

# Analysis of the Correlation Between Digital Advertising Creativity and User Behaviour

Meng Xia

Ant Digital Intelligence Information Technology (Shanghai) Co., Ltd., Shanghai, China  
gongzuo1232024@126.com

**Abstract:** The transformation of digital technology and consumer behaviour is reshaping the development path of the advertising creativity field. This study delves into the bidirectional correlation mechanism between digital advertising creativity and user behaviour, revealing how behavioural data drives the optimisation of creative decision-making and how creative design precisely guides user conversion behaviour. The study constructs a multi-modal behaviour analysis framework and an intelligent creative generation system, proposing practical strategies to balance core contradictions such as precise personalisation and privacy protection, algorithm automation and creative uniqueness. Based on this, the paper proposes an integrated approach combining data infrastructure construction, layered creative strategies, and a multi-dimensional evaluation system, providing theoretical support and methodological guidance for digital marketing practices.

**Keywords:** Digital advertising creativity; User behaviour analysis; Creative decision-making; Behavioural conversion; Multi-modal analysis; Intelligent creative system.

## 1. Introduction

The digital media environment has profoundly reshaped the interactive relationship between advertising creativity and user behaviour [1]. Traditional advertising relies on creative intuition and empirical rules, while the digital age is built on precise behavioural data and real-time feedback [2]. This shift has transformed creative decision-making from a closed to an open process, and from static to dynamic, forming a new paradigm that integrates data-driven insights with creative intuition. Current research primarily focuses on one-way influences, such as how behavioural data guides creative design or how creative performance impacts user behaviour, without systematically exploring the complex interactive mechanisms between the two [3]. This study aims to construct a bidirectional association framework between digital advertising creativity and user behaviour, revealing their interaction patterns and optimisation pathways. The article first analyses the driving mechanisms of user behaviour data on creative decision-making, then explores the guiding principles of creative design on user behaviour, subsequently proposes methods for constructing a behaviour-creativity interaction system, and finally discusses application challenges and practical pathways, providing an integrated perspective for digital marketing theory and practice.

## 2. Theoretical Foundations and Core Concepts

### 2.1. Digital Advertising Creative Theory

Digital advertising creativity theory is rooted in traditional advertising theory but incorporates interactivity, real-time, and personalisation features. This theoretical framework emphasises the integration of information design, visual impact, and emotional resonance to create creative expressions that influence both users' cognition and emotions. In the attention economy era, the creativity value matrix theory suggests that effective creativity must balance four dimensions: attractiveness, relevance, differentiation, and

memorability [4]. The theory of creative resonance in digital environments further reveals the decisive influence of the match between creativity and user context on advertising effectiveness. In recent years, narrative advertising theory has gained prominence, emphasising that the application of story structure in digital advertising can significantly enhance user engagement and information processing depth. Perceptual fluency theory explains how the ease of interpretation of creative elements influences user experience and evaluation formation.

### 2.2. User Behaviour Theory

User behaviour theory focuses on consumers' decision-making processes and interaction patterns in digital media environments. The AISAS model (Attention-Interest-Search-Action-Share) reveals the behavioural characteristics of users actively participating in information search and social sharing in the digital age. The theory of bounded rationality explains users' tendency to rely on cognitive shortcuts to make decisions in information-overloaded environments, providing a theoretical foundation for understanding the impact of advertising creativity on users' intuitive reactions [5]. The framing effect theory in behavioural economics clarifies the profound impact of creative presentation methods on user perception and choice. Digital footprint theory focuses on how users' behavioural traces left on digital platforms constitute expressions of identity and consumption preferences. Multi-screen user behaviour theory further studies attention allocation and content reception characteristics in cross-device usage scenarios, providing theoretical support for omnichannel creative strategies.

