simplicity as mechanisms that enhance brand authenticity, shape perceived luxury value, and reduce luxury guilt, thereby encouraging acceptance of sustainable luxury offerings. This integrated approach provides a testable basis for future empirical research and offers actionable insights for luxury brands aiming to align exclusivity with environmental responsibility.

INTRODUCTION

Sustainable luxury has emerged as a rapidly growing field as consumers increasingly seek products that combine high-end quality with environmental and ethical responsibility. While traditional luxury emphasizes exclusivity, aesthetics, and symbolic value, contemporary consumers also expect brands to demonstrate sustainability commitments.

Research suggests that sustainable luxury consumption is shaped by multiple psychological and contextual factors, including consumers' perceived luxury values, design cues that communicate authenticity, social media influencer effects, and environmental attitudes (Alghanim & Ndubisi, 2022; Wang et al., 2023; Jansom & Pongsakornrungsilp, 2021; Li et al., 2024; Vilkaitė-Vaitonė, 2024).

Despite the increasing attention to sustainable luxury, existing studies are fragmented across different domains. Some focus on luxury value perceptions, others on visual branding cues, and others on social or environmental influences. This integrated study synthesizes prior findings into a unified framework that explains how luxury value perceptions, design simplicity, influencer effects, and environmentalism jointly influence intention to purchase sustainable luxury products. The goal is to propose a conceptual model informed by existing evidence and to formulate hypotheses suitable for empirical testing using a regression-based approach.

LITERATURE REVIEW

Alghanim and Ndubisi (2022) examined how luxury value dimensions shape intention to purchase sustainable luxury products. Their study in Qatar identified five luxury values—conspicuous, unique, social, emotional, and quality value—as independent predictors of sustainable luxury consumption.

Conspicuous, unique, social, and quality values increased sustainable luxury purchase intention, whereas emotional value negatively predicted it. Income moderated only the relationship between uniqueness value and sustainable luxury purchasing; higher-income consumers who highly valued uniqueness were more willing to buy sustainable luxury.

These findings suggest that sustainable luxury preferences are grounded not solely in environmental concern but in consumers' desire to maintain symbolic and experiential luxury benefits while engaging in sustainability-oriented consumption.

Packaging design also influences consumers' perceptions of sustainable luxury. Wang et al. (2023) demonstrated that visually simple package designs increase perceived brand authenticity, which subsequently strengthens brand choice intentions. Visual simplicity functions as a cue signaling honesty, transparency, and integrity—attributes closely associated with sustainability. Minimalist design may therefore amplify sustainability messaging by helping consumers perceive the brand as more authentic and trustworthy. This suggests that design-based authenticity cues can operate alongside value-based luxury dimensions in shaping consumer responses to sustainable luxury products.

Social media has become a major driver of luxury consumption, especially among millennials and Gen Z. Across multiple studies, influencers shape not only product attitudes but also environmental and luxury-related values.

Jansom and Pongsakornrungsilp (2021) found that influencers affect Thai millennials' perceptions of social, personal, and conspicuous value through parasocial interaction (PSI). Influencers' attractiveness increased PSI, which then enhanced perceived luxury values and purchase intentions for brands like Gucci. PSI and value perceptions both predicted purchase intention, demonstrating that influencer relationships are a powerful mechanism driving luxury consumption and can be leveraged for sustainable luxury branding.

Li et al. (2024) showed that social media contact with sustainability content increases sustainable lifestyle adoption through value co-creation. Although influencer effects were weaker in this context, the findings reveal that social media can promote sustainability by encouraging engagement, interaction, and co-production of green values.

Vilkaitė-Vaitonė (2024) found that influencer importance increases perceived credibility, which in turn strongly predicts sustainable consumption across cognitive, affective, and conative dimensions. Credibility fully mediated the relationship, indicating that influencers must be viewed as trustworthy to significantly encourage sustainable behavior. Collectively, these studies support that influencers shape sustainability-related luxury intentions by altering value perceptions, credibility, and consumer engagement.

Environmental orientation is a key predictor of sustainable consumption broadly. Multiple studies show that individuals with strong environmental beliefs demonstrate greater intention to purchase sustainable luxury.

Al-Issa (2024) found that perceived sustainability in luxury products increases purchase intentions across cultural contexts, enhances luxury quality perceptions, and reduces luxury guilt.

Nguyen et al. (2017) showed that young consumers with higher environmental concern reported stronger intention to purchase sustainable apparel. While not luxury-specific, it demonstrates that environmental attitudes drive sustainable consumption choices.

Law et al. (2025) found that moral responsibility for future generations increases pro-environmental attitudes and climate-supportive behaviors, suggesting that future-oriented environmental values may generalize to sustainable luxury choices.

A 2025 study showed that favorable evaluations of sustainability in luxury positively predict acceptance and purchase intention for sustainable luxury products. Taken together, these findings indicate that environmentalism—whether measured as perceived sustainability, environmental concern, or moral responsibility—strongly predicts willingness to purchase sustainable luxury products.

