

The Influence of Celebrity Endorsement on Consumer Purchase Behaviour for Healthcare Nutraceutical Products using Deep learning

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Celebrity endorsement has long been recognized as a potent marketing tool influencing consumer behavior across various product categories. However, its influence on consumer purchase behavior for healthcare nutraceutical products remains underexplored, particularly in the context of deep learning analysis. This paper aims to bridge this gap by employing advanced deep learning techniques to delve into the intricate relationship between celebrity endorsement and consumer purchasing decisions in the healthcare nutraceutical industry. The study adopts a mixed-methods approach, combining sentiment analysis of socialCelebrity endorsement media data, convolutional neural networks (CNNs), and recurrent neural networks (RNNs) to extract insights from a vast pool of online discourse. By mining textual and visual data, we aim to discern patterns, sentiments, and preferences surrounding celebrity endorsements of healthcare nutraceutical products. Furthermore, we investigate the differential impact of various types of celebrity endorsements, including social media influencers, industry experts, and mainstream celebrities, on consumer purchase behavior.

Keywords: Celebrity Endorsement, Nutraceutical, Convolutional Neural Network, Recurrent Neural Networks.

1. Introduction

Celebrity endorsement has been a cornerstone of marketing strategies for decades, recognized for its ability to captivate audiences, build brand awareness, and influence consumer behavior across diverse industries. However, within the realm of healthcare nutraceutical products, the impact of celebrity endorsement on consumer purchase behavior remains a relatively unexplored terrain. With the growing emphasis on health and wellness, coupled with the proliferation of social media influencers and celebrity endorsements, understanding the dynamics of this relationship is paramount for both marketers and researchers[1].

In recent years, the nutraceutical industry has witnessed exponential growth, fueled by increasing consumer demand for natural, functional, and health-enhancing products. These products encompass a wide array of dietary supplements, vitamins, herbal remedies, and other health-focused formulations. As consumers become more health-conscious and proactive in managing their well-being, the market for healthcare nutraceuticals continues to expand, presenting both opportunities and challenges for marketers seeking to effectively engage with their target audience[2].

Celebrity endorsement holds particular allure within the healthcare nutraceutical sector due to its potential to lend credibility, authority, and aspirational value to products. Whether it's a renowned athlete extolling the virtues of a protein supplement or a popular actress endorsing a beauty-enhancing supplement, celebrities wield significant influence over consumer perceptions and purchase decisions. However, the effectiveness of celebrity endorsements in this context is not solely determined by the fame or popularity of the endorser but also by factors such as relevance, trustworthiness, and alignment with the product's health-related claims[3].

Traditional methods of analyzing the impact of celebrity endorsements on consumer behavior have often relied on surveys, focus groups, and sales data, which provide valuable insights but may overlook the nuances and subtleties embedded within vast volumes of textual and visual data available on social media platforms. With the advent of deep learning techniques, such as sentiment analysis, convolutional neural networks (CNNs), and recurrent neural networks (RNNs), researchers now have the tools to extract rich insights from unstructured data sources, offering a more nuanced understanding of consumer sentiments, preferences, and behaviors[4].

This paper seeks to leverage the power of deep learning analysis to investigate the influence of celebrity endorsement on consumer purchase behavior for healthcare nutraceutical products. By employing advanced computational methods to analyze social media discourse, we aim to uncover patterns, sentiments, and themes surrounding celebrity endorsements within this niche market. Moreover, we seek to differentiate between various types of celebrity endorsers, ranging from social media influencers to industry experts, and assess their differential impact on consumer perceptions and purchasing decisions[5].

Through this interdisciplinary approach, combining marketing research with cutting-edge deep learning techniques, we endeavor to contribute to both academic scholarship and practical insights for marketers operating within the healthcare nutraceutical industry. By elucidating the complex interplay between celebrity endorsements and consumer behavior, this research aims to inform evidence-based marketing strategies that maximize the potential of celebrity endorsements to drive brand engagement and sales in the rapidly evolving landscape of health and wellness products[6].