### 2.3. Two-way interaction mechanism

The bidirectional mechanism reveals the cyclical interactive relationship between digital advertising creativity and user behaviour. Advertising creativity influences users' cognition, emotions, and behaviour, while user behaviour data feeds back into creative optimisation, forming a dynamic, evolving closed-loop system. This mechanism is based on an

extension of the stimulus-organism-response (S-O-R) model, where creativity serves as a stimulus factor that triggers changes in users' internal psychological states, thereby inducing observable behavioural responses. The interactive feedback mechanism in the digital environment transforms this process from linear to a spiral-shaped upward trajectory, with each user interaction providing new data for creative iteration [6]. The co-creation value theory further explains how user participation deepens brand relationships and enriches creative content. Behavioural prediction models utilise historical data to construct user decision-making pathways, providing theoretical guidance for the precise positioning of creative intervention points, thereby achieving a strategic upgrade from passive response to proactive prediction.

### 3. Core Dimensions of Relevance Analysis

#### 3.1. Behavioural Data Driving Creative Decision-Making

User behavioural data has become the core driving force

behind digital advertising creative decision-making, transforming the traditional creative development model reliant on experience and intuition. Detailed behavioural data analysis reveals hidden patterns in user interests, browsing habits, and conversion paths, providing creative teams with factual foundations rather than assumptions. Multi-dimensional behavioural metrics such as search history, click trajectories, dwell time, and interaction depth form the data foundation for creative optimisation. Modern digital marketing platforms utilise machine learning algorithms to extract behavioural features from these complex data and generate models linking creative elements to conversion outcomes [7]. As shown in Figure 1, advertising creatives adjusted based on actual user interaction data outperform purely aesthetically driven designs by an average of 37% in conversion rates. Data can also identify differentiated responses to creative elements across different user groups, enabling precise segmentation and personalised delivery of creative content. Advertisers have widely adopted real-time response systems to dynamically adjust creative display strategies based on immediate user feedback, shifting creative decision-making from static planning to dynamic optimisation.

#### Performance Comparison: Data-Driven vs Traditional Creative Approaches

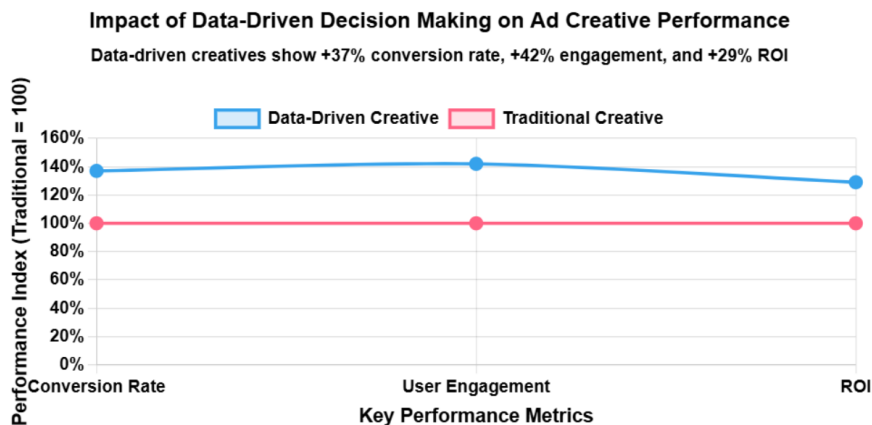


Figure 1. Performance Comparison: Data-Driven vs. Traditional Creative Methods

#### 3.2. Creative Design Guides Behavioural Conversion

Creative design plays a key role in guiding users through the conversion path from awareness to action. Carefully crafted creative elements can effectively shape users' psychological expectations and stimulate behavioural intent. The application of colour psychology in visual design shows that different colour combinations can trigger specific emotional responses, thereby influencing decision-making tendencies—blue tones in retail advertisements enhance trust, while red elements in limited-time promotions reinforce a sense of urgency. Research on the language framing effect in copywriting design has found that information presentation methods that leverage differences in perceived gains and losses can significantly alter users' risk assessments [8]. The loss aversion framework in insurance product promotions increases click-through rates by 23% compared to the gain framework. Research in the field of interaction design on micro-animations has confirmed that moderate dynamic elements can guide users' visual attention and reinforce operational guidance, thereby enhancing behaviour

completion rates. Social proof signals in personalised creativity (e.g., 'Users similar to you have also chosen this') leverage conformity psychology to trigger trust, with such elements on e-commerce platforms averaging an 18% increase in purchase conversion rates. The essence of creativity guiding behaviour lies in reducing user decision friction and constructing a smooth, intuitive cognitive-emotional-behavioural pathway.