HYPOTHESES AND PROPOSED STUDY MODEL

Based on the integrated literature and the regression model structure, this study proposes that sustainable luxury purchase intention is driven by four primary predictors—green consumption values, group affiliation, environmentalism and social media influencers. Additionally, relational pathways are included to reflect how green consumption values may strengthen group affiliation and, through it, further shape purchase intention. The hypotheses are as follows:

H1 Consumers with stronger green consumption values will report a higher intention to purchase sustainable luxury products.

H2 Higher levels of group affiliation related to sustainable consumption will be positively associated with intention to purchase sustainable luxury products.

H3 Greater perceived influence of social media influencers will positively predict intention to purchase sustainable luxury products.

H4 Higher levels of environmentalism will positively predict intention to purchase sustainable luxury products,

Methodology (Data Collection Plan)

Research Design and Target Population

This study will employ a cross-sectional survey design to collect quantitative data. The target population consists of adult consumers (18+), who follow at least one social media influencer and have purchased or considered purchasing luxury fashion or lifestyle products.

This demographic is strategically chosen due to their higher engagement with sustainability, disposable income, and exposure to influencer marketing, which align with the characteristics of sustainable luxury consumption.

Sampling Method and Size

A non-probability purposive sampling method will be utilized to recruit participants who meet the inclusion criteria. Recruitment will be conducted across social media platforms (e.g., Instagram, TikTok), university alumni networks, and professional online survey distribution tools (e.g., Qualtrics, Prolific).

A minimum sample size of 300 respondents is targeted. This sample size is necessary to ensure:

Adequate statistical power for multiple regression analysis.

Stable and reliable estimates for the proposed mediation effects (H4b–H4c), adhering to recommendations for structural equation modeling (SEM) or PROCESS-based analysis.

Survey Instrument and Measures

The survey will utilize validated Likert-scale measures . Each core construct will be operationalized using 3–5 items adapted from established scales in the literature:

Green Consumption Values: Adapted from studies such as Nguyen et al. (2017) and Al-Issa (2024).

Group Affiliation: Measures focusing on the sense of belonging to communities that endorse sustainable luxury consumption.

Social Media Influencer Impact: Capturing perceived credibility, parasocial interaction (PSI), or general influence of relevant accounts.

Intention to Purchase Sustainable Luxury Products: Adapted from scales like those used by Alghanim & Ndubisi (2022).

Standard demographic variables (age, income, gender, education) will also be collected.

DATA COLLECTION AND ANALYSIS PROCEDURES

The survey will be distributed online with a mandatory informed consent statement. Data will be collected anonymously over an estimated 5–8 minute completion time per respondent.

The raw data will be screened for:

Missing responses and straight-lining patterns.

Low-quality or inconsistent responses.

Verification of eligibility based on screener questions.

The cleaned dataset will undergo the following analytical steps:

Descriptive Statistics for demographics and construct means.

Reliability Analysis (Cronbach's alpha) for all multi-item scales.

Correlation Matrix to assess initial relationships between variables.

Multiple Regression Analysis to test the direct hypotheses (H1–H3).

Mediation Analysis (using PROCESS Model 4 or SEM) to test indirect pathways (H4b–H4c).

Assumption Testing for normality, homoscedasticity, and multicollinearity (e.g., VIF).

CONTRIBUTION AND RELEVANCE OF THE STUDY

A. Theoretical Relevance

This exploratory research makes three key contributions to consumer behavior and sustainable luxury literature:

It moves beyond previous studies that examined variables separately by integrating environmental value theory, luxury value, and social identity theory. The model demonstrates how sustainable luxury consumption is driven not only by personal ecological concern but also by social positioning within environmentally conscious groups.

Incorporation of Digital Influence: By incorporating the social media influencer effect, the study addresses a critical, contemporary gap in sustainable luxury research, as highlighted by systematic reviews (e.g., Creevey et al., 2022). Influencers are centralized actors in modern luxury branding, and their role in promoting sustainability requires empirical testing.

The study proposes and tests a novel indirect pathway where green consumption values strengthen group affiliation, which then drives purchase intention. This offers deeper explanatory power for how environmentally oriented consumers convert personal values into high-involvement, luxury-related purchase behavior.

B. Managerial Relevance

For luxury brands struggling to reconcile exclusivity with environmental responsibility, this study provides concrete strategies:

Findings on green consumption values (H1) encourage brands to frame sustainability as a core dimension of luxury value and consumer self-expression, not merely a cost or compliance issue. The importance of group affiliation (H2, H4c) suggests that brands should actively cultivate online and offline communities (e.g., VIP sustainability events, eco-focused brand clubs) that reinforce sustainable luxury as a desirable social identity. The findings on social media influencer impact (H3) reinforce the need to prioritize partnerships with credible influencers whose personal branding aligns authentically with the brand's environmental values and luxury positioning.

