Examining the Impact of Influencer Endorsements on Consumer Behaviour within the Nutraceutical Industry

By

Inez Teixeira – 20126163

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Abstract

The growing popularity of nutraceutical products, amplified by wellness culture and the COVID-19 pandemic, has been accompanied by the rise of influencer marketing in a largely unregulated digital environment. Despite their perception as safe, natural alternatives to pharmaceuticals, nutraceuticals often lack scientific validation and regulatory oversight, raising concerns about consumer vulnerability and misinformation. This study investigates the impact of influencer endorsements on consumer behaviour in the nutraceutical sector, specifically in comparison to traditional branded advertising. A 2 × 2 between-subjects experimental design was used to assess differences in product evaluations, purchase intent, and perceptions of authenticity, with regulatory awareness and appearance-based consumption motives examined as moderators. Contrary to expectations, branded advertisements outperformed influencer endorsements across all key outcomes. Regulatory awareness significantly weakened the effectiveness of influencer marketing but had minimal effect on branded advertising. Appearance-driven motives consistently predicted favourable product evaluations and heightened purchase intent and further strengthened the influence of source characteristics across both influencer and brand conditions. These findings, informed by psychological frameworks such as the Elaboration Likelihood Model, Social Cognitive Theory, Theory of Planned Behaviour, Parasocial Interaction Theory, and Social Identity Theory, highlight the complex interplay between digital persuasion, consumer identity, and ethical vulnerability. The study offers implications for public policy, marketing practices, and consumer protection in the health and wellness domain.

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Attestation of Authorship

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning."

Name: Inez Teixeira

Signature:

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Ethics Approval

Ethics approval from the Auckland University of Technology Ethics Committee (AUTEC) was granted on 9th April 2025, for a period of three years until 9th July 2028. The AUTEC ethics application number is 25/90.

Chapter one: Introduction

1.1 Background

In a world increasingly preoccupied with wellness and preventive health, a new frontier of self-care has emerged, one that blurs the line between nutrition and medicine. Nutraceuticals, a term coined by Dr. Stephen De Felice in 1989 by merging "nutrition" and "pharmaceutical," refer to food-derived products that promise health benefits, including the prevention or treatment of disease (Puri et al., 2022; Nasri et al., 2014; Tambe et al., 2023). Often sold in medicinal forms, such as supplements, functional foods, and herbal extracts, these products are marketed as natural solutions to modern health concerns (Meštrović, 2023). However, despite their growing popularity, nutraceuticals operate in a regulatory grey area, with inconsistent definitions, limited scientific validation, and minimal legal oversight across global markets (Santini et al., 2018; Blaze, 2021; Orhan et al., 2016).

During the COVID-19 pandemic, consumer behaviour shifted sharply: in the face of heightened health anxiety and uncertainty, many consumers began seeking out products and lifestyle practices aimed at supporting immune function and holistic well-being (National Institutes of Health, 2024). One study found a significant rise in global interest in preventive health, particularly immunity and supplement use, during the early months of the COVID-19 pandemic. Using Google Trends data (January–March 2020), researchers observed strong correlations between COVID-19 case numbers and searches for “immune” and “vitamin,” indicating growing consumer focus on self-directed health protection. Media coverage promoting immune-boosting strategies further amplified public engagement with supplements such as vitamin C and elderberry (Lee et al., 2021).

Nutraceuticals were rapidly embraced as preventative tools against illness, and products containing probiotics, polyphenols, berberine, and micronutrients such as selenium, zinc, vitamin C, and vitamin A surged in popularity (Bhagra et al., 2020; Ratha et al., 2021; Paudel et al., 2022). In the United States alone, nutraceutical sales jumped by 44% just prior to April 2020, with similar increases recorded in the United Kingdom and France (Lordan, 2021). What had once been niche supplements quickly became perceived as essential health products. Yet, despite

this widespread uptake, a crucial question lingers: how do these products offer more than just consumer belief?

Parallel to this rise was the exponential growth of influencer marketing. During pandemic-induced isolation, digital creators filled the void left by disconnected social networks, cultivating trust, relatability, and perceived intimacy. One in three Gen Z and baby boomers reported feeling a sense of community through influencer engagement, marking a significant shift in how consumers relate to media figures (BigCommerce, 2024). Between 2016 and 2020, influencer marketing grew by 470%, ballooning into a $21.1 billion industry by 2023 (West, 2023; Dencheva, 2023). Declining trust in traditional brand advertising further cemented influencers as preferred messengers, especially among younger audiences, with only 28% of Gen Z expressing trust in the brands they engage with (Doerer, 2024). Influencer endorsements were increasingly valued for their perceived authenticity and relatability, often viewed as stemming from personal experience, even when paid (Benevento et al., 2025; Zoupos & Spais, 2022).

The convergence of these two phenomena, the rise of nutraceutical consumption and the dominance of influencer marketing, presents a critical and timely area of inquiry. Influencer marketing, by nature, thrives on the amplification of emerging cultural and consumer trends. Digital creators often act as early adopters who identify and popularise lifestyle movements that align with audience values such as wellness, self-optimisation, and authenticity. Research has positioned influencers as central figures in shaping modern culture, highlighting their dual roles in commerce and social life. They are portrayed as trendsetters and trusted tastemakers who shape consumer preferences through authenticity and credibility, acting as cultural intermediaries who bridge brands and audiences. In doing so, influencers become key agents in producing and legitimising cultural meaning in the digital age (Gurrieri et al., 2023). Within this context, nutraceuticals can be understood as one of the latest manifestations of such trends that influencers leverage, positioned at the intersection of health, beauty, and lifestyle consumption. Yet, while existing research in pharmaceuticals and nutrition explores clinical efficacy, health behaviour, and regulatory issues, these domains do not fully explain the social diffusion and perceived legitimacy of nutraceuticals driven by influencer marketing. As such, this phenomenon cannot be accounted for solely by existing scientific or medical frameworks, highlighting the

need for marketing-focused inquiry into how influencers shape trust and meaning in this unregulated health space.

Additionally, as health products circulate in an unregulated marketplace, often endorsed by non-experts with powerful reach, important questions emerge about the psychological and social mechanisms driving consumer trust and decision-making. Consumer psychology and behavioural theories offer insights into the efficacy of influencer endorsements; however, there remains limited empirical understanding of how these mechanisms operate within evolving regulatory and ethical contexts in the digital health marketplace. Ethical concerns surrounding influencer marketing centre on transparency, accountability, and consumer protection, as the line between personal recommendation and paid promotion is often obscured. The informal and persuasive nature of social media further complicates disclosure, leaving consumers, especially vulnerable groups, susceptible to deception (Vuković & Paković, 2025). The study by Ershov et al., (2025) analyses over 100 million Twitter posts to reveal that undisclosed influencer marketing remains widespread, with around 80–96% of sponsored content lacking proper disclosure despite regulatory guidelines. Undisclosed posts are most common among newer, digitally oriented brands, while older, established companies show higher compliance. Using a novel machine-learning method to detect hidden sponsorship, the authors demonstrate that nondisclosure is persistent, weakly affected by policy changes, and potentially misleading to consumers, highlighting the need for stronger monitoring and enforcement in digital advertising.

Nutraceuticals are frequently marketed as "natural" alternatives to pharmaceuticals, reinforcing the perception of safety. However, the absence of global regulatory standards has raised significant concerns, ranging from undisclosed ingredient quantities and contamination risks to the use of proprietary blends (undisclosed ingredient percentages) that obscure true formulations (Blaze, 2021; Orhan et al., 2016; USU, 2018; Saldanha et al., 2023). Notwithstanding these concerns, influencers continue to promote such products, often lacking adequate disclosure or transparency.

1.2 Research Objectives

This thesis explores the intersection of two growing forces: influencer marketing and nutraceutical promotion. As these industries expand with minimal oversight, understanding how influencer endorsements shape consumer perceptions and behaviour is both an academic and public health imperative. By investigating the psychological impact of these endorsements and examining their implications within a largely unregulated domain, this research aims to illuminate the risks, motivations, and decision-making processes at play in today's digital health economy.

This research seeks to critically examine the psychological and behavioural mechanisms through which influencer endorsements shape consumer perceptions, behaviours, and decision-making within the nutraceutical industry. It aims to investigate the effectiveness of influencer marketing in comparison to traditional branded advertising, particularly in influencing consumer attitudes, product evaluations, perceived authenticity, and purchase intent. The study further endeavours to explore how key psychological frameworks, such as Social Cognitive Theory, Parasocial Interaction Theory, Theory of Planned Behaviour, Social Identity Theory, and the Elaboration Likelihood Model, account for the persuasive impact of influencers within the context of health-related consumer behaviour. Although these theoretical frameworks individually shed light on discrete elements of persuasion, behaviour, and identity, they fall short of fully accounting for the multidimensional nature of influencer-driven consumption within the nutraceutical space. This research therefore proposes a cross-theoretical approach, positioning the intersection of these perspectives as key to understanding how influencers simultaneously shape cognition, emotion, and behavioural intent in health-related marketing.

Additionally, this research aims to assess how consumers interpret influencer-promoted nutraceuticals in an environment characterised by limited regulatory oversight. This lack of oversight of this product category means nutraceuticals are promoted in an area with unclear rules for marketing, and the possibility of misinformation on benefits of products with untested or underexamined ingredients. By situating influencer endorsements within the broader context

of the attention economy, this study also intends to contribute to a deeper understanding of digital persuasion, addressing its ethical, psychological, and societal implications.

1.3 Research questions

Guided by the theoretical and conceptual foundations outlined in the preceding sections, this study is structured around a set of research questions that seek to examine the psychological, behavioural, and contextual factors shaping consumer responses to influencer marketing within the nutraceutical industry. These questions aim to explore the comparative impact of influencer versus branded advertising on consumer attitudes and purchase intentions, assess the moderating role of regulatory awareness, and explore how appearance-based messaging influences consumer evaluations and decision-making. The proposed research questions are:

1. *How do influencer endorsements impact consumer attitudes toward nutraceutical products compared to traditional branded advertising?*
2. *To what extent do influencer endorsements influence consumers' purchase intentions for nutraceutical products compared to branded advertising?*
3. *Does consumer awareness of lack of regulatory oversight in the nutraceutical industry weaken the persuasive impact of influencer endorsements?*
4. *Does a focus on physical appearance shape consumer responses to influencer and branded nutraceutical advertising?*

1.4 Methodology

This study employs a quantitative experimental methodology to examine how influencer endorsements shape consumer attitudes, purchase intentions, and perceptions of authenticity within the nutraceutical sector. Grounded in a realist ontology and objectivist epistemology, the research is designed to identify generalisable behavioural patterns and assess causal relationships between advertising type, regulatory awareness, and consumer responses.

Participants were randomly assigned to conditions involving different advertising and informational stimuli, and data were collected via an online survey. Key constructs were

measured using validated and adapted Likert-type scales, allowing for systematic comparison across groups. Ethical approval was granted by the Auckland University of Technology Ethics Committee (AUTEC), and all participants provided informed consent. This methodological approach provides a robust foundation for testing the proposed hypotheses and understanding the psychological impact of digital endorsements in a complex consumer environment.

1.5 Thesis structure

The structure of this thesis is designed to provide a clear and logical progression from theoretical foundations to empirical findings and their implications. Following this introduction in Chapter one, Chapter two next reviews the relevant literature and theoretical frameworks underpinning influencer marketing and consumer behaviour in the context of the nutraceutical industry. Chapter three outlines the research methodology, detailing the experimental design, data collection procedures, and analytical strategies employed. Chapter four presents the results of the quantitative analyses, addressing each research hypothesis in turn. Chapter five discusses the findings in relation to existing literature, highlighting key contributions, limitations, and implications for practice and policy. The discussion chapter also concludes the thesis by summarizing the main insights and proposing directions for future research. This structure ensures a comprehensive and coherent exploration of the research topic, guiding the reader systematically through each stage of the investigation.

Chapter two: Literature review

2.1 Introduction

Nutraceuticals, often marketed as supplements or functional foods that offer therapeutic or preventative health benefits, occupy a unique space between pharmaceuticals and conventional nutrition (Vignesh et al., 2024). Their rising popularity has been fuelled by consumer demand for natural health solutions, often reinforced through digital marketing and social media platforms (Puri et al., 2022; Vignesh et al., 2024). However, the regulatory landscape surrounding nutraceuticals remains limited and inconsistent, allowing products to enter the market without the same evidentiary standards required of pharmaceutical drugs (Thakkar et al., 2020).

This inconsistency is reflected globally: while the United States regulates nutraceuticals as dietary supplements under the Dietary Supplement Health and Education Act (1994), allowing manufacturers to self-certify product safety without pre-market authorisation, the European Union requires pre-approval of health claims by the European Food Safety Authority (EFSA), yet enforcement remains uneven across member states. In contrast, Canada treats nutraceuticals as Natural Health Products, requiring pre-market licensing supported by evidence of safety, efficacy, and quality, whereas Australia employs a two-tiered, risk-based system under the Therapeutic Goods Act (1989), distinguishing between low-risk listed and high-risk registered products. Japan adopts a tiered model through its Foods for Specified Health Uses (FOSHU) and Foods with Function Claims (FFC), allowing certain claims without government verification of efficacy. Similar divergences exist in Asia, where India and China exhibit rapid market growth driven by traditional medicine integration and government initiatives, but face challenges related to standardisation, quality control, and complex approval processes such as China's "Blue Hat" certification. Collectively, these divergent and often overlapping frameworks demonstrate the absence of international harmonization, revealing how nutraceuticals are regulated with markedly less scientific scrutiny and evidentiary rigour than pharmaceuticals, despite their expanding global market and increasing consumer demand for functional and scientifically substantiated products (Santini et al., 2018; Blaze, 2021; Silpi, 2025). This lack of oversight becomes particularly problematic when such products are promoted by social influencers, as it

raises concerns around misleading health claims, insufficient disclosure, and the potential for consumer harm.