### 4. Research and Practical Methods

#### 4.1. Multimodal Behaviour Analysis Technology

Multimodal behaviour analysis technology integrates multidimensional data such as visual, textual, audio, and interactive data to provide comprehensive insights into user behaviour for creative optimisation. Eye-tracking systems capture users' gaze trajectories and fixation hotspots, revealing the distribution patterns of attention toward creative elements. Measurement results show that users' actual points of focus often deviate by over 30% from designers' expectations. Emotion recognition algorithms infer the

intensity of users' emotional responses based on changes in facial microexpressions, helping to assess the emotional resonance of creative content. Mouse movement trajectory analysis identifies hesitation behaviours and decision-making bottlenecks, providing a basis for interface optimisation. Text mining technology extracts emotional tendencies and keyword frequencies from user comments, reflecting the effectiveness of creative communication and user perception priorities [9]. Interaction behaviour sequence analysis reconstructs user decision-making paths, identifying drop-off points and conversion triggers. These technologies are integrated into a comprehensive behavioural analysis framework, delving into user behaviour from surface-level metrics to cognitive and emotional dimensions. This precisely identifies the correspondence between creative elements and user responses, providing a scientific basis for data-driven creative optimisation.

## 4.2. Intelligent Creative Generation System

The intelligent creative generation system is revolutionising the production process of digital advertising by utilising artificial intelligence technology to convert user

behaviour data into personalised creative solutions. As shown in Figure 2, the core engine consists of four major modules: a creative element library, a behaviour pattern library, a generation model, and an optimisation algorithm[10]. The creative element library stores standardised visual, text, and interactive components; the behaviour pattern library contains reaction characteristic models of different user groups; the generation model is responsible for combining creative elements based on the characteristics of the target audience; while the optimisation algorithm continuously adjusts creative solutions based on real-time feedback. This system can generate millions of personalised creative variations within milliseconds, achieving a level of scalability and personalisation unattainable by traditional methods [11]. Advanced systems have integrated reinforcement learning models, enabling them to automatically identify efficient creative patterns and continuously optimise creative strategies. As a result, designers have transitioned from creative producers to system trainers and creative strategy planners, responsible for setting creative boundaries and brand language to ensure that AI-generated content aligns with brand tone and marketing objectives.