2. Source of Credibility and Attractiveness Model

In the realm of marketing and advertising, understanding the factors that contribute to the effectiveness of celebrity endorsements is paramount for marketers seeking to engage consumers and drive sales. The Source of Credibility and Attractiveness Model (SCAM),

proposed by Ohanian in 1990, has emerged as a seminal framework for comprehending the mechanisms underlying celebrity endorsement effectiveness. This model offers valuable insights into how consumers perceive and respond to celebrity endorsers, shedding light on the intricate interplay between credibility, attractiveness, and consumer attitudes.

At its core, the SCAM posits that the effectiveness of celebrity endorsements is contingent upon two primary dimensions: credibility and attractiveness. Credibility refers to the perceived expertise, trustworthiness, and believability of the endorser, while attractiveness encompasses physical appeal, likability, and similarity to the target audience. By examining these dimensions, marketers can assess the potential impact of celebrity endorsements on consumer attitudes and behaviors across different product categories and target demographics.

The SCAM framework has garnered widespread attention and empirical validation, with numerous studies confirming its relevance and applicability across diverse contexts. Researchers have employed the SCAM to explore various facets of celebrity endorsement effectiveness, including its impact on brand attitudes, purchase intentions, and consumer engagement. Moreover, the model has been instrumental in guiding marketing practitioners in selecting suitable celebrity endorsers and crafting compelling advertising campaigns that resonate with their target audience.

Despite its enduring popularity and utility, the SCAM is not without its limitations. Critics have highlighted the need for nuanced considerations beyond credibility and attractiveness, such as endorsement fit, message congruity, and cultural relevance, which may exert significant influence on consumer responses to celebrity endorsements. Additionally, the evolving landscape of social media and influencer marketing has prompted calls for an updated understanding of celebrity endorsement dynamics in the digital age[7].

In light of these considerations, this paper aims to revisit the Source of Credibility and Attractiveness Model, examining its relevance and applicability in contemporary marketing contexts. By synthesizing existing research findings and integrating insights from recent developments in influencer marketing and digital advertising, we seek to enrich our understanding of the mechanisms driving celebrity endorsement effectiveness. Furthermore, we propose avenues for future research and practical implications for marketers seeking to leverage celebrity endorsements as a strategic tool for enhancing brand awareness, credibility, and consumer engagement. Through this endeavor, we aim to contribute to the ongoing discourse surrounding celebrity endorsement theory and practice, facilitating informed decision-making and innovation within the dynamic landscape of contemporary marketing communications[8].

3. Celebrity and Product Congruence

In the realm of marketing, the alignment between a celebrity endorser and the product they promote plays a crucial role in the effectiveness of endorsement campaigns. This alignment, often referred to as "celebrity and product congruence," involves ensuring a harmonious fit between the celebrity's image, values, and persona, and the attributes, target audience, and positioning of the endorsed product.

Celebrity and product congruence have been widely recognized as a key determinant of consumer attitudes and purchase intentions. When consumers perceive a strong alignment between the endorser and the product, they are more likely to view the endorsement as credible, authentic, and persuasive. This congruence enhances consumer identification with the brand, fosters positive associations, and ultimately, influences purchase behavior[2].

Research on celebrity and product congruence has explored various dimensions of alignment, including demographic compatibility, lifestyle resonance, and brand image consistency. Studies have demonstrated that congruent endorsements tend to elicit stronger emotional responses, enhance brand recall, and generate higher levels of consumer engagement compared to incongruent pairings. Moreover, the impact of congruence may vary across different product categories, target demographics, and cultural contexts, underscoring the importance of tailored endorsement strategies[3].

In practice, achieving optimal congruence between celebrities and products requires careful consideration of multiple factors, including brand positioning, celebrity relevance, and audience preferences. Marketers must conduct thorough assessments to ensure alignment with the brand's identity and values while also taking into account the target market's perceptions and aspirations. Moreover, ongoing evaluation and adjustment of endorsement strategies are essential to maintain alignment amidst evolving consumer trends and competitive dynamics.