The proliferation of influencer marketing within the nutraceutical industry presents new challenges for understanding how consumers process persuasive digital content, particularly in health-related domains where trust, credibility, and misinformation intersect. As traditional advertising paradigms give way to more dynamic and personalised forms of persuasion, it becomes essential to re-evaluate the psychological mechanisms underpinning consumer responses to influencer endorsements. This literature review critically examines the evolving landscape of influencer marketing, situating it within contemporary debates in consumer psychology, digital advertising, and regulatory discourse.

While grounded in established behavioural theories, this review extends beyond conventional frameworks to consider the shifting dynamics of consumer attention and trust in an era where attention, rather than money, has become the dominant currency (Mintzer, 2020). While traditional marketing theories offer valuable insights into this phenomenon, they individually struggle to fully capture the complexity of influencer marketing, particularly as digital content increasingly blurs the line between authentic recommendations and commercial messaging (Ekinci et al., 2025). Adopting a holistic perspective to shape the current state of research, the review in this chapter seeks to synthesise literature on influencer credibility, appearance-driven consumption, and the opacity of marketing practices in the nutraceutical sector. It also addresses the broader societal and ethical implications of persuasive digital media in a largely underregulated industry. While studies focused solely on the pharmacological efficacy of nutraceuticals are excluded, the review in this thesis emphasises research that offers insight into the psychological, perceptual, and behavioural processes that shape consumer decision-making in this space.

The chapter follows a structured thematic progression, beginning with the rise of nutraceuticals and the key drivers behind their consumption. It then explores relevant theoretical frameworks, including social and cognitive models of persuasion, before broadening the focus to examine how the digital environment, characterised by attention scarcity, algorithmic content delivery,

and short-form aesthetics, has transformed influencer marketing strategies. The analysis then narrows to assess the specific impact of influencer endorsements on consumer behaviour within the nutraceutical industry and concludes by addressing pressing ethical and regulatory concerns. The chapter closes by presenting the proposed hypotheses that guide the study's empirical investigation.

By mapping the conceptual terrain, this chapter identifies significant gaps in the literature, including the need to reassess how consumers engage with influencer marketing in an era of information saturation and rapid digital consumption. In doing so, it provides a critical foundation for the study's quantitative, experimental approach and contributes to a broader understanding of the psychological and ethical complexities surrounding influencer endorsements in industries where consumer trust and informed decision-making are paramount.

2.2 Theoretical frameworks & perspectives: Understanding influencer psychology and efficacy

The effectiveness of influencer marketing is rooted in psychological and behavioural theories that explain how individuals process information, form attitudes, and make purchasing decisions. Given the growing influence of social media sources in shaping consumer perceptions, theoretical frameworks provide essential insights into the mechanisms underlying influencer efficacy. This section examines key psychological perspectives that elucidate the persuasive power of influencers, focusing on Social Cognitive Theory, Parasocial Interaction Theory, and the Theory of Planned Behaviour. By integrating these perspectives, this section highlights the interplay between cognitive, emotional, and social factors that make influencer endorsements a potent marketing strategy.

2.2.1 Social cognitive theory

Social Cognitive Theory (Bandura, 1986) provides a framework for understanding how psychological mechanisms shape consumer behaviour, particularly in the context of influencer marketing. The theory emphasises the interplay between personal factors, environmental

influences, and behavioural patterns, making it particularly relevant in this domain (Schunk & DiBenedetto, 2023). Social Cognitive Theory explains both the initiation and maintenance of behaviours by examining how individuals acquire and sustain behaviours over time. A key principle of Social Cognitive Theory is that individuals are not passive recipients of environmental stimuli but active participants in shaping their own behaviour through self-regulation and reflection (Stajkovic & Sergent, 2019). Unlike behaviourist theories, which suggest that learning occurs primarily through trial and error, Social Cognitive Theory highlights the significance of observational learning and imitation in human behaviour as a pathway to consumer learning (Nickerson, 2023). Bandura's perspective remains among the most widely cited, as it underscores the role of social influence and reciprocal relationships in shaping individual actions and perceptions (LaMorte, 2022).

Within influencer marketing, Social Cognitive Theory provides valuable insights into consumer decision-making by highlighting the reciprocal interactions between personal, environmental, and behavioural factors. This dynamic is conceptualised through the triadic reciprocality model, which explains how these elements continuously influence one another (Schunk & DiBenedetto, 2019). Lo Schiavo et al. (2019) apply a modelling approach to illustrate this process, demonstrating how variables such as self-efficacy, behavioural outcomes, and environmental challenges evolve and interact over time. In the context of influencer endorsements, these reciprocal influences become evident. For instance, when consumers observe an influencer promoting a dietary supplement (environmental factor), they may develop positive perceptions of its effectiveness (personal factor), which can subsequently drive future purchasing behaviour (behavioural factor).

This process is further reinforced by social comparison theory (Festinger, 1954), which explores how individuals evaluate themselves relative to others. Consumers frequently engage in upward social comparison, evaluating their abilities and status against influencers who embody aspirational lifestyles. Social comparison can serve as a means of self-improvement, where people seek comparisons to evaluate themselves, enhance self-perception, and identify ways to improve.

Influencers, often perceived as aspirational figures, shape these comparisons by showcasing curated lifestyles, skills, or achievements. This process can provide motivation and insights for personal growth while also influencing self-efficacy and perceived potential for success (Crusius et al., 2022). By associating product use with the influencer's perceived success, health, or beauty, consumers develop a psychological motivation to purchase the same products to achieve similar outcomes. This mechanism strengthens the observational learning component of Social Cognitive Theory, as social comparisons shape personal beliefs and reinforce behavioural choices. This aligns with Lo Schiavo et al.'s Triadic Reciprocal Determinism (TRD) model, where shifts in one factor, such as exposure to influencer content, can alter personal beliefs and lead to specific consumer actions. By shaping perceptions, reinforcing beliefs, and normalising product use, influencer endorsements leverage the core mechanisms of Social Cognitive Theory, making them a powerful tool in the nutraceutical industry.

Schunk and DiBenedetto further identify personal factors such as self-efficacy, goals, and social comparisons as critical agents shaping consumer motivation and behaviour. Self-efficacy is defined as an individual's belief in their ability to perform behaviours required to achieve specific outcomes (Carey & Forsyth, 2009). In this context, vicarious experiences, such as observing influencers effectively using nutraceutical products to achieve desired outcomes, can enhance self-efficacy, increasing consumers' confidence in their ability to make informed purchasing decisions. Influencers serve as role models, offering vicarious experiences that shape self-efficacy and influence outcome expectations, leading consumers to believe they will achieve similar positive results.

Observational learning is also pertinent in the context of influencer endorsements as it explains how consumers acquire attitudes and behaviours by observing influencers. Through the four key components of observational learning, from attention to retention, reproduction, and motivation, consumers learn from influencers' product usage, reviews, and lifestyle choices, shaping their purchasing decisions. Furthermore, Bandura (1986) classified observational learning into three models:

1. Live Model: Involves direct observation of an individual performing a behaviour.

2. Verbal Instructional Model: Consists of verbal descriptions and explanations of a behaviour.
3. Symbolic Model: Includes behaviours exhibited by real or fictional characters in various media, such as books, films, or online platforms (Cherry, 2024; Manik et al., 2022).

These three models of observational learning further demonstrate the multiple mechanisms through which influencer endorsements operate. The Live Model is evident when influencers showcase a product in real-time, such as tutorials, unboxing videos, or demonstrations, which facilitate direct learning. The Verbal Instructional Model is reflected in influencer explanations, reviews, or promotional discussions that provide detailed guidance on product use and benefits. Lastly, the Symbolic Model applies when influencers create aspirational content, where their curated online personas and lifestyles influence consumer perceptions and behaviours, even in the absence of direct interactions. By leveraging these mechanisms, influencer endorsements operate through multiple pathways, both direct and indirect, to potentially enhance engagement, persuasion, and credibility, making influencer endorsements a powerful marketing tool.

These three models, combined with the four key components of observational learning via attention, retention, reproduction, and motivation, thereby enhance the overall impact of influencer endorsements. By leveraging these models, influencers can effectively modulate consumers' self-efficacy, shape outcome expectations, facilitate social comparisons, and create a digital environment that normalises and promotes nutraceutical use. The application of Social Cognitive Theory principles in influencer marketing elucidates the psychological mechanisms underlying consumer behaviour. It also underscores the potential impact of influencer endorsements to shape perceptions, motivate purchases, and drive product adoption in the nutraceutical space.

While Social Cognitive Theory effectively explains how observational learning and social comparison drive consumer behaviour, it does not fully account for the emotional and relational dimensions that strengthen consumer–influencer bonds. Specifically, Social Cognitive Theory focuses on cognitive and behavioural mechanisms but overlooks how feelings of intimacy, trust, and perceived authenticity develop and influence persuasion in digital environments. This gap is

addressed by theories such as Parasocial Interaction Theory, which illuminate these affective processes.

2.2.2 Parasocial interaction theory

Building upon this foundation, Parasocial Interaction theory (PSI; Horton & Richard Wohl, 1956) offers insights into the unique relationships that develop between consumers and influencers. This theory elucidates how the perceived intimacy and authenticity of influencers can enhance their persuasive power, further explaining the effectiveness of their endorsements in shaping consumer attitudes and behaviours. PSI conceptualises the one-sided relationship between an audience member and a media figure, characterized by an illusion of connection or intimacy akin to real-life interpersonal bonds (Rasmussen, 2018). Such relationships occur when individuals invest emotional energy, time, and interest in media figures, often perceiving these interactions as reciprocal, even though the media figure remains unaware of their existence (Bennett et al., 2020). PSI is cultivated through media performers' behaviours during exposure situations, such as directly addressing the audience, employing informal conversational styles, and simulating interpersonal exchanges (Dibble et al., 2015).

Social media influencers, unlike traditional celebrity endorsers, are typically ordinary individuals who have gained significant followings within specific niches, creating a high degree of relatability and perceived similarity with their audience (Djafarova & Rushworth, 2017). This relatability, combined with their perceived authenticity and niche expertise, enables influencers to shape consumer attitudes more effectively while reducing psychological resistance to advertising. Additionally, their personalized content and interactive engagement with followers amplify the credibility and emotional resonance of their endorsements, positioning influencers as highly persuasive agents in driving purchasing decisions (Feng et al., 2023). Digital platforms also foster communities centred around shared values, where followers engage through subscriptions, comments, and interactions, further enhancing the perceived intimacy and trustworthiness of influencers (Nambisan & Watt, 2011).

In the context of the digital era, the ubiquity of social media platforms such as Instagram, YouTube, and TikTok has amplified the prevalence of parasocial relationships. Algorithms on these platforms curate personalized content based on user preferences, thereby increasing audience exposure to specific media figures and content types such as nutraceutical usage. This curated exposure, coupled with the habitual documentation and sharing of influencers' daily lives, creates a perception of intimacy and authenticity (Martin, 2023). Influencers' ability to seamlessly weave personal narratives with product endorsements further deepens these parasocial bonds, fostering heightened trust and relatability (Chung & Cho, 2017; Aw & Labrecque, 2020, p. 896).

Furthermore, parasocial relationships (PSRs) also play a crucial role in understanding the effectiveness of influencer endorsements. PSRs refer to long-term connections that extend beyond media exposure, resembling real relationships characterized by perceived intimacy, friendship, and identification (Hoffner & Bond, 2022). Yuan and Lou (2020) identify four key determinants of PSR strength: perceived attractiveness, similarity, procedural fairness, and interpersonal fairness in interactions. The strength of these relationships mediates the impact of these factors on followers' interest in influencer-promoted products. Notably, their study highlights the unique nature of influencer-follower interactions, which, while more interactive than traditional celebrity-audience relationships, still fall short of genuine two-way communication.

Building on this, Kim (2022) explores the relationship between social presence and PSRs in shaping consumer behaviour. The findings indicate that higher social presence in influencer posts reduces the perception of promotional intent, with PSRs mediating the relationship between social presence and purchase intentions. In simpler terms, when influencer posts appear more personal, followers become less aware of the promotional nature, and their PSR with the influencer influences their likelihood of making a purchase. Farivar et al. (2021) corroborate and expand upon this by integrating PSRs with opinion leadership, asserting that although both constructs enhance purchase intentions, PSRs exert a stronger influence. Factors such as storytelling and perceived authenticity further amplify these effects, emphasizing the role of emotional connection and trust in influencer endorsements. Additionally, Su et al. (2021)

highlight the significance of interpersonal attraction in forming PSRs, which drive purchasing behaviour through mechanisms of informational influence and perceived credibility. Positive online engagement further strengthens these effects, offering actionable strategies for marketers aiming to leverage influencer credibility effectively.

The psychological dynamics underpinning PSIs and PSRs highlight the profound influence of influencer endorsements on consumer behaviour. By fostering trust, emotional connection, and perceived authenticity, influencers subconsciously shape purchasing decisions and behaviour, often bypassing traditional advertising scepticism. This underscores the need to critically explore the implications of these psychological effects on consumers, especially in a sector where health-related claims demand heightened scrutiny and ethical accountability.