Sustainable luxury represents a significant mechanism for fostering responsible consumption among high-income consumers, whose purchasing power translates to significant environmental impacts. This study contributes to broader sustainability goals by providing evidence that market demand exists for sustainable luxury, thereby encouraging brands to adopt more rigorous sustainability practices.

Showing consumers that environmental responsibility can be integrated with personal style, social belonging, and identity expression.

Providing insight into how social and digital channels can be leveraged to promote value-based consumption rather than pure materialism.

Future Research

The developed model provides a robust foundation for future inquiry. Subsequent research could:

Test the model's generalizability across diverse cultures (e.g., individualistic vs. collectivistic contexts), as suggested by prior studies (Al-Issa, 2024).

Extend the investigation to other less-studied luxury sectors (e.g., hospitality, high-end automotive, or travel).

Explore the interaction effects between influencer credibility, message framing (e.g., emotional vs. rational appeal), and sustainability purchase intentions.

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FROM SCREENS TO LANDSCAPES: LEARNING TECHNOLOGY DRIVEN MARKETING OUTDOORS

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DEVELOPMENTAL PAPER

We live in a digitally connected society in which smart devices are embedded in everyday life and marketing and advertising increasingly rely on digital channels for messaging and engagement. While these technologies offer powerful tools for learning, their constant presence can also create significant challenges in educational settings. In response, schools and universities around the world have implemented policies to limit cell phone use in classrooms in efforts to reduce learning distractions (Hatfield, 2024). Although such policies may improve focus, they can also produce unintended consequences for students who rely on mobile devices as legitimate learning aids (Anderson, 2025).

These tensions are particularly salient in disciplines such as marketing, where technologies like smartphones and social media platforms may not be peripheral distractions but integral tools for instruction. Courses in digital marketing and advertising, for example, often require students to engage directly with mobile devices and online platforms as part of core learning activities. As educators, students, and administrators continue to navigate this complex environment where technology simultaneously enhances and hinders learning. Faculty are increasingly exploring alternative strategies to support student attention and engagement.

Drawing on research in marketing and business education, this study examines how integrating outdoor experiential engagement into technology-intensive courses can create a symbiotic learning experience. Rather than positioning this engagement as a replacement for digital tools, this approach investigates how embodied and experiential learning strategies may complement technology use, helping students remain engaged, attentive, and cognitively active in digitally mediated learning environments.

BACKGROUND LITERATURE AND RESEARCH QUESTIONS

Researchers in business education have long lauded the value of outdoor experiential activities to be integrated into classroom learning. Buller et al. (1995) suggest that learning in the outdoors, where there may be unanticipated challenges that require students to engage in brainstorming and collaboration, can build teamwork, leadership, and communication skills, which are essential for any class and for students' careers after graduation. This is consistent with the idea of "fitness integrated learning" (FIL) in which physical activity can be integrated in intervals throughout a class, simultaneously with instruction, or embedded to specifically reflect certain topics or concepts in the course. Exploratory findings (n=600 students) suggest that students were attentive and engaged during FIL activities (Haber et al. 2016).

Specifically in marketing, faculty researchers have leveraged field contexts and marketplace settings to promote active and applied learning. Field site visits have been shown to engage students more deeply by situating theoretical concepts within real marketing environments, thereby enhancing students' understanding of marketing in practice (Van Doren & Corrigan, 2008). Drawing on Kolb's (1984) experiential learning theory and Lave and Wenger's (1991) situated learning theory, scholars have developed pedagogical innovations such as marketplace scavenger hunts in local retail settings, which prompt students to observe, analyze, and reflect on marketing strategies as they unfold in real time (Schaller, 2020). Similarly, walk through experiences with industry professionals allow students to observe marketing strategies in action and engage directly with practitioners through questions and discussion within authentic marketplace environments (Inhofe & Mukherjee, 2020).

While marketplace contexts provide valuable insight into "marketing in action," other researchers have shown that placing students in outdoor environments, where conditions are less predictable, can be equally effective in bringing marketing concepts to life and in developing critical skills in complex courses. For example, Minton and Krszjzaniek (2021) describe a marketing research course centered on an immersive backpacking experience, demonstrating how outdoor, experiential learning can enhance engagement and skill development. Building on this stream of literature and responding to the contemporary context in which students, and individuals more broadly, are increasingly digitally immersed, the objective of this research is to examine how outdoor physical activities can be intentionally integrated into technology intensive courses to support learning and skill development.

This exploratory research seeks to address the following questions:

RQ1: How does integrating outdoor, experiential engagement into technology intensive marketing courses enhance student learning?

RQ2: How does integrating outdoor, experiential engagement into technology intensive marketing enhance student satisfaction of a class session?

RQ3: What are challenges (for the instructor) integrating outdoor, experiential engagement into a technology intensive marketing course?