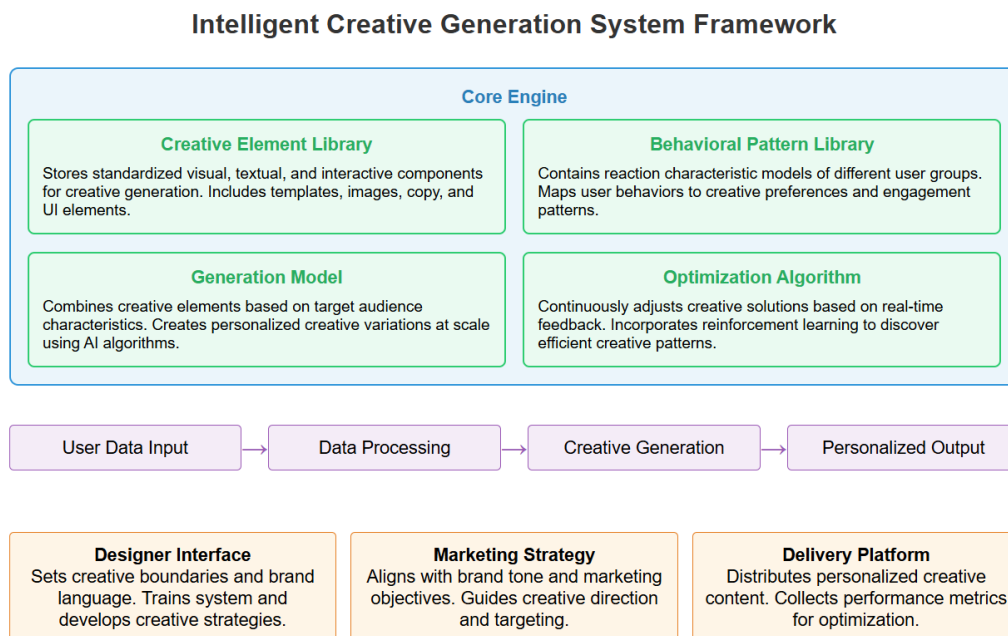


Figure 2. Framework diagram of the intelligent creative generation system

## 5. Application Challenges and Trends

### 5.1. Balancing Core Contradictions

Digital advertising creative practices face several fundamental contradictions, and industry leaders are seeking the optimal balance between these opposing dimensions. The tension between precision personalisation and user privacy protection is becoming increasingly apparent. Privacy regulations such as the EU's GDPR and California's CCPA are driving advertisers to adopt de-identified data and local computing models. Privacy-enhancing technologies reduce accuracy by 11% but increase user trust by 23% [12-13]. The tug-of-war between algorithmic automation and creative uniqueness is also becoming more pronounced. Overreliance on templated creativity leads to user aesthetic fatigue, with data showing that homogenised ads see an average 36% drop

in click-through rates after repeated exposure. As shown in Table 1, the ideal balance between short-term conversions and long-term brand value should be 50:50, but in practice, this balance is often disrupted. Industry research shows that overly optimised direct conversion creative strategies reduce brand differentiation by an average of 17%, while creative strategies emphasising brand tone sacrifice 8-15% of immediate conversion rates. The contradiction between efficiency and innovation is also intensifying, with creative teams spending an average of 40% of their time adapting to constantly changing platform regulations and technical requirements. The most successful advertisers are adopting adaptive strategy frameworks, dynamically adjusting the priority of these dimensions according to different marketing stages to achieve dual improvements in business objectives and user experience.

**Table 1.** Reference Framework for Balancing Core Contradictions in Digital Advertising Creativity

Core Conflict Dimension	Left Side Impact (%)	Right Side Impact (%)	Recommended Balance Point (%)
Personalized Precision vs Privacy Protection	70:30:00	30:70	55:45:00
Algorithm Automation vs Creative Uniqueness	80:20:00	40:60	65:35:00
Short-Term Conversion vs Long-Term Brand Value	75:25:00	35:65	50:50:00
Efficiency Standardization vs Innovation Exploration	85:15:00	25:75	60:40:00

## 5.2. Convergence and Innovation Trends

The convergence of digital advertising creativity and user behaviour analysis is rapidly evolving in several cutting-edge directions. Immersive experience design is incorporating augmented reality and virtual reality technologies into advertising creativity, with brands beginning to build interactive three-dimensional product displays and scenario simulations. User behaviour data in these environments provides richer interactive dimensions and decision-making insights than traditional print advertising [14]. Context-aware creative systems utilise IoT devices and geolocation data to dynamically adjust creative content based on the user's environment. Retail brands report a 32% increase in response rates for such contextualised ads. Generative AI is being applied to hyper-personalised content creation, generating matching visual and textual elements in real time based on users' historical preferences, reducing creative production cycles by over 75%. Neuromarketing technology uses electroencephalography (EEG) and biofeedback devices to measure users' subconscious reactions, providing deeper data for creative optimisation beyond self-reported feedback. Metaverse marketing experiments explore brand experience design within digital avatars and virtual communities, with user behaviour patterns in virtual worlds offering new perspectives for real-world creative strategies. These innovative directions are redefining the essence of advertising creativity, shifting from one-way presentation to immersive experiences and two-way dialogue.