However, while PSI elucidates the emotional connection and perceived authenticity that underpin influencer persuasion, it offers limited explanation of how these relationships translate into sustained behavioural intentions or actual purchasing behaviour. PSI focuses primarily on affective attachment rather than on the cognitive evaluation or volitional processes that guide consumer decision-making. The Theory of Planned Behaviour complements this by explaining how attitudes, social norms, and perceived control mediate the transition from psychological connection to behavioural action.

2.2.3 Theory of Planned Behaviour & Theory of Reasoned Action

Complementing these perspectives, the Theory of Planned Behaviour (TPB) (Ajzen, 1991) and its predecessor, the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1977) provide a useful model for predicting and explaining consumer decision-making processes. TPB asserts that attitudes toward a behaviour significantly shape the intention to perform it (Ajzen, 1991). These theories offer a structured approach to understanding how influencer endorsements can shape attitudes, subjective norms, and perceived behavioural control, ultimately influencing purchasing intentions and behaviours in the nutraceutical industry. Within TPB, the most proximal determinant of behaviour is behavioural intention, representing an individual's perceived likelihood of performing a specific action. In the TRA, behavioural intentions are

influenced by two primary factors: attitudes toward the performing the behaviour (positive or negative evaluation) and subjective norms (perceived social pressure to act or not act; Hale et al., 2003).

The TPB expands upon this framework by adding perceived behavioural control, which refers to an individual's perception of the ease or difficulty of performing a behaviour (Ajzen, 2020; Kalafatis et al., 1999). Perceived behavioural control can affect intentions alongside attitudes and subjective norms and can directly affect behaviour when actual control aligns with perceived control. This third determinant allows the TPB to account for situations where individuals may lack complete volitional control (actions made by choice and without external influence) over their actions (Kan, & Fabrigar, 2017). Both theories acknowledge the potential indirect influence of external variables on behaviour through their effects on beliefs and the relative importance of attitudes and subjective norms (Ajzen, 1991).

Through the TPB and TRA the impact of influencer endorsements on consumer decision-making in the nutraceutical industry is magnified. Fundamentally, influencers can influence attitudes by promoting nutraceutical products as beneficial or aspirational, while their social presence establishes subjective norms by creating perceived social pressure to adopt such products. Additionally, influencers often enhance perceived behavioural control by addressing potential barriers, such as affordability, accessibility, and product efficacy, empowering consumers to feel capable of purchasing or using these products. These dynamics highlight how TPB’s components, attitudes, subjective norms, and perceived behavioural control, interact to shape behavioural intentions and actual purchasing behaviours. Furthermore, TPB's inclusion of perceived behavioural control accounts for scenarios where external influences, such as marketing deception or regulatory issues, limit volitional control, making it particularly relevant for evaluating the ethical implications of influencer endorsements in the nutraceutical sector.

In sum, Social Cognitive Theory, PSI, and TPB each provide critical yet distinct insights into influencer marketing effectiveness. Social Cognitive Theory explains how consumers learn and model behaviours through observation and perceived efficacy; PSI reveals how emotional bonds, trust, and perceived authenticity amplify persuasion; and TPB clarifies how these cognitive and

emotional influences are translated into behavioural intentions and actions. However, existing literature tends to apply these theories in isolation, overlooking their complementary strengths and the multidimensional nature of influencer persuasion. Collectively, these gaps indicate that no single framework adequately captures the interplay between observational learning (Social Cognitive Theory)**,** relational attachment (PSI)**,** and behavioural intention formation (TPB**)** in shaping consumer responses to influencer marketing, particularly within the health-focused nutraceutical sector**,** where credibility, authenticity, and ethical considerations intersect. Therefore, this study adopts a multi-theoretical perspective that integrates these frameworks to provide a more holistic understanding of how influencers shape consumer perceptions and behaviours. This integrated approach enables a richer analysis of both the cognitive–behavioural and affective–relational mechanisms at play, addressing key theoretical gaps in existing research and establishing the foundation for the subsequent sections of this thesis.

2.3 Key motivators driving nutraceutical consumption

To understand how influencer endorsements intersect with nutraceutical consumption, it is important to examine the key factors that motivate consumers to use these products. Azjen's (1991) Theory of Reasoned Action is underpinned by motivators that drive attitudes and intention to behave. So before social influencers enter the equation and exert models and social pressure that normalizes adoption of nutraceuticals, consumers first exhibit underlying motivations to adopt the use of nutraceutical products.

Teoh et al's. (2019) systematic analysis presents an introductory foundation to conceptualise the factors affecting consumers' decisions on the use of nutraceuticals. A total of 76 research studies from diverse global locations, including the United States, United Kingdom, multiple European, Asian, and Middle Eastern countries, as well as Australia, New Zealand, Canada, and African nations, were reviewed. The findings revealed four primary thematic categories for using nutraceutical dietary supplements: perceived health benefits, product safety, accessibility, and information sources. While these factors remain pertinent motivators driving consumption, the rapid progression of nutraceutical trends and innovation warrants further exploration of potential motives as well.

Building on these insights, Chopra et al. (2022) highlight broader market forces such as ageing demographics, rising healthcare costs, and expanding online access that intensify the demand for health-promoting products. However, from a consumer-centric perspective, motivations for nutraceutical use can be better understood through three distinct functional orientations**:**, maintenance, prevention, and enhancement**.** This functional typology recognises the flexible and overlapping ways in which consumers interpret and use nutraceuticals, reflecting personal goals rather than fixed product categories. Table 1 provides a simplified overview of these three motivators, illustrating how diverse nutraceutical forms, including supplements and functional foods, align with consumer intentions. The subsequent sections explore how social influence mechanisms, particularly through digital endorsements, may shape these underlying motives.

Table 1: *Nutraceutical functions*

Motivational Function	Claimed Benefits / Consumer Goals	Underlying Consumer Motivation	Examples of Nutraceuticals (Supplements & Functional Foods)
Maintain	Sustains everyday wellness, energy, gut balance, and mental clarity; supports immune resilience and sleep quality.	Desire to maintain current health and balance; everyday health management and prevention of deficiency; maintaining productivity and lifestyle performance.	Multivitamins; Omega-3 fatty acids; probiotics and probiotic yoghurts; fibre-fortified breads; vitamin waters; fermented foods (kombucha, kefir); wholegrain cereals.
Prevent	Supports immune function, reduces disease risk, protects against cell damage,	Desire to reduce future illness risk, complement conventional healthcare, and take proactive steps	Omega-3 capsules or fortified milks for heart health; antioxidant-rich foods (berries, green tea, turmeric);

Motivational Function	Claimed Benefits / Consumer Goals	Underlying Consumer Motivation	Examples of Nutraceuticals (Supplements & Functional Foods)
	maintains metabolic and cardiovascular health.	for long-term health security.	vitamin D-enriched spreads or cereals; herbal supplements (ginger, ginseng).
Enhance	Improves physical appearance, cognitive function, or performance; aids weight management, muscle recovery, and aesthetic goals.	Desire for self-optimisation and visible outcomes (beauty, fitness, productivity); pursuit of enhanced body image and self-efficacy.	Protein shakes and energy bars; collagen drinks; nootropic beverages; creatine; beauty gummies; adaptogenic lattes (maca, ashwagandha).

Data adapted from National Institutes of Health (2013); Rajasekaran et al. (2008); Nasri et al. (2014); Sosnowska et al. (2017); Dutta et al. (2018); Puri et al. (2022); Mah et al. (2022); Salman et al. (2022); Kubala (2022); Gao et al. (2023, pp. 1-20); Cleveland Clinic (2023); Beale (2023); March and Reid (2023); Geng (2023); Heisig (2023); National Institutes of Health (2023); Devje (2024); CentreSpringMD (2024); Antonio et al. (2024); The American National Red Cross (2025); Hirsch (2025); Xu et al. (2025); Ajmera (2020).

2.3.1 Maintenance: Health & Wellness consciousness

Health and wellness consciousness has become a central psychological motivator influencing consumers' purchase intentions and interest in nutraceutical products. Consumers increasingly perceive nutraceuticals as valuable for their health, a belief that strongly shapes their purchasing decisions (Blendon et al., 2013; Dickinson et al., 2014). A survey by McKinsey & Company (2022), which included over 2,000 U.S. consumers, identified six core dimensions of wellness that consumers consistently reference: better health, fitness, nutrition, appearance, mindfulness, and sleep. It was also found that consumers are progressively seeking products that address multiple wellness needs, indicating a trend toward a holistic approach to health.

A study by Huang et al. (2022) showed that health consciousness strongly predicts the intent to purchase health-focused products, particularly when these products are perceived as natural and nutritionally valuable. This correlation aligns with findings from Ali and Ali (2020), which revealed that highly health-conscious consumers are more inclined to seek out and pay premium prices for health and wellness products. In this study, 44% of respondents expressed willingness to pay an average premium of 9% for products aligned with their wellness goals. Additionally, Deloitte's European consumer survey of 17,000 respondents across 15 countries highlights a rising interest in the connection between food and health. Findings show that 64% of consumers have become more aware of how their food choices affect their health. This growing awareness is shaping purchasing behaviours, as consumers increasingly prioritise health in their buying decisions, reflecting a broader shift toward wellness-focused consumption (Deloitte, 2023). Together, these consumer market studies illustrate that a heightened focus on health and wellness is driving consumer behaviour in the nutraceutical market, underscoring the importance of wellness-related attributes in product appeal.

The growing focus on health and wellness among consumers has been driven by a multitude of factors, but the internet and the rise of digital platforms lay at the core of this phenomenon. The increased access to information facilitated by the internet has revolutionised the way consumers seek and view health information, offering vast, interactive, and often anonymous resources for individuals to explore (Cline & Haynes, 2001). The expansion of health-related content has empowered consumers to adopt a more proactive and participatory role in managing their health. With increased access to health information, consumers feel better equipped to make informed decisions aimed at healthier lifestyle choices (Singh et al., 2019). Health information-seeking behaviour has been shown to significantly enhance medical decision-making by allowing individuals to assess their health options, reduce uncertainty, and ultimately increase engagement in preventive health behaviours (Bratucu et al., 2014). Health social networking sites, defined as virtual communities where users connect over shared health concerns and exchange relevant information (Li, 2013), further support consumers by facilitating the sharing of collective insights, personal experiences, and peer influence, thereby fostering greater awareness of the health impacts of personal behaviours (Loss et al., 2014).

Influencers, through their strategic use of social media platforms, have cultivated a unique form of "influencer pedagogy" that resonates with their followers. Conceptually, this is described as indirect educational processes facilitated through relatable interactions between influencers and their followers on social media (Lupton & Southerton, 2024). Hendry et al. (2021) explain that influencers cultivate a perception of authenticity by blending relatable content with aspirational messaging, which bolsters their credibility as sources of health information. Despite criticism from traditional health authorities, Hendry et al. (2021) further note that influencers effectively engage and educate audiences on health topics by combining personal experiences with product recommendations, presenting information in a way that feels authentic and accessible to followers. At this juncture, the role of influencers in propagating health and wellness ideologies is emphasised. Their potential to educate in a highly personalised and relatable manner becomes a powerful tool for normalising and popularising nutraceutical consumption and trends.

Thus, the convergence of heightened health consciousness, accessible digital health information, and influencer-driven education (or sharing of materials framed as being educational) has profoundly shaped consumer attitudes and behaviours toward nutraceuticals. This collective influence has positioned wellness as a core driver in consumer decision-making and market growth.

2.3.2 Prevention: Disease Prevention & Longevity

Prevention represents a key motivator driving nutraceutical consumption, encompassing the desire to proactively manage health, reduce disease risk, and support longevity. Preventive health, in broad terms, focuses on reducing the risk of disease and illness through proactive measures that address potential health issues before they arise. It encompasses strategies that aim to detect problems early, promote recovery, enhance quality of life, and ultimately reduce the occurrence of disease, disability, and premature death (American College of Preventive Medicine, 2024; Cuffari, 2024; Lenartowicz, 2023). Within this context, nutraceuticals occupy a distinctive role as natural, food-derived compounds consumed over sustained periods to support health, prevent illness, and protect against chronic conditions. They are increasingly valued for their perceived potential to enhance well-being, slow biological ageing, support bodily functions,

and increase life expectancy, owing to their nutritional, safe, and therapeutic benefits (Nasri et al., 2014).

Nutraceuticals bridge the gap between diet and pharmacotherapy, appealing to health-conscious consumers who seek natural or complementary approaches to wellness. Rather than replacing conventional medicine, they often serve to complement pharmacological treatments or mitigate the need for medical intervention (Daliu et al., 2018). Rajasekaran et al. (2008) highlight the rapid expansion of the nutraceutical industry, driven by growing consumer interest in preventive health and wellness. This proactive health orientation has stimulated the development of products targeting cardiovascular, metabolic, and neurodegenerative conditions, reflecting the convergence of food and medicine as functional foods and supplements deliver benefits beyond basic nutrition. Such integration exemplifies the consumer preference for holistic and preventive strategies to maintain health and mitigate disease risk.

This preventive orientation also intersects with population ageing and longevity trends. Longevity, defined as the capacity to live beyond the average lifespan (Berghoff, 2024), is increasingly relevant in the context of global demographic ageing, marked by a rising proportion of individuals aged 60 and older (Reynaud & Miccoli, 2019; Ismail et al., 2021). According to the World Health Organization (2024), one in six people globally will be aged 60 years or older by 2030, with this number projected to double by 2050. While increased life expectancy reflects medical and social progress, many of these additional years are often lived in poor health (National Research Council et al., 2001; World Health Organization, 2024). This gap between lifespan and "health span", the years lived in good health (Peterson & Friedman, 2017; The University of Vermont Health Network, 2020), has intensified consumer demand for nutraceuticals that claim to prevent or delay age-related decline. As Borrás (2021) observes, longer life expectancy has paradoxically contributed to decreased health span, motivating individuals to adopt preventive practices to sustain vitality, cognition, and physical function across the lifespan.