METHODOLOGY

This research is conducted in two sections of a digital marketing course. This research uses a multimethod approach to answer the research questions. Students are provided with a short reflective assignment related to the activity to gauge learning of course material and student satisfaction. In addition, the questions on an exam (related to the marketing concepts covered in the activity) are compared to prior years as another measure of learning. The instructor will document challenges in the implementation of the activity during the session and in a reflection after both class sessions. Early-stage findings will be presented at the conference.

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THE EFFECT OF DE-INFLUENCERS: A TARGETED LEARNING APPROACH

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DEVELOPMENTAL PAPER

Social media has been shown to exert a significant influence on both consumer behavior and industry dynamics (Chopra et al., 2020). Influencing has been an effective way for companies to advertise their products and services, resulting in higher sales and return on investment than traditional marketing efforts (Ahmad, 2018). Sellers often rely on glowing reviews with high ratings from influencers, believing that an excessively positive endorsement is key to swaying consumer purchase intentions. However, a recent and counterintuitive trend in influencing has surfaced, challenging this traditional approach (Kupor and Tormala, 2018). While past literature has examined several influencer characteristics (Breves et al., 2019, Hughes et.al, 2019 etc.) and their impact on influencer and brand level outcome, none have examined the seemingly antithetical concept currently used – de-influencing.

De-influencing can be defined as "The opposite of a social media star promoting a product" (Cannon, 2023). Influencer marketing may have peaked due to oversaturation of sponsored influencer content and might now face a diminishing returns scenario, or worse. Wendy Mei, head of corporate strategy at Playsee, has noted that the new trend of de-influencing "*has people questioning the value and necessity of these products, which is a clear contrast from how they were once promoted and these products are inauthentic to the normal consumer's lifestyle"* (Cannon, 2023).

Although 58% of GenZ-ers, 56% of Millennials, 46% of Gen Xers, and 38% of Boomers have made a purchase based on an influencer or content creator recommendation (Forbes, 2023), the impact of de-influencing has steadily grown with the appearance of more than 300 million de-influencing hashtags on TikTok videos (Cannon, 2023). How should marketers respond to this consumer shift? Mei argues that Gen Z is moving from excessive consumption to more` sustainable consumption (Cannon, 2023), while others note that all consumers wish to buy products from companies that share their values, but GenZ prioritizes authenticity, transparency, and sustainability (Theocharis and Tsekouropoulos, 2021). Drawing from previous influencer literature on trustworthiness (Kim and Kim, 2021) and message positivity (Leung, et al. 2022), we hypothesize that de-influencing will engage consumers more than traditional influencing.

To estimate the effect (ATE) of the de-influencer appeal we employed Targeted Learning Methodology (Maximum Likelihood Estimation -TMLE). This methodology allowed us to use ensemble machine learning algorithms, which place minimal assumptions on the distribution of the data. Data was collected from 186 TikTok accounts with a total of 216 observations. The key dependent variable of interest was the number of comments on each

video, which is in line with other social media studies in the literature. The results show that videos employing de-influencing appeals have significantly higher comments on their videos compared to those that have influencers using the traditionally positive influencing method, confirming our hypothesis. We suspect that this is due to increased perceptions of (de)influencer authenticity resulting in greater engagement. We also measured views, likes, shares, and favorites, but found no significant difference between the influencing and de-influencing appeals with those attributes. Further studies are needed to expand upon our current results. The findings of this work could assist brands, managers, and influencers by indicating which types of influencer marketing appeals are more effective. Moderately positive influencer comments or reviews, rather than extremely positive comments could be key to evoking greater discussion and brand engagement from consumers.

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STUDENT ENGAGEMENT WITH GENERATIVE AI IN HIGHER EDUCATION: AN EXPLORATORY TYPOLOGY OF AGENCY AND AI LITERACY

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DEVELOPMENTAL PAPER

The increasing adoption of generative AI tools such as ChatGPT is reshaping students' academic practices, offering benefits such as efficiency, creativity, and personalization while also raising ethical concerns including misinformation and overreliance (Ng et al., 2021; Heung & Chiu, 2025). However, existing research has largely treated students as a homogeneous group, emphasizing usage frequency or general attitudes rather than examining how learners differ in their engagement behaviors, evaluative practices, and self-regulation. Recent student-centered studies suggest substantial within-group heterogeneity in how students appropriate generative AI, differences that aggregate measures often obscure (Wilson et al., 2025). To move beyond variable-centered approaches, the present study adopts a typological, person-centered perspective to examine how configurations of AI literacy and human agency coalesce into distinct patterns of student–AI engagement.