## 6. Practical Recommendations

### 6.1. Data Infrastructure

Data infrastructure forms the core support for behaviour-driven creative optimisation. Companies need to establish a comprehensive data collection and governance system. The data lake architecture integrates cross-channel user behaviour data, breaking down existing data silos and enabling end-to-end behaviour tracking from ad display to final conversion. Identity resolution technology coordinates user identity matching across different devices and platforms, forming a unified user view. According to industry reports, robust cross-screen identification can improve creative targeting accuracy by up to 42%. Data layering ensures efficient conversion from raw behavioural logs to actionable insights. Structured data supports quantitative analysis, while unstructured data captures user emotions and contextual information. Privacy compliance frameworks maximise data value while protecting user rights, using techniques such as differential privacy to safeguard individual data security [15]. Real-time data processing pipelines reduce user behaviour feedback latency from traditional hours to milliseconds, enabling creative optimisation to respond instantly to market changes. Leading companies have established data asset catalogues, clearly defining the key data metrics and accountability frameworks required for creative decision-making, fostering

a data-driven creative culture.

### 6.2. Layered Creative Strategy

The layered creative strategy designs differentiated creative solutions based on user journey stages and behavioural characteristics to achieve precise targeting and efficient conversion. Cognitive-layer creatives focus on breaking through attention barriers by using visual psychology principles to design highly recognisable elements. Research shows that the visual impact in the first 3 seconds determines 75% of advertising effectiveness. Interest-layer creative emphasizes relevance matching, inferring user interests based on historical behaviour to customise content themes and formats. Interest-matched creative for segmented audiences achieves an average 31% higher click-through rate than generic creative. Consideration-layer creative focuses on presenting solutions and differentiating from competitors, using behavioural data to identify user pain points and decision barriers, and providing targeted information support. Action-layer creativity optimises conversion paths and behavioural guidance. Micro-interaction design and contextualised calls to action significantly reduce operational friction, increasing form completion rates by 22%. Loyalty-layer creativity builds personalised experiences based on users' historical interactions, strengthening brand connections. A cross-layer creativity collaboration system ensures that creativity across all layers maintains brand consistency while meeting different marketing objectives at each stage, achieving strategic integration and resource optimisation.

### 6.3. Effect Evaluation System

The effect evaluation system provides scientific basis for creative optimisation, with a multi-dimensional indicator framework that goes beyond simple click-through rates and conversion rates. Immediate response indicators monitor users' direct reactions, including attention indicators (such as visual hotspot distribution and time spent on the first screen), emotional indicators (such as emotion tag distribution and interaction emotion values), and behavioural indicators (such as click depth and interaction trajectories). Mid-term effectiveness metrics track the user decision-making process, including completion rates at each stage of the conversion funnel, conversion duration, and cost efficiency. Long-term value metrics assess the contribution of creative content to brand equity, including brand awareness improvement, emotional connection strength, and changes in loyalty. Attribution models utilise Markov chain analysis and machine learning algorithms to precisely quantify the contribution weights of different creative elements to final conversions, addressing attribution bias issues in traditional evaluation methods. Dynamic evaluation mechanisms upgrade creative effectiveness measurement from static reports to real-time monitoring dashboards, enabling creative teams to immediately identify performance anomalies and adjust strategies. Incremental measurement experimental designs separate the effects of creative itself from other

influencing factors, providing reliable basis for creative investment decisions. Leading companies have established creative asset evaluation models to quantify the incremental contribution of creative to brand long-term value.

## 7. Conclusion

Research on the correlation between digital advertising creativity and user behaviour has revealed the complex and dynamic interactive mechanisms between the two. Behavioural data provides scientific basis for creative decision-making, while high-quality creative design can effectively guide user behaviour conversion. This bidirectional relationship constitutes the core driving force for enhancing digital marketing effectiveness. Future research should further explore the application of neuroscience and behavioural economics in creative design, and focus on new methods of behavioural analysis under privacy protection. Building a creative ecosystem that balances commercial objectives and user experience will be the key path to the sustainable development of digital advertising.

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