Nutraceuticals, when combined with healthy diets and active lifestyles, are marketed for their potential to mitigate age-related illnesses and promote well-being. Market growth in this sector is driven by heightened health awareness, rising healthcare costs, and improved accessibility

through digital and retail distribution channels (Chopra et al., 2022; Grochowicz et al., 2021). Empirical studies also highlight the specific preventive benefits attributed to nutraceuticals: Fekete et al. (2023) demonstrate how nutritional supplements, particularly vitamins, minerals, and antioxidants, support cognitive health, memory, and attention while protecting against oxidative stress. Similarly, Alalwan (2022) notes their role in maintaining bone and joint health, reducing inflammation, and supporting overall function as people age (World Health Organization, 2022). However, both studies emphasise that supplementation should be individualised, accounting for factors such as age, diet, and lifestyle.

Beyond ageing, the preventive function of nutraceuticals also extends to general health maintenance and disease avoidance across age groups. Kovács et al. (2023) found that even among younger consumers and leisure athletes, health preservation was the dominant reason for supplement use, aligning with Hys (2020), who attributes the rise in nutraceutical purchases to a global shift toward preventive healthcare, especially in ageing societies. Yet, Hys (2020) also warns that limited consumer understanding often leads to confusion between nutraceuticals as food products versus medicinal interventions, influencing perceptions of efficacy and safety.

Complementing these findings, Das et al. (2011) and Dutta et al. (2018) note that nutraceuticals are promoted as enhancing digestion, cardiovascular function, immunity, and mental well-being, while protecting against chronic diseases such as cancer and neurodegenerative disorders. However, claims are frequently qualified by terms such as “can,” “may,” or “potential,” signalling uncertainty and the absence of conclusive evidence. This imprecision risks overstating the scientific credibility of preventive claims and highlights the need for clearer regulation and stronger empirical validation (Rajasekaran et al., 2008; Santini et al., 2018).

Overall, the integration of preventive health and longevity motives reflects a broader cultural shift toward proactive self-care. Nutraceuticals promise to bridge the gap between maintaining wellness and preventing decline, offering consumers agency over their health trajectories. Yet, their effectiveness remains contingent on evidence-based validation and responsible marketing to ensure consumer protection in a rapidly expanding, prevention-oriented marketplace.

2.3.3 Physical & self enhancement

Appearance-based consumption motivation constitutes a core driver of nutraceutical use, reflecting the growing cultural emphasis on aesthetic self-optimisation and holistic well-being. This motivation, though seemingly superficial, encompasses a spectrum of aspirations, ranging from physical appearance and performance enhancement to deeper psychological transformations and identity construction. Nutraceuticals, once predominantly focused on addressing nutritional deficiencies or health conditions, have evolved into multifunctional products aligned with modern consumer demands. They now offer goal-oriented outcomes across various domains, including beauty, performance, and wellness, positioning themselves as key agents in consumers' pursuit of self-improvement. In this category of nutraceutical supplements, social modelling via influencers is particularly resonant.

In the beauty sector, nutraceuticals have gained substantial traction for their purported ability to enhance skin, hair, and nail health from within. Supplements such as collagen, biotin, and vitamin C are widely promoted for improving skin elasticity, reducing signs of aging, and strengthening hair and nails, especially where dietary intake may be insufficient (Januszewski et al., 2023; Villines, 2022; Nathan, 2021). Moreover, ingredients such as probiotics and omega-3 fatty acids (see Table 1) are increasingly marketed for their potential to alleviate acne and inflammation, further integrating these products into daily beauty regimens (Fouhy, 2022; Kubala, 2022). This shift has given rise to the "beauty from within" trend, which reflects a growing consumer preference for holistic appearance-based interventions. The cosmeceuticals market, valued at $6.8 billion in 2020, is projected to reach $11.7 billion by 2027, highlighting increasing demand for ingestible beauty solutions (Grand View Research, 2021).

This surge in consumption is underpinned by psychological associations that equate beauty with success, happiness, and social capital, a perception continually amplified by digital media and influencer culture (Campos et al., 2023). Korzeniowska et al. (2014) reported that 73% of respondents aimed to improve the condition of their skin, hair, and nails, with 48% of women and 64% of men specifically targeting hair improvement. Similarly, Zamil et al. (2022) found that 88% of respondents cited skin, hair, and nail enhancement as their primary reason for

supplement consumption, reaffirming the prominence of appearance-oriented goals. While health remains a key concern, aesthetics has emerged as a dominant motivator in the expanding nutraceutical landscape.

Advancements in nutritional science have further propelled the development of cosmeceuticals targeting biological pathways associated with aging and appearance. Formulations now claim to stimulate collagen synthesis, regulate melanin production, and improve intercellular communication to address wrinkles, pigmentation, and skin vitality at a cellular level (Morganti, 2008). Despite these innovations, questions remain regarding efficacy, as scientific evidence varies across ingredients and formulations (Garcia & Patel, 2024), reinforcing the importance of consumer perception and marketing narratives in shaping demand.

Beyond beauty, nutraceuticals promoted as ergogenic aids, such as protein, amino acids, creatine, and caffeine, are increasingly consumed to enhance strength, endurance, and recovery. While these products are popular among athletes and physically active individuals, they are also widely adopted by general consumers, particularly for aesthetic purposes such as muscle toning and body sculpting (National Institutes of Health, 2024). This broad usage reinforces the idea that appearance-based motivation transcends traditional fitness goals. Moloughney (2023) supports this, noting that among more than 2,000 U.S. female consumers surveyed, 81% used supplements to "stay healthier," while 92% endorsed an "inside-out" beauty philosophy. Their goals extended beyond general wellness to include hair growth (79%), stronger nails (65%), and firmer skin (60%), confirming the growing demand for self-enhancing products that integrate seamlessly into daily routines.

These consumer motivations reflect a broader cultural phenomenon encapsulated by the modern "glow-up" narrative, a term popularised by social media to describe transformative improvements in appearance, confidence, and lifestyle. While "glow-up" is colloquial, it represents a meaningful sociocultural process of self-enhancement that aligns with contemporary ideals of personal growth and success (Collins English Dictionary, 2024; Dictionary.com, 2024). The glow-up is not limited to physical changes but involves psychological transformation, identity construction, and lifestyle modification. In this sense, it provides a symbolic framework

through which the appeal of nutraceuticals can be understood, not merely as functional health products but as tools for achieving aspirational, image-driven goals.

Nutraceuticals are therefore situated at the intersection of wellness and identity performance, particularly in digital spaces where self-presentation is curated and rewarded. The glow-up narrative, driven by influencer marketing and aspirational content, encourages consumers to view personal transformation as both attainable and necessary for social validation. This has important theoretical implications. Symbolic interactionism offers a critical lens for understanding how beauty and wellness ideals are socially constructed and internalized. Rooted in the work of Mead (1934), the theory suggests that individuals act based on meanings derived from social interactions, which are shaped and reshaped through cultural discourse (Aksan et al., 2009). The concept of the "looking-glass self" further explains how consumers reflect on how they are perceived by others, adjusting their behaviour to align with socially validated ideals (Nickerson, 2023). In this context, influencers serve as powerful reference groups and models as in Social Cognitive Theory, shaping the symbolic meaning of wellness and beauty, and positioning nutraceuticals as essential tools for achieving social recognition and personal legitimacy.

Alongside symbolic interactionism, Self-Determination Theory (SDT) provides a framework for understanding the psychological drivers behind this behaviour. SDT posits that individuals are motivated by innate needs for autonomy, competence, and relatedness (CSDT, 2025; Manninen et al., 2022). Moldes (2022) emphasizes that while consumption may appear extrinsically motivated, such as for appearance or social approval, it often satisfies intrinsic psychological needs. For many consumers, the desire for a "glow-up" may stem from an authentic motivation to grow, connect, and feel in control. Vrinten et al. (2022) further support this in their study of nutrition information-seeking behaviour, identifying motivations such as health management, curiosity, emotional regulation, social influence, and identity formation. Nutraceuticals, then, represent both a means of health optimization and an avenue for expressing agency, achieving social belonging, and enhancing self-image.

Ultimately, the glow-up reflects the convergence of cultural, psychological, and commercial forces that make self-enhancement a central feature of modern consumer behaviour. Appearance-based motivations are not merely superficial, they are deeply embedded in the pursuit of confidence, control, and meaning. Within the context of nutraceuticals, this motivation underscores the rising demand for products that promise tangible aesthetic transformation while fulfilling deeper psychological and identity-related goals. As such, the consumption of these products is best understood as part of a broader self-optimisation paradigm in which beauty, wellness, and success are tightly interwoven.

2.4 Cultural and Societal Mechanisms Shaping Endorsement Culture

Broadening the scope of this discussion, it is imperative to acknowledge that consumer behaviour is not shaped solely by individual cognitive processes but is also deeply embedded within broader cultural and societal mechanisms. As digital platforms redefine how individuals consume and interact with information, theories such as the Attention Economy, the Elaboration Likelihood Model, and Social Identity Theory provide critical insights into the external forces driving endorsement culture. These frameworks collectively highlight how consumers navigate an information-saturated environment, process marketing messages, and form identities within digital communities.

2.4.1 Attention Economy & Elaboration Likelihood Model to understand influencer persuasion

The integration of Attention Economy theory and the Elaboration Likelihood Model (ELM) offers a comprehensive framework for understanding the mechanisms behind the increasing role of influencers in consumer decision-making processes.

Consumers today are exposed to an overwhelming volume of content and information stimuli, all competing for limited cognitive resources (Efe Stanley, 2021). In this context, the Attention Economy Theory can help explain how and why certain content captures consumer focus. The concept was first introduced by Herbert A. Simon in the late 1960s who stated, “A wealth of information creates a poverty of attention and a need to allocate that attention efficiently among

the overabundance of information sources that might consume it" (Greenberger, 1971). It addresses the challenge of information overload as an economic issue. With the rise of the internet and the vast availability of content, attention has emerged as a valuable commodity (Carpentier et al., 2023; Mintzer, 2020). The theory has been further established as media and digital technology has advanced, developing an economic model that posits human attention as the key currency, particularly within an ecosystem flooded with communicative inputs (Park et al., 2021). Essentially, the overwhelming abundance of information has paradoxically led to a scarcity of attention, increasing its value to such an extent that it has become a new form of labour and the world's most valuable currency (Steinhorst, 2024). The increasing prevalence of information overload and advertising fatigue facilitates a culture of impulsivity and cursory decision making. As a result, social media influencers have emerged as sources to navigate and mitigate the effects of information overload. Their influence now transcends mere digital popularity, playing a crucial role in shaping consumer preferences, enhancing brand engagement, and driving purchase decisions (Amjad et al., 2024).

ELM (Petty & Cacioppo, 1986) complements this perspective by helping us today explaining why consumers increasingly rely on influencers as cognitive shortcuts for decision-making. ELM describes how people process stimuli and how this processing influences attitude change and behaviour. The model outlines two distinct routes: the central route, characterised by careful consideration and high cognitive effort, and the peripheral route, which involves low cognitive effort and relies on external cues (Nickerson, 2023; Scholarly Community Encyclopedia, 2022). Setianingsih and Dema (2025) note that short-form video commerce, visually engaging, emotionally resonant, and peer-endorsed content is not merely promotional but a strategic driver of consumer behaviour. Their findings underscore the growing influence of digital storytelling and social proof. In the context of influencer marketing, consumers often engage in peripheral processing, relying on simple cues such as attractiveness, familiarity, or perceived trustworthiness to guide decisions. These cues act as heuristics, or mental shortcuts, helping individuals avoid the cognitive burden of analysing product details in depth (Petty & Cacioppo, 1986; Dumper et al., 2019; Kitchen et al., 2014). In TikTok's fast-paced, attention-limited environment, the peripheral route to persuasion prevails.

However, eWOM can prompt deeper cognitive engagement. Setianingsih & Dema (2025) also found that TikTok content influences purchase intentions, even when lacking detailed product information. This highlights a shift toward emotion, visual appeal, and peer endorsement as key persuasive drivers. Farivar et al. (2023) found that consumers are more likely to be persuaded by influencers they perceive as attractive or knowledgeable, especially when processing occurs via the peripheral route. In such cases, these traits serve as simple evaluative cues, often overriding deeper scrutiny of the product or message content. However, the central route is more likely to be engaged when influencers provide detailed product information or personal testimonials that followers process more critically (Erkli, 2022). Ultimately, ELM reveals how and why consumers default to peripheral cues under cognitive strain, making influencers powerful agents of persuasion in the attention economy.

A study by Peng et al. (2021) explores how cognitive overload affects consumer decision-making through neurophysiological measurements, revealing that excessive information impairs effective processing. The study further states that consumers facing high information volumes exhibit reduced attention, greater decision-making difficulty, and lower confidence, as indicated by diminished brain activity in areas related to attention and decision-making. This elucidates the increasing prevalence of peripheral processing. When information is scarce, consumers infer missing attributes to fill knowledge gaps (Gunasti & Ross, 2009). Social media influencers now play a crucial role in this context, as their promotions and endorsements act as cognitive shortcuts that simplify information processing (Nafees et al., 2021). This also aligns with signalling theory, where consumers use signals (influencers) to navigate information asymmetry and make informed decisions (Osburg et al., 2022).

Thus, the convergence of ELM and Attention Economy theory suggests that in a saturated market, the peripheral route becomes more prominent. This is especially the case as consumers, overwhelmed by choices and limited in cognitive resources, are more inclined to base their purchasing decisions on the persuasive cues presented by influencers. This shortcut-driven consumer behaviour, while effective in driving quick decisions, often results in only superficial attitude shifts, underscoring the transient and volatile nature of digital influence.