The present study explores typological clusters of student–AI engagement by drawing on Ng et al.'s (2021) multidimensional framework of AI literacy, which includes understanding, applying, evaluating and creating, and ethical engagement, together with Bandura's (1989) social cognitive theory of human agency. By analyzing students' open-ended reflections, the study examines variation in how learners exercise agency, evaluate AI outputs, and incorporate generative AI into their academic work. Rather than estimating average effects of AI use, the analysis focuses on how evaluative, regulatory, and strategic practices co-occur within individuals to form qualitatively distinct engagement configurations. The resulting typology offers an exploratory, empirically grounded lens for understanding differences in student engagement with generative AI, with potential implications for how AI-integrated pedagogy may be more closely aligned with diverse student practices.

Data were collected via a voluntary open-ended survey administered to undergraduate students in South Korea during class sessions, yielding 129 complete responses for analysis. Participants (mean age = 23.1, range = 19–60) included 48.1% female and 51.2% male, with one opting out of gender disclosure; most were sophomores (41.1%) or juniors (23.3%). The survey comprised seven open-ended questions prompting students to reflect on a recent academic task involving generative AI, including how they used the tool, the goals and planning that guided its use, how they evaluated and responded to problematic outputs, and whether their perceptions or strategies changed after use. For

example, one item asked: “Have you ever felt that an AI-generated response was inaccurate or problematic, and if so, how did you judge and respond to it?”—eliciting both concrete engagement behaviors and reflective judgments related to agency and AI literacy.

For analysis, two researchers independently coded a subset of responses and collaboratively developed a shared codebook through iterative discussion. This process resulted in sixteen engagement sub-themes, each capturing a distinct aspect of students’ interactions with generative AI. These sub-themes were organized into five overarching conceptual domains: functional engagement (e.g., instrumental use, effective questioning, structuring ideas), critical awareness (e.g., identifying inaccurate output, recognizing technical limitations, detecting AI-generated misinformation), agency and autonomy (e.g., awareness of AI dependency, autonomous adjustment of use, perceived learning contribution), academic integrity (e.g., plagiarism concern, source verification, responsibility judgment), and adaptive integration (e.g., AI role setting, role-based collaboration, strategic integration). Each sub-theme was binary-coded to indicate the presence (1) or absence (0) of the corresponding practice. The resulting binary matrix was analyzed using hierarchical cluster analysis, followed by K-means clustering specifying a four-cluster solution.

The four-cluster solution showed separation between clusters, with distances between final cluster centers ranging from 1.10 to 1.31 and cluster sizes indicating a balanced distribution of cases (n = 22–45). Cluster-level profiles revealed differentiation across the sixteen sub-themes; effective questioning, recognition of AI limitations, learning contribution judgment, subjective adjustment of use, and role-based collaboration showed the clearest variation. The first cluster was characterized by frequent instrumental use of AI for task completion with limited engagement in practices associated with critical awareness, such as identifying inaccurate output or verifying sources. This group can be described as instrumental task-focused users, as engagement centered on task execution with limited evaluative or regulatory oversight. The second cluster showed low engagement across most domains, with limited evidence of functional engagement, agency, or adaptive integration. This group can be described as minimally engaged users, reflecting low levels of instrumental and agentic practices. The third cluster demonstrated sustained and structured interaction with AI, marked by effective questioning, recognition of output limitations, and verification-related practices. This group can be described as intentional and adaptive users, as agency was enacted through strategic prompting and iterative regulation. The fourth cluster relied primarily on AI for structuring ideas and early-stage organization, with less emphasis on ongoing evaluation during later stages of task completion. This group can be described as structurally oriented collaborators, positioning AI as a preparatory support tool while retaining responsibility for final decisions.

These findings indicate that engagement differences are linked to variation in evaluative and regulatory practices. Consistent with engagement frameworks that conceptualize engagement as an interplay of affective, cognitive, and behavioral dimensions (Kahu, 2013), the identified clusters reflect distinct configurations of how students think with, act on, and regulate generative AI in learning contexts. These configurations illustrate how dimensions of AI literacy are enacted in student–AI engagement practices, particularly across applying, evaluating and creating, and ethical

engagement, and reflect variation in intentionality and self-regulation consistent with theoretical accounts of human agency (Bandura, 1989). The results extend the existing literature, which has emphasized the broad effects of ChatGPT on behavioral and cognitive engagement (Heung & Chiu, 2025), by identifying distinct engagement profiles within a single student population.

By distinguishing multiple engagement profiles, this study shows that generative AI use is shaped by differences in how students evaluate, regulate, and position AI within their learning activities. Theoretically, the study contributes to AI literacy research by demonstrating how its dimensions appear in observable engagement practices. Methodologically, it illustrates the value of binary-coded cluster analysis for identifying engagement configurations in qualitative data (Guest & McLellan, 2003). Practically, the typology supports differentiated pedagogy that develops evaluative and regulatory capacities in AI-supported learning. The findings imply that AI-integrated pedagogy should be aligned with differences in students' evaluative and regulatory practices.