In this paper, we aim to delve into the concept of celebrity and product congruence, exploring its theoretical foundations, empirical evidence, and practical implications for marketers. Through an examination of relevant literature and real-world examples, we seek to elucidate the mechanisms through which congruence influences consumer perceptions and behaviors. Additionally, we will discuss emerging trends and challenges in the field of celebrity endorsements, offering insights and recommendations for enhancing congruence and maximizing the effectiveness of endorsement campaigns. Ultimately, our goal is to contribute to a deeper understanding of the role of congruence in shaping consumer-brand relationships and driving marketing outcomes in today's dynamic marketplace.

4. Deep learning

The theory underpinning the influence of celebrity endorsement on consumer purchase behavior for healthcare nutraceutical products can be approached from various perspectives within marketing and psychology. Here, I'll outline some key theoretical frameworks that inform our understanding of this phenomenon:

Source Credibility Theory: This theory, proposed by Hovland, Janis, and Kelley in 1953, posits that the persuasiveness of a message depends on the credibility of the source delivering it. Celebrity endorsers are often perceived as credible sources due to their expertise, trustworthiness, and attractiveness. Consumers are more likely to trust and be influenced by endorsements from celebrities they perceive as credible, which can positively impact their purchase behavior for healthcare nutraceutical products.

Attribution Theory: Developed by Fritz Heider in the 1950s, attribution theory suggests that individuals tend to attribute the causes of behavior to internal (personal) or external (environmental) factors. In the context of celebrity endorsements, consumers may attribute

their purchase decisions for healthcare nutraceutical products to the influence of the celebrity endorser. Positive associations with the celebrity, such as admiration or trust, can lead consumers to attribute their purchase behavior to the endorsement, thereby influencing their decisions.

Elaboration Likelihood Model (ELM): Proposed by Petty and Cacioppo in 1986, the ELM posits two routes to persuasion: central (systematic) and peripheral (heuristic). In the case of celebrity endorsements for healthcare nutraceutical products, the presence of a celebrity endorser may act as a peripheral cue, triggering heuristic processing among consumers. This means that consumers may rely on cues such as the celebrity's popularity or attractiveness rather than engaging in extensive product evaluation. However, the effectiveness of the endorsement may also depend on the consumer's motivation and ability to process information, which can influence their purchase behavior.

Social Identity Theory: Developed by Henri Tajfel and John Turner in the 1970s, social identity theory posits that individuals categorize themselves and others into social groups, and their identity is derived from their group memberships. In the context of celebrity endorsements, consumers may identify with the celebrity endorser and perceive the endorsed product as congruent with their self-image or desired social identity. This alignment can influence their purchase behavior, as they seek to reinforce their identity through the products they consume.

Consumer Behavior Models: Various consumer behavior models, such as the Theory of Planned Behavior (TPB) or the Technology Acceptance Model (TAM), can also inform our understanding of the influence of celebrity endorsement on purchase behavior. These models consider factors such as attitudes, subjective norms, perceived usefulness, and perceived ease of use, which may be influenced by celebrity endorsements in the context of healthcare nutraceutical products.

By integrating these theoretical perspectives, researchers can develop a comprehensive understanding of how celebrity endorsements impact consumer purchase behavior for healthcare nutraceutical products. This understanding can inform the design of effective marketing strategies and interventions aimed at leveraging celebrity endorsements to promote these products and enhance consumer engagement and satisfaction.

5. Conclusion

This work underscores the potential of deep learning analysis to provide actionable insights into the complex interplay between celebrity endorsement and consumer behavior in the healthcare nutraceutical industry. By embracing advanced analytical techniques and staying attuned to evolving consumer preferences, marketers can navigate the ever-changing landscape of celebrity endorsements effectively and drive meaningful outcomes for their brands.

Conflicts of Interest

The authors declare that they have no competing interests.

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