2.4.2 Social identity theory

Social Identity Theory (SIT; Deci & Ryan, 1985) provides a framework for understanding how societal and cultural mechanisms shape endorsement culture by influencing consumer behaviour through group dynamics, biases, and perceived affiliation. SIT explains how individuals derive part of their identity, including health-related identities, through their membership in social groups, such as digital communities influenced by social media personalities. These communities play a crucial role in shaping consumer behaviour and perceptions.

According to SIT, a continuum exists between personal and social identity, where individuals align with groups that provide emotional and value-based significance (Abrams, 2001). Social groups are categorized into in-groups (groups to which individuals belong) and out-groups (groups to which individuals do not belong). Motivated to maintain a positive self-image, individuals tend to view their in-groups favourably in comparison to out-groups. This process strengthens the individual's sense of identity and belonging.

In the context of influencer marketing, SIT helps explain why consumers align with influencers and form in-groups based on shared values, interests, or lifestyles. Influencers create communities where followers experience a sense of belonging, reinforcing their identity by favourably comparing themselves to out-groups, those who do not follow or engage with the influencer's content or use the same products and share in the same worldview (Harwood, 2020; King, 2003). Social identity, in this context, can act as a heuristic, predisposing followers to favour endorsements from influencers who align with their group identity, often independent of the actual quality of the marketing message (Farivar & Wang, 2022; Oyserman, 2009). Social identity can be defined as a person's sense of who they are based on their group membership. These groups provide a sense of belonging, purpose, self-worth, and identity (McLeod, 2023). The theory outlines three primary processes:

1. Social Categorisation: The act of classifying people into groups (e.g., followers vs. non-followers), which influences how consumers relate to influencers.

2. Social Identification: The process whereby consumers align with influencers' groups, adopting their values and behaviours. This alignment affects trust and engagement.
3. Social Comparison: The tendency for consumers to favour influencers they perceive as part of their group, which enhances brand loyalty and shapes their responses to endorsements.

These processes help explain why consumers can be more receptive to influencer marketing that aligns with their social identity (McLeod, 2023).

A study by Farivar and Wang (2022) underscores the importance of SIT in shaping endorsement culture, finding that social identity has a significant positive impact on followers' purchase intentions when influenced by social media influencers. Furthermore, storytelling enhances this effect, with social identity proving more influential than interest fit and opinion leadership.

Within influencer communities, followers' social identities foster attachment and brand loyalty, which drive behavioural engagement and purchase decisions (Croes & Bartels, 2023). This identification results in in-group favouritism, where followers perceive influencers' recommendations as credible peer endorsements rather than marketing efforts. This dynamic reduces scepticism and amplifies trust in influencer-promoted nutraceutical products (Pan et al., 2024). Thus, SIT emerges as an essential lens for understanding how health identities are constructed and reinforced within digital spaces. Influencer culture significantly shapes perceptions of wellness and consumption patterns, both positively and negatively.

By highlighting the societal and cultural mechanisms underpinning endorsement dynamics, this theory underscores the importance of investigating how influencers shape consumer perceptions of health in the nutraceutical industry. Consumers are more likely to trust and purchase products recommended by influencers they identify with. For example, a fitness influencer's followers may see themselves as part of an exclusive health-conscious community, distinguishing themselves from those who do not prioritize wellness. This in-group favouritism strengthens brand loyalty and enhances the effectiveness of influencer endorsements. Consequently, consumers perceive products endorsed by their in-group as superior, while products or

influencers associated with an out-group may be dismissed or even criticized, further shaping purchasing behaviour.

Thus, SIT serves as a fundamental societal and cultural mechanism shaping endorsement culture, as it underscores how group affiliations within digital community's influence consumer behaviour, trust, and loyalty toward influencer endorsements, particularly in the nutraceutical industry, beyond individual psychological processes.

The integration of theoretical frameworks aims to provide insight into the psychological and societal mechanisms underpinning the effectiveness of influencer marketing. However, it is equally essential to examine the tangible effects of influencer marketing on consumer behaviour and market demand within the nutraceutical industry, which this chapter turns to in the next section.

2.5 Influencer Effects on Consumer Behaviour and Market Demand in the Nutraceutical Industry

Influencers have emerged as pivotal figures in shaping consumer trust and purchase decisions, leveraging their perceived authenticity and relatability to promote products in ways that traditional advertising struggles to achieve (Pilgrim & Bohnet-Joschko, 2019). A survey by Matter (2020) highlighted the growing consumer preference for influencer marketing over traditional brand advertising, particularly following the COVID-19 pandemic. The study, which surveyed over 1,000 U.S. consumers, found that 82% had been influenced by content from influencers during their purchasing journey, whether through researching, considering, or making a purchase. Their 2023 follow-up survey further revealed that consumers are most interested in influencer content related to food and beverage (59%), health and wellness (43%), and beauty and personal care (39%), categories that closely align with the nutraceutical market. These findings underscore how digital influencer culture has fuelled consumer interest in health trends and the broader “wellness” movement, positioning nutraceuticals at the intersection of personal well-being and aspirational living.

The persuasive nature of influencer endorsements is particularly evident in the fitness and wellness sectors, where body image plays a central role in marketing narratives. Pilgrim and Bohnet-Joschko (2019) analysed 1,000 posts from top German-speaking influencers and found that 84% of influencers were female, with a primary focus on fitness, bodybuilding, and strength training. Their study revealed that influencers frequently promoted a standardized body ideal, characterised by low body fat and high muscle definition, framing diet and exercise as controllable pathways to achieving physical perfection. Notably, 71% of posts featured at least one brand endorsement, with dietary supplements emerging as the most commonly advertised products, appearing in 75% of branded content. These findings illustrate how influencers position themselves as quasi-experts, leveraging communication strategies that foster trust and reinforce the idea that dietary supplements serve as convenient solutions to attaining fitness goals.

The dominance of such narratives highlights a broader societal tendency toward instant gratification, where quick-fix solutions are often favoured over sustainable lifestyle changes. Beyond fitness culture, influencers have played a significant role in shifting consumer trust from traditional advertising to peer-driven endorsements, particularly in the health and wellness space. Research indicates that consumers are increasingly influenced by social media personalities when making health-related purchasing decisions (Turner et al., 1979; Celestin & Sujatha, 2024; PV & Sharma, 2025). Campaigns in this sector prioritise authenticity and trust, with influencers required to maintain credibility to sustain audience engagement. Celestin and Sujatha (2024) further assert that influencer-led campaigns not only enhance consumer trust but also increase engagement and brand loyalty, illustrating the growing power of social influence in shaping market demand. The influencer's role as a mediator between expert knowledge and consumer accessibility is particularly significant, as it simplifies complex health information, making it more digestible and actionable for audiences.

The impact of social media influencers on market trends is perhaps best exemplified by the viral surge in berberine sales following its promotion on TikTok as "nature's Ozempic" for weight loss in 2023. By the end of the year, the hashtag #berberine had amassed over 109.5 million views, and Thorne's berberine sales had increased by 165% in Q2 2023 compared to the same

period the previous year (Knight, 2024; Gormley, 2023). This rapid market response demonstrates the power of influencer-driven narratives in shaping consumer demand, particularly in industries where health claims and product efficacy are difficult to verify. The phenomenon also exemplifies the extent to which influencer marketing can generate immediate and widespread consumer interest, bypassing traditional regulatory scrutiny and accelerating product adoption.

The growing prominence of influencer marketing is further evidenced by its expanding industry scale. Currently, TikTok hosts approximately 100,000 influencers, Instagram over 500,000, and YouTube between 2 to 5 million, ranging from micro- to mega-influencers (Hall, 2024; Markerly, 2023; Winter, 2024). However, despite these figures, it is crucial to recognize that influence is not solely a function of reach. Instead, quality and credibility play equally important roles in determining an influencer's market impact. The 2024 Influencer Marketing Benchmark Report, based on responses from over 3,000 marketing agencies and brands, revealed that 85% of respondents consider influencer marketing an effective strategy, with 82% of brands reporting higher-quality leads from influencer campaigns compared to traditional marketing approaches. Celestin and Sujatha (2024) further corroborate this, showing that businesses utilising influencers report a 24% boost in brand credibility and a 37% increase in purchase intent. These findings indicate that influencer marketing has evolved into one of the most dominant and stable industries in the digital landscape, offering a lucrative alternative to conventional advertising.

Despite its effectiveness, influencer marketing in the health and wellness sector raises critical ethical concerns, particularly regarding the commercialization of health advice and the reinforcement of unattainable beauty standards. Denniss et al. (2023) conducted an extensive analysis of 10,964 Instagram posts from 61 Australian nutrition-related influencer accounts, identifying five key themes, two of which, "food and nutrition" and "body goals," were particularly influential. Posts categorized under "food and nutrition" (12,051 hits) frequently marketed dietary supplements by emphasizing their health benefits, often linking them to improved physical appearance through concepts such as "beauty through wellness." Meanwhile, posts under the "body goals" theme (11,401 hits) predominantly focused on body transformations, often equating weight loss and muscle gain with desirable health outcomes. The

study found that engagement levels on these posts were consistently high, illustrating the widespread reach and influence of nutrition-related content on Instagram. However, the prioritization of appearance over holistic health in these posts underscores the potential for misleading or overly simplistic health messaging, reinforcing the need for greater transparency and consumer education in this space.

The increasing reliance on influencer marketing within the nutraceutical industry highlights both its effectiveness and its ethical complexities. While influencers have undeniably transformed consumer engagement and brand strategies, their growing role in health and wellness marketing raises important questions about credibility, regulatory oversight, and consumer well-being. As influencers continue to act as intermediaries between brands and consumers, further research is needed to assess the long-term impact of influencer-led health narratives, particularly in mitigating misinformation and addressing the ethical responsibilities associated with their endorsements.

2.6 Ethical Challenges and Regulatory Concerns

2.6.1 Ethical implications of influencer driven marketing

The convergence of influencer marketing and the nutraceutical industry highlights a significant ethical tension between commercial gain and consumer welfare. Influencer marketing and product endorsements are increasingly obscuring the boundaries between truth and perception in the digital age. In wellness and nutraceutical spaces, influencers are not merely promoting products; they are crafting ideologies that challenge traditional sources of authority, such as science and medicine. This behaviour reflects postmodernist tension, where the established viewpoints of reason, authority, and progress are challenged or rejected, favouring subjective interpretations and the relativism of knowledge (Duignan, 2009). The rise of the 'prosumer', an individual who both consumes and produces a particular commodity, has accelerated this dynamic (Collins Dictionary, 2024). Prosumption refers to the interrelationship between production and consumption, a concept that is prominent in modern capitalist economies, particularly parallel to the rise of digital platforms (Ritzer, 2015).

Influencers embody the characteristics of a 'prosumer,' operating at the intersection of production and consumption. They both consume products and create content that promotes these products, wielding participatory power that allows them to shape public discourse. This dual role conveniently narrows the gap between consumer and influencer status, heightening consumers' susceptibility to their opinions, expertise, and recommendations, underscored by the parasocial interaction theory and trust transfer theory. Baker (2022) effectively illuminates this phenomenon in the prevalence of wellness culture endorsed by alt-influencers. Baker's findings magnify influencer exploitation of social media participatory features to disseminate misinformation and far-right ideologies, seemingly disguising it as 'wellness content'. The study identified three primary tactics employed by influencers in this case: utilising micro-celebrity practices to convey authenticity, adopting the role of persecuted heroes, and presenting their content as a personal journey of self-discovery.

This underscores the pervasiveness of information democratisation, which enables individuals to question expert knowledge in favour of personalised, circumstantial narratives. Maati et al. (2023) presents a critical framework linking digitisation and artificial intelligence to democratic decay. Here, the abundance of contradictory information, decreasing ability to assess truthfulness, and AI-driven algorithmic targeting are recognised as catalysts of informational learned helplessness and selective exposure. The framework identifies information apathy and the acceptance of misinformation as a by-product of this phenomenon. The digital world's fragmented information ecosystem is clearly indicated at this juncture, rationalising the increasing tension between expert knowledge and influencer-driven content that has been observed.

In addition to this, Lynn et al. (2020) investigated the dynamics of healthy diet discourse on Twitter, focusing on identifying the most influential actors and prevalent topics. The study identifies two primary actor categories: those who disseminate messages and those who consume them, with over 80% of Twitter accounts falling into these categories. Notably, the study challenges traditional views, arguing that the healthy diet discourse is not necessarily driven by influencers, but rather "a critical mass of easily influenced individuals." This viewpoint coincides with Maati et al.'s (2023) framework, collectively suggesting a shift from influencer-

led narratives to a position where information reception is determined by consumer susceptibility and the broader dynamics of online communication. The democratisation of information, while ostensibly empowering individuals, also contributes to a critical engagement deficit and an increased acceptance of misinformation. However, this raises a critical inquiry regarding accountability. While influencers and media platforms may play a significant role in disseminating misleading content, the responsibility of consumers in perpetuating these issues cannot be overlooked. The interplay between influencer-driven narratives and consumer susceptibility underscores the need to examine the extent to which consumers contribute to the amplification of misinformation and the erosion of informed decision-making.