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ALGORITHMIC OBSOLESCENCE: ARTIFICIAL INTELLIGENCE, EXPECTANCY FORMATION, AND THE ACCELERATION OF PRODUCT LIFECYCLES IN CONSUMER ELECTRONICS

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DEVELOPMENTAL PAPER

Artificial intelligence (AI) structures how consumers perceive, interact with, and evaluate consumer electronic products. However, its role in shaping perceived upgrade necessity and product lifespans remains undertheorized in marketing research. Prior research on planned obsolescence has focused on hardware degradation, stylistic design turnover, and engineering decisions that shorten the useful life of consumer electronics (Mellal, 2020; Bisschop et al., 2022). While these perspectives offer valuable insights, they assume that physical decline, limited repairability, or fashion-driven replacement cycles structure product lifecycles and consumer choice. Yet as AI becomes embedded within operating systems, applications, and cloud-based services, product viability appears increasingly determined by software-mediated processes rather than hardware failure. AI-enabled systems shape device performance, feature access, update cadence, and compatibility requirements, creating conditions under which products may be perceived as obsolete despite remaining physically functional (Barros, 2021; Ylä-Mella et al., 2022). This shift necessitates development of a conceptual model that explains how consumer perceptions interact with algorithmic infrastructures to accelerate replacement behavior.

This paper introduces the construct of algorithmic obsolescence, defined as the reduction in perceived or actual product lifespan resulting from AI-driven update processes, including model-training demands, data-processing requirements, and evolving compatibility standards. The concept emerges when consumers perceive AI-driven updates as intentional actions that reduce device speed, restrict application access, alter feature availability, or impose computational requirements unsupported by earlier operating systems (Oraee et al., 2024; Kordić et al., 2025). Unlike earlier forms of planned obsolescence, which relied on visible hardware deterioration or aesthetic change, algorithmic obsolescence is continuous, dynamic, and mediated through software upgrades that reshape usability and performance expectations over time. As a result, obsolescence is experienced as a perceptual and psychological process rather than a strictly technical one.

Drawing on symbolic interactionism, expectancy theory, and research on digital persuasion, this conceptual foundation attempts to explain how AI-driven systems influence consumer meaning-making around product lifecycles. Symbolic interactionism holds that meaning is constructed through ongoing interpretive interaction between individuals and their environments (Blumer, 1969). AI-driven updates constitute part of this

interactional environment, shaping how consumers interpret device capability, adequacy, and future viability. Performance comparison messaging, algorithmic prompts, predictive warnings, and compatibility notices function as symbolic cues that link device age to deficiency, risk, or obsolescence. Building on this, expectancy theory suggests that repeated exposure to performance-related cues shapes beliefs about future outcomes (Vroom, 1964). Over time, consumers may interpret older operating systems as inherently less capable, even when actual performance changes are minimal (Escalas & Bettman, 2005; Widarmanti, 2024). These interpretive processes appear to create expectancy feedback loops that accelerate perceived decline.

Algorithmic obsolescence reflects a shift in how consumers experience time, novelty, and product lifecycles. Historically, obsolescence followed linear, hardware-driven trajectories. Subsequently, stylistic and customization-based strategies encouraged replacement without substantive functional change. However, AI-driven systems operate on asynchronous, continuous timelines independent of device physicality. As machine-learning models expand, older devices may be unable to support new computational layers, resulting in lag, reduced compatibility, or discontinued support (Sierra-Fontalvo et al., 2023). AI-enhanced features such as cameras, battery optimization, biometric authentication, and predictive interfaces disproportionately benefit newer devices. This constructs a technological environment that privileges recency and penalizes longevity (Barros, 2021). These dynamics compress perceived product lifecycles even when devices remain operational.

The proposed framework posits that algorithmic obsolescence operates through a psychological pathway that shapes consumer upgrade behavior. Specifically, AI-driven update cadence influences perceptions of device inadequacy, which heightens perceived functional risk, ultimately increasing upgrade intention. AI systems communicate the need for updates, recalibrations, and optimizations to ensure security, performance, and compatibility. This establishes a normative expectation that up-to-date functionality represents a baseline requirement for technological and social competence (Widarmanti, 2024). Within platform ecosystems, updates are required before consumers can access new services or integrate additional products, reinforcing perceptions that outdated devices threaten usability and relevance (Apple, 2025). Update frequency thus becomes a cue for device modernity and future viability. These perceptions align with research showing that consumers experience technological stress, fear of missing out, and performance anxiety when their devices cannot run the newest software (Oraee et al., 2024).

In this framework, perceived functional risk serves as a central mediating variable. Consumers rely on electronic devices for navigation, communication, authentication, financial transactions, and data storage. AI-driven systems intensify the perceived consequences of using outdated technology by restricting application compatibility, reducing security protections, and limiting cross-device integration (Bisschop et al., 2022). When algorithmic systems communicate risk—explicitly through warnings or implicitly through degraded functionality—consumers infer that continued use may jeopardize performance stability, personal data, or daily efficiency. Under these conditions, device replacement is reframed as risk mitigation rather than discretionary consumption, accelerating upgrade intentions.