Furthermore, the widespread dissemination of unverified health claims on social media has blurred the line between credible expertise and influencer-driven marketing, raising significant concerns about misinformation in the nutraceutical space. A study by Zamil et al. (2022) analysed 100 Instagram posts from March 2021 related to skin, hair, and nail supplements, assessing ingredient transparency, health claims, account verification, and endorsements. Results show that only 4% of posts came from verified accounts, 1% included a Supplement Facts label, 19% provided no ingredient information, and 31% vaguely mentioned vitamins without specifying the type. Influencers appeared in 22% of posts, while just 1% were from certified dermatologists. Similarly, a study by Deakin University's Institute for Physical Activity and Nutrition examined nearly 700 Australian Instagram posts with nutrition information from influencers and brands with over 100,000 followers. It found that 34.8% of posts were of poor quality, 44.7% contained inaccurate information, and lower-quality posts garnered more engagement (Denniss et al., 2024). A quantitative content analysis by Nguyen et al. (2022, p. 375) revealed that, from their sample of naturopathic influencers with over 30,000, nearly half of the health-related claims made were not supported by evidence and only 10% of the claims with available evidence were based on high-quality sources. Moreover, posts with supporting evidence received fewer likes and comments. This proliferation of misinformation further substantiates the prevalence of influencer endorsement exploitation pointed out by Baker (2022).

Essentially, influencer marketing and endorsements in the nutraceutical space have given rise to numerous multifaceted obstacles. The deceptive nature of marketing for unregulated products

with unfounded benefits promoted, the favouring of subjective interpretations over expert knowledge, and the exploitation of endorsements to solidify online authority and shape favourable audience perceptions have complicated consumers' ability to distinguish credible advice from dubious claims. This environment has also created fertile ground for consumers to enable these practices due to the lack of logical alternatives.

2.6.2 Regulatory concerns & ingredient deceptions; Implications for influencer endorsements

Nutraceuticals are widely perceived as safe due to their association with "natural" ingredients; however, the industry faces significant regulatory challenges, as there is no global consensus on regulatory processes (Komala et al., 2023). Alarmingly, these products remain largely unregulated, lacking both stringent legal oversight and standardized definitions (Blaze, 2021; Orhan et al., 2016). Despite their global presence, the term "nutraceutical" is a marketing construct rather than a formally recognized regulatory category, and many health claims associated with these products remain scientifically unverified (Santini et al., 2018). The absence of rigorous regulations has facilitated unethical marketing practices, questionable manufacturing processes, and misleading claims. Research has identified significant concerns, including the use of harmful solvents, contaminants, and toxic compounds in production, as well as potential adverse drug interactions (Blaze, 2021). Additionally, regulatory inconsistencies across jurisdictions enable these products to be sold without proper safety verification, incentivizing manufacturers to bypass ethical and safety standards (Orhan et al., 2016).

The limited availability of rigorous studies on the mechanisms of action and bioavailability of nutraceuticals further exacerbates concerns regarding their safety. Contamination risks from substances such as heavy metals, pesticides, and toxic plant components pose significant threats to consumer health. Moreover, potential adverse interactions between nutraceuticals and medications remain underreported, as consumers often fail to disclose their use of these products to healthcare providers (AlAli et al., 2021; Chopra et al., 2022).

While nutraceuticals are marketed as beneficial to consumer health and well-being, the lack of transparency and regulatory accountability extends to influencer endorsements. Many influencers, despite being aware of these deceptive practices, continue to promote such products, often prioritizing financial incentives over consumer safety. Although legal actions have been taken against influencers for exaggerated claims and misleading testimonials, such cases are frequently underreported in mainstream media (Angotti & Fields, 2023). These concerns highlight the complex ethical landscape of influencer endorsements within the nutraceutical sector.

Research on the deceptions and risks associated with influencer marketing in the nutraceutical sector remains limited, primarily due to the relatively recent emergence of this phenomenon. However, Ekinci et al. (2025) emphasize the growing concerns surrounding social media influencers and their potential negative impact on consumers. Their comprehensive analysis of the "dark side" of influencer marketing identifies six key themes: harmful product promotion, misinformation dissemination, unrealistic beauty standards, comparison culture, deceptive consumption practices, and privacy concerns. Of relevance to the nutraceutical industry and its regulatory challenges is the issue of harmful product promotion. The authors note that influencers frequently exploit their followers' trust to promote potentially harmful products, such as weight-loss supplements and detox teas, without fully disclosing associated risks or side effects. This aligns with broader concerns regarding ingredient deceptions in the nutraceutical industry and the role of influencer endorsements in perpetuating misinformation. The study further underscores the need for heightened regulatory scrutiny, as many influencers fail to properly disclose sponsored content or adhere to ethical marketing practices.

The lack of regulatory clarity, coupled with the prevalence of unverified health claims, complicates consumers' ability to discern credible information. Consequently, the reliability of influencer endorsements may be increasingly questioned, particularly when associated with products that pose health risks or lack rigorous scientific validation. The failure to establish clear standards for the promotion of nutraceuticals not only affects consumer behaviour but also undermines the credibility of influencer marketing within the sector. However, in an increasingly complex, consumption-driven digital landscape where influencer culture thrives on aspirational

marketing, it remains unclear whether consumer awareness of potentially misleading practices actually changes behaviour. This literature review raises a critical question: Do consumers knowingly engage with content they recognise as manipulative, allowing aspiration, social pressures, or personal desires to outweigh their critical judgement? The very nature of digital marketing, saturated with persuasive tactics and curated authenticity, suggests that ethical concerns may not necessarily translate into behavioural change. This literature review, therefore, questions whether heightened awareness of regulatory shortcomings and ingredient deceptions would truly shift consumer trust in influencers or whether such revelations are dismissed as an accepted reality of the digital marketplace.

2.7 Key findings, research gaps, and significance of research

A synthesis of the current literature reveals that influencer endorsements exert a substantial impact on consumer attitudes and purchasing behaviours within the nutraceutical industry, primarily through mechanisms rooted in social cognitive theory and parasocial interaction. Influencers, by serving as relatable role models and leveraging observational learning, enhance consumer self-efficacy and shape positive outcome expectations, thereby motivating product adoption and normalising nutraceutical use. The perceived authenticity and intimacy fostered by parasocial relationships further amplify the persuasive effect of influencer endorsements, purported to surpass the impact of traditional brand advertising in terms of engagement and trust.

While the literature review underscores the prominence and influence of parasocial interactions and relationships in shaping consumer engagement, a critical observation emerges: although parasocial bonds serve to explain the effectiveness of influencer endorsements, their explanatory power appears increasingly limited in the contemporary digital landscape, one defined more by the currency of attention than by information itself as highlighted by the concept of the attention economy. In an era marked by rapid content consumption and social media, induced information overload, this thesis contends that parasocial relationships, while still relevant, are no longer the primary drivers of endorsement efficacy. Instead, the success of influencer content is now more heavily influenced by the format, aesthetic appeal, presentation style, and overall sensory stimulation of the stimuli. As consumers become increasingly prone to boredom, and rapid

disengagement, reflecting a culture of disposability, the visual and performative attributes of influencer content take precedence over the depth of perceived emotional connection.

In this environment for nutraceutical marketing, significant research gaps persist. Notably, there is limited empirical evidence directly comparing the effectiveness of influencer endorsements versus conventional brand advertising within the nutraceutical sector, especially in the context of rapidly evolving digital consumption patterns. Furthermore, the literature highlights a critical need to examine how consumer awareness of regulatory lapses and potential for deceptive marketing in the nutraceutical industry might alter perceptions of influencer credibility and endorsement efficacy. This gap is particularly salient given the ethical and regulatory challenges that can undermine consumer trust and informed decision-making. Addressing these gaps is of considerable significance, as it will not only advance theoretical understanding of influencer marketing dynamics in health-related industries but also inform regulatory policy and consumer protection strategies. This literature collectively underpins the rationale for the present research and leads directly to the development of proposed hypotheses to empirically test the relative influence of influencer endorsements, the moderating role of regulatory awareness, and the comparative effectiveness of influencer versus brand-driven marketing approaches within the nutraceutical market

Another key insight emerging from the literature review is the concept of the "glow up" and its embodiment of the broader pursuit of continuous self-enhancement. This pursuit plays a significant role in shaping consumer behaviour within the nutraceutical and influencer endorsement landscape. While existing research acknowledges physical enhancement as a primary motivator for consumption, the behavioural patterns, psychological cycles, and broader implications of this self-optimisation culture remain notably underexplored in the current literature.

Another significant theme emerging from the literature review in this chapter is the role of parasocial relationships and parasocial interactions. While the review highlights substantial evidence supporting the persuasive power of these majorily one-sided relationships, their influence is also implicitly challenged when viewed through the lenses of the Attention Economy

and the Elaboration Likelihood Model. These frameworks suggest that attention has become an increasingly scarce and valuable resource, arguably a new form of currency in contemporary marketing environments. Within fast-paced platforms such as TikTok and Instagram, where users are subjected to continuous scrolling, fleeting content, and an overwhelming volume of marketing stimuli, the unique effectiveness of influencer marketing becomes more complex. This raises an important gap in the literature: Is it truly the depth of parasocial relationships that drives consumer responsiveness to influencer content, or is it the volume, visual appeal, and attention-capturing design of the content itself? Further research is needed to disentangle the relational versus stimulus-based drivers of influencer marketing effectiveness.

These insights collectively underpin the rationale for the present research and inform the development of a targeted set of hypotheses, detailed in the next section.

2.8 Hypotheses

Drawing from the reviewed literature, this thesis aims to examine how influencer advertising compares to traditional brand advertising in influencing consumer attitudes and behaviours, particularly within a digitally saturated and ethically ambiguous nutraceutical market. It further seeks to explore how factors such as regulatory awareness and appearance-based consumption motivations shape these effects.

This thesis formally proposes the following hypotheses for exploration in an empirical study.

H1: *Influencer advertising (vs. branded advertising) affects nutraceutical product evaluations.*

> ***H1a:*** *Influencer advertising (vs. branded advertising) positively influences purchase intent.*
>
> ***H1b:*** *Influencer advertising (vs. branded advertising) leads to higher perceptions of message source authenticity for nutraceutical products.*

H2: *Consumer awareness of the lack of regulation in the nutraceutical industry moderates the impact of influencer (vs. brand) advertising on purchase intent, such that the effect of influencer advertising is weaker among consumers with higher awareness.*

H3: *Appearance-based consumption motivations positively influence product evaluations of nutraceutical products, such that individuals with higher appearance-based motivation evaluate these products more favourably.*

> ***H3a:*** *The positive effect of appearance-based consumption motivation on product evaluations is moderated by regulatory context, such that the effect is attenuated when regulatory information is present.*

H4: *Appearance-based consumption motivations moderate the relationship between source characteristics and purchase intent, such that this relationship is stronger when appearance motives are higher.*

> ***H4a:*** *Appearance-based consumption motivations moderate the relationship between source characteristics and purchase intent, such that this relationship is stronger when appearance motives are higher.*

Collectively, these hypotheses address the interplay between influencer marketing, regulatory awareness, and individual motivations, offering a comprehensive framework for examining consumer responses within the nutraceutical industry. The following chapters discuss the method and approach to analyse and test these hypotheses via an online experiment.

Chapter three: Research design / Methods / Methodology

3.1 Introduction

This chapter outlines the methodological approach adopted to investigate the impact of influencer endorsements on consumer behaviour within the nutraceutical sector. The primary aim of this research is to empirically examine whether influencer marketing shapes consumer attitudes, purchase intentions, and product evaluations differently from brand advertising, and to assess how awareness of regulatory issues in the nutraceutical industry might moderate these effects. Specifically, the study aligns with and aims to addresses the four key research questions proposed for this thesis:

1. *How do influencer endorsements impact consumer attitudes toward nutraceutical products compared to traditional branded advertising?*
2. *To what extent do influencer endorsements influence consumers' purchase intentions for nutraceutical products compared to branded advertising?*
3. *Does consumer awareness of lack of regulatory oversight in the nutraceutical industry weaken the persuasive impact of influencer endorsements?*
4. *Does a focus on physical appearance shape consumer responses to influencer and branded nutraceutical advertising?*

To ensure methodological alignment with these aims, this chapter first details the philosophical foundations guiding the research, including the ontological and epistemological stances adopted. Following this, the rationale for the chosen quantitative experimental design is presented, describing how this approach enables the examination of causal relationships between influencer marketing and consumer behaviour and its fit with the research objectives. The chapter further explains the specific experimental procedures, including participant recruitment, data collection methods, and a brief overview of data analysis methods. Ethical considerations and participant protection measures are also discussed to demonstrate adherence to research integrity and institutional guidelines.

This structure provides a clear roadmap for understanding how the methodological decisions made in this research are directly linked to the overarching aims and research questions, ensuring coherence and transparency throughout the investigative process.

3.2 Research Philosophy

3.2.1 Realist Ontology

Ontology refers to the study of existence and reality, focusing on what exists, the structures of reality, and what is possible to know about the world around us (Saadi, 2014). In this research, I adopt a realist ontological stance which holds that reality is objective and exists independently of human perception, albeit imperfectly comprehensible (Ylönen & Aven, 2023).The realist ontology is based on the view that knowledge systems should reflect the structure of the real world as revealed by scientific inquiry. This approach ensures that ontologies remain consistent and evolve in line with empirical advancements (Smith & Ceusters, 2010). This stance aligns with the scope of this research and its objectives, with a perspective that consumer behaviour, particularly in response to influencer marketing, exhibits observable patterns and trends that exist independently of the individual and can be empirically measured.

By adopting a realist perspective, this research does not treat participants' perceptions as realities in themselves, but as insights into broader behavioural patterns shaped by external influences. This allows the research to identify consistent, measurable responses to influencer marketing that reflect an underlying social reality (Healy & Perry, 2000). Furthermore, as a researcher employing a realist ontology, my study's objectives aim to understand how external factors, such as social, cultural or marketing influences, shape individual experiences. My objectives also aim to analyse findings through a systematic and measurable lens, emphasising observable patterns and data-driven insights (Naeem et al., 2023). Essentially, I will examine the impact of influencer endorsements on social media as a societal influence on consumer behaviour at the individual level.