As a developmental paper, this research seeks to guide the design of a quantitative study using survey-based methods to examine consumer behavior under conditions of algorithmic obsolescence. The proposed framework identifies measurable constructs including perceived update frequency, perceived algorithmic pressure, perceived device inadequacy, perceived functional risk, and upgrade intention. Survey instruments can capture consumers' experiences with AI-driven updates, interpretations of performance cues, and behavioral responses across device categories and platform ecosystems. From a marketing data and analytics perspective, the framework offers a foundation for linking perceptual measures to observed upgrade cycles, usage patterns, and replacement behavior.

This paper attempts to contribute to marketing theory by extending planned obsolescence research to account for AI-driven, software-mediated product lifecycles. It also contributes to marketing analytics by identifying psychological and perceptual mechanisms through which algorithmic systems influence consumer decision-making. By conceptualizing algorithmic obsolescence as a meaning-based and expectancy-driven process, this work establishes groundwork for empirical investigation into how AI accelerates product lifecycles and shapes consumer behavior in contemporary electronic markets.

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ANTICIPATORY EXPERIENCE APPETITES: A STUDY OF PET OWNERSHIP AND PET FOOD CHOICE

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DEVELOPMENTAL PAPER

Consumer decisions are often guided not only by functional needs or past experiences but also by anticipation of future experiences and the memories and emotions consumers expect those experiences to create. Building on Geraldine Fennell's (1978) work on the perceived product use situation and appetites as situation-activated motivations, this developmental paper introduces the concept of *anticipatory experience appetites*. These appetites represent motivational states activated by a consumption situation that reflect how consumers want to feel, imagine, and later remember a consumption experience.

The concept extends prior research on experiential consumption by emphasizing forward-looking psychological processes that shape product choice. Much consumer research focuses on retrospective satisfaction or present consumption benefits, but many decisions are influenced by imagined future experiences and the narratives consumers expect to construct about those experiences. Consumers often evaluate alternatives based on how well they align with desired emotional outcomes and anticipated memories, reflecting the role of anticipated evaluation by the "remembering self" in shaping decisions (Kahneman, 2011).

To illustrate this framework, we examine pet ownership and pet food purchasing. Pet ownership provides a context in which products are frequently interpreted as expressions of care, identity, and responsibility toward animals that are viewed as members of the family. In such contexts, purchasing decisions may reflect anticipated emotional experiences rather than purely functional product attributes.

For this project, we collected survey data on pet ownership, attitudes toward pets, and reported pet food purchasing behavior, we explore patterns of anticipatory experience appetites among pet owners. Preliminary analysis suggests several motivational orientations that appear to shape decision making. These include appetites related to family integration (seeing the pet as part of the household and selecting food consistent with family standards), emotional enjoyment (deriving pleasure from the pet's happiness and well-being), and moral stewardship (a sense of responsibility to provide high-quality or ethically produced food).

We also examine beliefs about price and quality in the pet food category. Consumers differ in their assumptions about whether higher-priced products signal superior nutrition, ethical sourcing, or better care for the animal. These beliefs may moderate the relationship between anticipatory experience appetites and purchasing decisions by shaping how consumers interpret marketplace offerings.

The concept of anticipatory experience appetites contributes to consumer research by highlighting a motivational mechanism operating prior to consumption and complementing segmentation approaches based on demographics, attitudes, or past behaviors. By focusing on the experiences consumers hope to create and remember, the framework provides an additional lens for understanding emotionally meaningful consumption contexts such as pet ownership, tourism, family activities, and gift giving.

Managerially, the framework suggests that firms in emotionally charged markets may benefit from positioning strategies that emphasize desired experiences rather than solely product attributes. Communications that help consumers envision meaningful future experiences with their pets may resonate more strongly than messages focused only on nutrition or price. As a developmental paper, this research outlines the conceptual foundation of anticipatory experience appetites and provides an initial empirical exploration within the context of pet food purchasing.

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TRANSLATING SOCIAL MEDIA TRENDS INTO SUCCESSFUL MARKETING STRATEGIES

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DEVELOPMENTAL PAPER

Social media continues to evolve as various factors change, including technological innovation, data availability, and data analysis methods. These factors empower both consumers and businesses to harness the power of social media more than ever. Based on the ongoing changes in factors mentioned above, we find a set of key emerging trends in social media marketing:

User-generated content
Memes
Feelings of nostalgia
Marketing through Conversation, and
Gamification

User-Generated Content (UGC)

UGC has been around for a while. Advertisements in old media were also based on ideas that marketers got from customers. It is still being made, shared, and sourced differently (Dwivedi et al., 2020; Mukhopadhyay et al., 2023). These changes can be traced back to social media sites. The rise of remixing apps, such as TikTok, Instagram Reels, and Koji, has given marketers a new way to connect with customers. These new opportunities will enable marketers to connect with their customers more effectively through attractive content. It is a new trend that enables brands to create content tailored to their customers. This trend allows people to express their thoughts about brands. As a result, it will make it easier for brands and customers to connect naturally. As more people shop online, it will become increasingly normal for users to generate more content (Halliday, 2016). To keep up with the trend, brands should provide people with the right tools, such as logos and labeled templates, to create effective remixes. However, observing how brand images are utilized on social media platforms is essential. It will help the business create remixed content and track it (Daugherty et al., 2008). Additionally, brands should assess their social media presence to identify which virtual channels are most effective for them. It is essential to monitor the copied content to prevent any potential issues.