Thus, I adopt a realist ontology in this thesis to uncover generalisable trends in consumer behaviour, treat perceptions as reflections of underlying patterns, and identify causal links

between influencer marketing and consumer actions, based on the assumption of an external reality driving these behaviours.

3.2.2 Objectivist Epistemology

Epistemology in research refers to the study of knowledge, its nature, sources, limits, and validity. It explores how we know what we know and provides a philosophical foundation to determine what counts as credible knowledge in a given field (Sol & Heng, 2022; Al-Ababneh, 2020). As a researcher, I adopt an objectivist epistemology, recognising that knowledge is derived from objective reality through rational inquiry, definitive facts, theories, and empirical observation (Bates, 2015). Objectivism aligns with and is underpinned by a realist ontology, viewing social structures as stable and enduring, much like natural phenomena. Epistemologically, objectivism aims to uncover universal truths through measurable, observable facts, allowing for generalisations (Saunders et al., 2009).

By adopting this stance, this research and its objectives strives for value-free inquiry and to remain independent of personal biases and subjective interpretations. Furthermore, objectivism cohesively aligns with this research's aim, not to reform industry practices but rather to gain a deeper understanding of the key elements that shape consumer behaviour (Passalacqua & Pianzola, 2016). A commitment to objective realities in research ensures a focus on deriving practical insights through methodologically sound inquiry.

3.3 Research design

A research design is one of the most critical components of any study, providing a structured blueprint that guides the research process. It outlines how data will be collected, from whom, and how it will be measured and analysed to address research questions effectively (Khanday & Khanam, 2019). By integrating appropriate methods and techniques, a sound research design ensures the validity, reliability, and credibility of findings, serving as a strategic framework that links research questions to the practical execution of the study (Jongbo, 2014). Failure to plan the research design before data collection can result in weak, unconvincing conclusions that do not meet research objectives (Asenahabi, 2019). Fundamentally, the key purpose is to translate

research problems into analysable data, underscoring the importance of selecting an appropriate research design. Through thorough analysis of the research problems, research questions, theoretical frameworks, and review of relevant literature, a quantitative experimental design emerged as most appropriate for this thesis.

Quantitative research design involves the use of empirical observations and measurements that yield numerical data to answer specific research questions. These questions are then addressed using statistical analysis, through data collection methods such as surveys, experiments, or observations (Streefkerk, 2023). This approach is analytical and is based on the postpositivist worldview, which assumes an objective reality independent of the observer, reflecting the philosophical positioning of this study, which adopts a realist ontology and an objectivist epistemology (Asenahabi, 2019; Apuke, 2017).

Quantitative research is appropriate for this study as it facilitates the testing of hypotheses, the development of predictive models, and, most importantly, the establishment of causal relationships between variables (Bhandari, 2023; Ghanad, 2023; Khan et al., 20223). Barroga and Matanguihan (2022) further note that quantitative research questions are formulated at the beginning of a study and focus on examining relationships between variables. They are specific to the target population, variables, and research design. These questions may be descriptive (exploring population characteristics), comparative (examining group differences), or relational (investigating associations or trends among variables). Given that the research questions and objectives are inherently causal in nature, this methodological approach aligns well with the aims of the study. Specifically, this research seeks to examine the causal impact of influencer endorsements on consumer behaviour within the context of nutraceutical products. Alternative quantitative approaches exist, such as econometric modelling of live-stream data, which analyses patterns in large observational datasets, or machine learning techniques, which can predict consumer responses based on complex datasets (Huang & Morozov, 2025; Tian et al., 2024). While these methods are useful for detecting trends or predicting outcomes, they are limited in establishing direct causal effects, as they rely on observational or pattern-based data rather than controlled manipulation. In contrast, an experimental design**,** as chosen for this study, allows for direct control of independent variables, providing stronger evidence for causal relationships.

To effectively investigate these cause-and-effect relationships, an experimental research design was adopted. Experimental research is a structured methodology that prioritises objectivity and control, allowing for a rigorous evaluation of hypotheses. It involves the manipulation of one or more independent variables (IV) to observe their effect on dependent variables (DV) while minimising extraneous influences (Asenahabi, 2019; McLeod, 2023; Bell, 2009). In this research, the identified independent variables are advertising type (influencer vs. brand) and regulatory prime (lack of nutraceutical regulations vs. control), while the dependent variables include consumer attitudes, perceptions, and willingness to purchase the nutraceutical.

More specifically, this research will utilise a survey-based experimental approach, employing a between-subjects design framework with random assignment to evaluate the differential effects of influencer endorsements. A between-subjects design, or independent groups design, allocates participants to distinct conditions, enabling comparisons across groups exposed to varying stimuli (Simkus, 2023). This structure is particularly suited to testing how different message sources (influencer vs. brand) and levels of consumer awareness influence attitudes and behaviours.

Random assignment to condition, an integral feature of experimental research, ensures each participant has an equal probability of being placed in any condition, thereby facilitating balanced group composition and supporting the internal validity of the findings (Bianchi, 2022). This method enhances comparability and minimises systematic bias, though it does not entirely eliminate selection bias, underscoring the importance of sound participant recruitment strategies.

Additionally, integrating a between-subjects design with random assignment allows for the controlled manipulation of independent variables, particularly valuable for further establishing causal relationships. Manipulation and control represent foundational elements of experimental research. Manipulation refers to deliberately altering a variable, while control involves limiting extraneous influences that may affect outcomes and the integrity of the findings (U.S. Department of Health & Human Services, 2024). This design enables attribution of observed effects on dependent variables to the experimental manipulations, thereby enhancing the study's

internal validity. Furthermore, the rigorous control and standardisation afforded by this approach are particularly appropriate for testing complex, multivariate hypotheses involving both main and interaction effects, ensuring a high degree of objectivity, reproducibility, and methodological robustness (Hox & Boeije, 2005; Lim, 2024; Ruble, 2017). In essence, this methodological structure provides a robust foundation for isolating the effects of influencer endorsements within the broader context of consumer decision-making.

3.3.1 Ethical considerations

This research, guided by Auckland University of Technology Ethics Committee (AUTEC) principles, ensures participant confidentiality, informed consent, voluntary participation, and protection from harm or discomfort. Privacy and data security are critical, especially when analysing online interactions and health-related content. In my consent and information documents before participants proceeded with the study, I acknowledged participant vulnerabilities, remained neutral, and avoided promoting harmful health narratives. For example, when presenting survey questions about nutraceutical use, I carefully worded items to avoid implying that certain health behaviours were necessary or superior. I maintained neutral language, did not suggest any product was better than another, and ensured that participants could withdraw at any time, thereby acknowledging their vulnerabilities and avoiding the promotion of potentially harmful health narratives. Ethical use of publicly shared data, respect for copyright, and non-intrusive observation of online communities were also essential. Transparency about potential conflicts of interest, particularly with influencers or nutraceutical companies, was presented in the information sheet necessary to uphold research integrity. Accordingly, ethical approval for this research was sought and granted by AUTEC, as shown in Appendix A.

3.3.2 Participants

For this research, participants were recruited through an online research panel, Connect Cloud Research, and were selected based on general inclusion and exclusion criteria. Eligible participants were Connect Cloud panel members aged between 18 and 65.

This research did not apply narrow inclusion or exclusion criteria to allow for a diverse and representative sample reflective of the broad demographic exposed to influencer marketing in the nutraceutical sector. A total of 400 responses were initially collected. After removing 87 who either (1)failed the embedded attention check or (2) had incomplete responses to ensure quality control for the study's participants, the final sample consisted of 313 valid participants.

3.3.3 Participant Demographics

A total of 313 participants took part in this study. The sample comprised 143 females (45.7%), 166 males (53%), with 4 identifying as non-binary or preferring not to disclose (1.3%). Participants ranged in age from 18 to 65 years, with a mean age of 38.3 years (SD = 10.45).

3.4 Data collection

Data for this study were collected via an online survey hosted on Qualtrics and distributed through Connect Cloud Research, a professional online research panel provider. Participant recruitment occurred in May 2025. The survey followed a fixed sequence: informed consent, exposure to manipulation 1 (article: regulatory information or control), manipulation check, exposure to manipulation 2 (video: influencer or brand advertisement for a nutraceutical), followed by the dependent variable items and demographic questions.

For this data collection procedure, participants were presented with an information sheet outlining the study's purpose, procedures, and ethical considerations. Participation was entirely voluntary, and informed consent was obtained electronically by asking participants to select either "Agree" or "Do Not Agree" before proceeding. As a methodological note, detailed disclosure of the survey's broader purpose and all measured variables was intentionally withheld to reduce the risk of demand characteristics. Participants were instead informed of the general nature of the study and the industry being examined. This form of incomplete disclosure is accepted practice in minimal risk research where full transparency could compromise the validity of measured outcomes (University of Nevada, 2024). Importantly, no harm was posed to participants, and the study adhered to ethical standards governing the use of incomplete disclosure in research.

Following this, a 2 (regulatory information: present vs. absent) × 2 (message source: influencer vs. brand) between-subjects experimental design was then integrated to test the proposed hypotheses. Participants were randomly assigned to one of four experimental conditions using Qualtrics' built-in randomisation function. Table 2 below shows the 2 × 2 between-subjects experimental design crossing message source (influencer vs. brand) and regulatory information (present vs. absent).

Table 2: *2 x 2 Experimental Design*

Message Source	**Regulatory Info Present**	**Regulatory info Absent**
Brand	Condition 1: Brand + Regulatory Info	Condition 2: Brand + No Regulatory Info
Influencer	Condition 3: Influencer + Regulatory Info	Condition 4: Influencer + No Regulatory Info

In the first stage, participants viewed a stimulus article simulating either regulatory exposure or a neutral control (see Figure 1). The regulatory condition featured a news-style article detailing the lack of regulation standards within the nutraceutical industry, while the control condition presented an unrelated, neutral article about weather patterns.

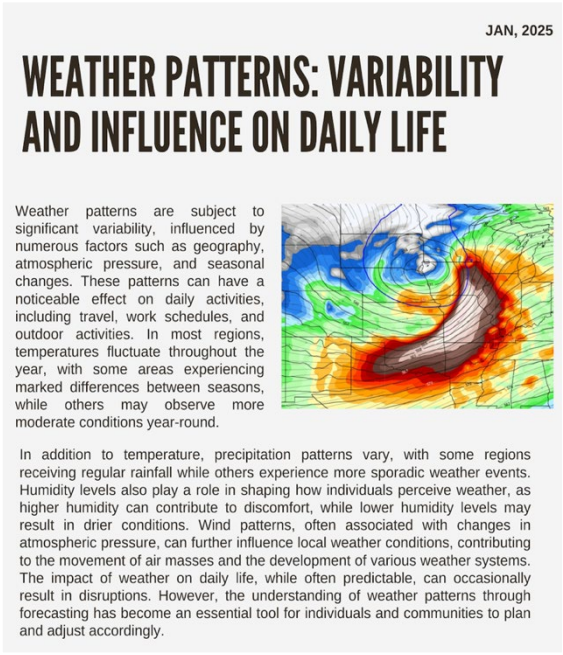
Figure 1: *Article stimuli in regulatory vs control condition*

JAN, 2025

NUTRACEUTICALS: UNDERREGULATED, UNKNOWN AND MAYBE UNSAFE

Unlike prescription drugs and over the counter medications, nutraceuticals are not approved by the Food and Drug Administration (FDA) for safety and efficacy. While that puts limits on how oral vitamins, minerals and herbals can be marketed, almost all still claim to have beneficial and healthy effects, hence that curious disclaimer on their packaging: "These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any diseases."

Researchers have suggested that consumers should critically assess the dietary supplements they consume, scrutinising marketing claims and manufacturing processes, as these products often lack stringent regulatory oversight. The May issue of AMA Journal of Ethics highlights the deceptive nature of the supplement industry, emphasising the need for both consumers and physicians to investigate potential risks and question their assumptions about these underregulated products and their role in health and wellness decisions



JAN, 2025

WEATHER PATTERNS: VARIABILITY AND INFLUENCE ON DAILY LIFE

Weather patterns are subject to significant variability, influenced by numerous factors such as geography, atmospheric pressure, and seasonal changes. These patterns can have a noticeable effect on daily activities, including travel, work schedules, and outdoor activities. In most regions, temperatures fluctuate throughout the year, with some areas experiencing marked differences between seasons, while others may observe more moderate conditions year-round.

In addition to temperature, precipitation patterns vary, with some regions receiving regular rainfall while others experience more sporadic weather events. Humidity levels also play a role in shaping how individuals perceive weather, as higher humidity can contribute to discomfort, while lower humidity levels may result in drier conditions. Wind patterns, often associated with changes in atmospheric pressure, can further influence local weather conditions, contributing to the movement of air masses and the development of various weather systems. The impact of weather on daily life, while often predictable, can occasionally result in disruptions. However, the understanding of weather patterns through forecasting has become an essential tool for individuals and communities to plan and adjust accordingly.

To verify the effectiveness of this manipulation, a manipulation check followed the article exposure, in which participants were required to briefly describe the article content in their own words using an open-ended text box.

Of the 313 participants, 153 were randomly assigned to the control condition, while 160 were randomly allocated to the regulatory condition. Participants in the regulatory condition were instructed to read the post shown in Figure 1 concerning the lack of regulations and potential for deceptive marketing practices related to nutraceuticals. They were then asked to provide a summary of the content in an open-ended response box. The average word count for these responses was 21 words, ranging from 1 to 133 words. All responses referenced the absence of regulatory oversight surrounding nutraceuticals, indicating that the manipulation was effective.