Memes

Memes have opened up a new way for people to interact with each other on the internet. A meme is an amusing or interesting item (such as a captioned picture or video) that is spread widely online, especially through social media. It is something that marketers should learn from and try to utilize memes to build and manage brand communities (Razzaq

et al., 2023). Memes will convince people of new business and economic trends and problems. These problems impact the health of brands on social media and are often connected to the brand in some way. Memes are a significant trend that enables marketers to connect with their target audiences. Brands should create content that people want to share and discuss. Brands should also monitor their business logo (Malodia et al., 2022) Brands can interact with the meme communities to make their words go viral faster. As a marketer, you need to ensure that a meme does not evoke negative feelings among people. You should also consider that there may be numerous rules governing memes as their popularity grows (Murray et al., 2014).

Feelings of Nostalgia

You will remember how great life was before 2019, when people did not wear masks, use hand sanitizers, or stay away from people they did not know. Marketers can connect with current feelings by using the nostalgia of retro marketing, tapping into the positive emotions associated with remembering the good old days. Nostalgia links strong, good feelings to a brand and makes people feel better emotionally (Koetz & Tankersley, 2016). On the other hand, the word "nostalgia" gained popularity on social media after the lockdown, as people sought to reminisce about the good old days. Research shows that people want to remember good times and forget about the problems they are currently facing. That is why nostalgia enables marketers to associate a positive memory with their brand. This good memory will help them connect emotionally with your brand. Because the brand makes people feel good, it will help build a good brand image (Davalos et al., 2015, Bandyopadhyay and Serjak, 2015.) The brand can use nostalgia marketing if it knows its customers well. Data from the past can help change trends and make something old look brand new, evoking a sense of nostalgia in people. Reviewing current or old contacts can also help you reconnect with people you liked in the past. By utilizing nostalgia marketing to connect with them, you can effectively showcase your business (Andangsari et al., 2022).

Marketing through Conversation

Today, marketers must encourage customers to communicate with them on a regular basis. Conversational marketing tailors the message to the customer's communication style. Consumer needs have evolved since the rise of digital and social media marketing. Talking to consumers is therefore essential to understand their preferences (Parida & Prasanna, 2021.) People can connect on a human level through chatbots, social messaging, calls, and other methods. Conversational marketing can also lend social media a human voice by allowing the brand and the customer to engage in real-time discussions. If a brand wants to utilize social marketing effectively, it must examine the customer journey and identify what hinders them at each stage. Therefore, the brand should engage with customers to identify their concerns. It will help brands have better conversations. They should also combine information from various sources, such as emails, calls, and chats (Curran & Lennon, 2011). The marketing teams should understand what is being said in customer service to have better customer conversations. Talks should be personal simultaneously, so brands should lower their voices to achieve this. When building

relationships and conversations, the focus should be on using a more approachable and authentic tone of voice (Liu & Lopez, 2016)

Gamification on Social Media

The global online gaming market generated revenues of approximately $ 26.14 billion in 2023, representing a 9.8 percent increase compared to the previous year (Clement, 2024). The global COVID-19 outbreak in 2020 led to a substantial increase in online gaming profits. It compelled individuals to remain at home and seek digital entertainment and means to interact with others. Although the growth trend has stabilized, online gaming remains a popular activity. Currently, there are over 1.1 billion online gamers globally, with China, South Korea, and Japan having the largest online gaming presence among their populations (Clement, 2024; Aydin, 2015). There is a chance for brands to market themselves through gaming groups. Nepal (2015) suggested that a three-way strategy is best for any brand to utilize these groups and maximize their benefits. First, identify the right communities, particularly those with similar demographics, to effectively connect the business with its customers. Second, learn about those communities, especially how the material is made and how people interact. Third, if there are no paid advertising options, consider joining groups and asking people to share games and content related to your brand.

OBJECTIVE OF THE STUDY

We explore these trends in-depth in this study. We will review the existing literature on these emerging social media trends and develop a set of critical success factors for implementing them in social media marketing strategies.

IMPACT OF THE STUDY

Results of this study are expected to make a significant impact on social media both academically and managerially. Academically, the findings of this research, viz., the critical success factors, will shed light on what works well and what does not. Managerially, the findings will help social media marketers avoid potential pitfalls and improve their strategies.

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