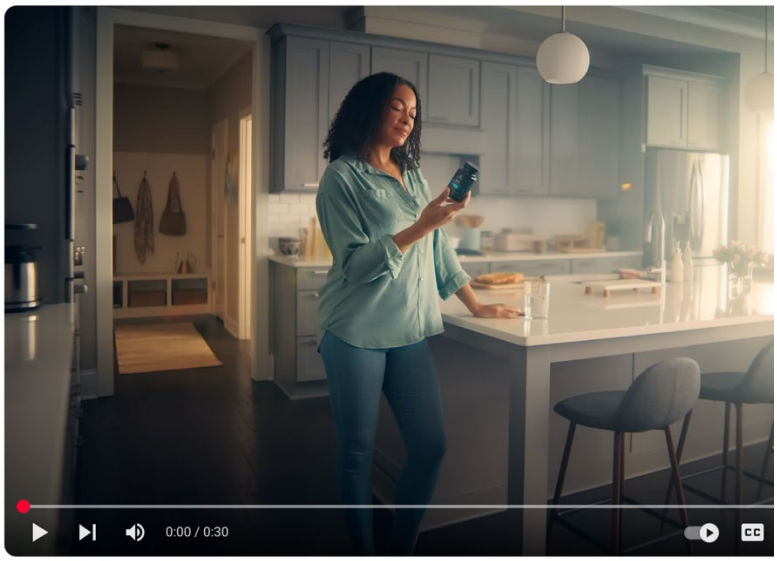
Participants in the control condition were instructed to read a neutral post about weather patterns, as shown in Figure 1, and subsequently provide a short-written summary of the content. Responses in this condition averaged 16 words, with a range of 1 to 83 words. All participants

mentioned weather, climate variability, or environmental conditions in some form, further confirming the effectiveness of the manipulation.

While the average word count was slightly higher in the regulatory condition, both groups provided sufficiently detailed responses to indicate effective engagement with the respective stimuli. These findings demonstrate that both experimental conditions successfully engaged participants with the intended topics, supporting the validity of the experimental manipulations.

In the second stage, participants were randomly assigned to view either an influencer-endorsed promotional video or a brand-generated advertisement (see Figure 2).

Figure 2: *Brand vs influencer advertisement stimuli for message source condition*



Both videos were comparable in length, with the brand video lasting 31 seconds and the influencer video lasting 34 seconds. They promoted the same product to ensure content comparability across conditions. The product featured was SBO Probiotics Ultimate by the brand Ancient Nutrition, a nutraceutical supplement claiming to support digestive and immune health, relieve constipation, gas, and bloating, promote gut microflora balance, and reduce inflammation. It was chosen for its broad appeal across age groups and genders. This

manipulation was designed to examine whether influencer endorsements have a stronger effect on consumer attitudes and purchase intentions than traditional brand advertising.

A total of 145 participants were in the influencer group and 168 participants were in the brand group. To assess the effectiveness of both the influencer and brand condition manipulation, participants were asked to identify the name of the brand and the product featured in the advertisement.

Out of the total 145 responses in the influencer condition, the majority correctly identified the product category as some form of probiotic or digestive health supplement. Participants used descriptors such as "probiotic," "digestive supplement," "gut health supplement," or "nutritional supplement," with over 140 responses indicating some level of recognition regarding the type of product being endorsed. However, brand recall was notably weaker in this condition. Only around 40–50 participants accurately mentioned "Ancient Nutrition" or a close variant, while many either could not recall the brand, provided vague names (e.g., "Ancient Heritage," "ancient," "SBO Probiotic," "Optimum Energy"), or stated they could not hear or comprehend the influencer due to factors such as fast speech, unclear audio, or distraction. A significant number of participants explicitly indicated they did not remember the brand name or struggled to read it on the bottle. These responses suggest that while product category recognition remained high, the influencer manipulation was less effective at conveying the brand identity compared to the brand condition. Upon reflection, this result shows that there was a need to pre-test the influencer manipulation, which is noted as limitation at the close of this thesis.

Of the 168 responses collected in the brand condition, the majority demonstrated a clear understanding of the product being promoted. Over 150 participants correctly identified the product as a probiotic supplement, using terms such as "probiotic," "probiotic pill," "gut health," or "dietary supplement," indicating strong recall of the product category. In terms of brand recognition, a majority of participants explicitly mentioned "Ancient Nutrition" or a close variant (e.g., "ancient nutrition," "Ancient," or "Ancient Civilization SBO Probiotics"). Several others provided vague references such as "ancient something," "ancient supplements," or "ancient probiotics," suggesting partial recognition. Overall, these findings suggest that the manipulation

was largely effective in conveying both the product type and the brand, with especially strong recall observed for the probiotic product.

After exposure to both manipulations, participants then completed a series of Likert-scales measuring key dependent variables, including consumer attitudes, purchase intention, and perceptions of the product and message source. While multiple constructs in this study were measured using Likert-type scales, only three were adapted from pre-existing validated instruments. This selective adaptation was based on the availability and relevance of established measures related to this research, specifically those that have been extensively studied and operationalised in prior research. In contrast, other measures, including attitudes and perceptions of the influencer and brand video characteristics, were context-specific and designed to capture participants' general evaluations of the experimental stimuli. These constructs, including source likeability, product evaluations, purchase intentions, and likelihood to purchase, were developed based on information drawn from the literature review and in accordance with common practice in advertising and media research, where context-driven and perceptual scales are often created to ensure ecological validity and relevance to the stimuli.

Table 3 below displays the scales used in the survey, the items measured within each scale, and their reliability analysis (Cronbach's Alpha).

Table 3: *Scale and scale items*

Scale	**Items**	**Number of items**	**Cronbach's Alpha**
Attitude toward the product	*1. I am interested in this product* *2. This product seems beneficial* *3. I have a favourable opinion of this product* *4. This product seems like it would improve my health* *5. This product seems effective* Rated where "1" = "strongly disagree" to "5" = "strongly agree"	5	.96
Authenticity	*1. The product information presented felt more like a friendly recommendation than a sales pitch* *2. I felt a personal connection to the ad presented.* *3. I felt like the presented product benefits were genuine.*	4	.9

	4. The product information and nature of the ad felt transparent and unbiased Adapted from Lee & Easten, 2021. Rated where "1" = "Strongly disagree" to "5" = "Strongly Agree"		
Purchase intentions	*1. I would consider purchasing this product if I were looking for a health supplement* *2. I am likely to purchase this product in the future* *3. I would recommend this product to a friend* *4. I am willing to try this product if given the opportunity* Adapted from Spears & Singh, 2004. Rated where "1" = "Strongly disagree" to "5" = "Strongly Agree"	4	.94
Source characteristics	*1. Attractive* *2. Trustworthy* *3. Likeable* *4. Desirable* Rated where "1" = "Not at all" to "5" = "Very much so"	4	.89
Appearance consumption motivation	*1. To help me look younger* *2. To develop muscles* *3. To improve my appearance* *4. To get stronger* *5. To feel more healthy* *6. To help control my weight* *7. To have a good body* *8. To increase my endurance* *9. To look more attractive* Adapted from Markland & Ingledew, 1997. Rated where "1" = "Not at all true for me" to "6" = "Very true for me"	9	.93
Appearance comparison motivation	*1. When I watch shows, I compare my overall appearance to the appearance of the actors/actresses.* *2. When I watch a movie, I compare my overall appearance to the appearance of the actors/actresses.* *3. When I see an ad, I compare my overall appearance to the appearance of the models in the ad.* *4. When I'm on social media, I compare my overall appearance to the overall appearance of others.*	8	.97

	5. When I'm out in public, I compare my overall appearance to the appearance of others. *6. When I watch shows, I compare my weight/shape to the weight/shape of the actors/actresses.* *7. When I see a model or influencer, I compare my weight/shape to his/her weight/shape.* *8. When I see an ad, I compare my weight/shape to the weight/shape of the models in the ad.* Adapted from Schaefer & Thompson, 2018. Rated where "1" = "Strongly disagree" to "5" = "Strongly Agree"		

The first scale used in the survey was developed to assess participants' general attitudes toward the product after viewing the advertisement. Here, a custom scale was developed as existing instruments were either too specific to certain product categories or not suitably adaptable to the context of this study. Formulated based on conceptual understanding of attitude, items were generated to reflect positive or negative consumer orientations toward the product in a general sense. This scale consisted of 5 items rated on a 5-point Likert scale, ranging from 1 ("Strongly Agree") to 5 ("Strongly Disagree"), with higher scores indicating a more favourable attitude toward the product. Internal consistency was satisfactory (Cronbach's $\alpha = .96$), supporting its use in the present analysis.

The scale items used to measure perceived authenticity in this study were adapted from the Perceived Authenticity of Social Media Influencers (PASMI) scale developed and validated by Lee and Easten (2021). While the original PASMI framework conceptualizes influencer authenticity as a multidimensional construct, encompassing sincerity, truthful endorsements, visibility, expertise, and uniqueness, this study selectively incorporates and rephrases elements most relevant to advertising context and message perception. Specifically, the items reflect core dimensions such as sincerity (e.g., "The product information presented felt more like a friendly recommendation than a sales pitch"), truthful endorsements (e.g., "I felt like the presented product benefits were genuine"), and transparency (e.g., "The product information and nature of the ad felt transparent and unbiased"). These adaptations shift the focus from the influencer's overall persona to the perceived authenticity of the advertisement content itself, while preserving

the theoretical underpinnings of honesty, relatability, and credibility. Furthermore, the response format was modified to a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) to ensure clarity and ease of interpretation for participants in this context. The same scale, with identical items, was also used to evaluate the perceived authenticity of the brand advertisement; however, it was flipped to reflect the source of the message (influencer vs. brand) to enable direct comparison between the two conditions.

The purchase intention scale used in this study is adapted from Spears and Singh (2004), who developed and validated a robust measure specifically designed to capture consumers' likelihood of purchasing a brand. Their purchase intention scale consists of multiple items framed on a seven-point Likert scale, assessing constructs such as likelihood, probability, and willingness to purchase. The scale has demonstrated strong psychometric properties, including reliability as well as construct and discriminant validity across diverse product and branding contexts. This study modifies the purchase intention scale to fit the context of influencer-endorsed nutraceutical products. Specifically, the term "brand" was replaced with product-specific language relevant to health supplements. As shown in Table 3, the adapted scale includes four items: (1) *I would consider purchasing this product if I were looking for a health supplement*; (2) *I am likely to purchase this product in the future*; (3) *I would recommend this product to a friend*; and (4) *I am willing to try this product if given the opportunity*. Each item is rated on a five-point Likert scale ranging from 1 = "Strongly disagree" to 5 = "Strongly agree." These modifications preserve the scale's original intent while tailoring it to the specific product category and consumer behaviour context under investigation. The same adapted scale was used to assess purchase intention in the brand advertisement condition, with the item framing adjusted to reflect the source of endorsement (influencer vs. brand), allowing for direct comparison across experimental groups.

To assess perceptions of the influencer as a source of persuasion, a four-item cource characteristics scale was developed for this study. Items were designed to capture key dimensions commonly associated with source credibility and attractiveness in persuasion research, namely, attractiveness, trustworthiness, likeability, and desirability. These attributes are frequently cited as influential factors affecting message reception and consumer attitudes in endorsement contexts. Each item is rated on a five-point Likert scale ranging from 1 = "Not at

all" to 5 = "Very much so." While the scale was constructed specifically for this study, it draws conceptually from well-established constructs in source credibility literature such as Ohanion, (1990) and Eisend (2006).

Appearance consumption motivation was assessed using a nine-item scale adapted from the Exercise Motivations Inventory–2 (EMI-2), originally developed by Markland and Ingledew (1997). The EMI-2 is a well-established instrument designed to measure individuals' motivations for engaging in physical activity, capturing a broad range of factors such as physical appearance, health, fitness, and social recognition. It represents a refined version of the original Exercise Motivations Inventory (EMI), with improved applicability to both exercisers and non-exercisers. The EMI-2 prompts respondents with the stem, "Personally, I exercise (or might exercise) to…," followed by 51 items rated on a six-point Likert scale ranging from 0 ("Not at all true for me") to 5 ("Very true for me"). For the purposes of this study, the scale was adapted to examine appearance-related consumption motivations within the context of nutraceutical product use, which is hypothesised to influence consumers' intention to purchase nutraceutical products. Specifically, the stem was modified to read, "Personally, I purchase (or would purchase) nutraceutical products to…," allowing for a more targeted assessment of physical enhancement motives as a potential driver of consumer behaviour. Nine items from the original 51 were selected based on their relevance to appearance and health-related motivations. While the content was adapted to reflect the consumption of nutraceuticals rather than exercise participation, the original six-point Likert response format was retained to maintain consistency in scale interpretation.

Schaefer and Thompson's (2018) Physical Appearance Comparison Scale–3 (PACS-3) was also employed to assess appearance comparison motivations, hypothesised to moderate the relationship between appearance consumption motivations and consumer behaviour. The PACS-3 is an advanced revision of the original PACS (Thompson, Heinberg, & Tantleff, 1991) and PACS-R (Schaefer & Thompson, 2014), designed to provide a more comprehensive assessment of appearance comparison processes. It incorporates multiple dimensions, including comparison frequency, direction (upward vs. downward), emotional impact, and target proximity (proximal vs. distal), as well as various appearance domains such as weight-shape, muscularity, and overall

physical appearance. The original scale comprises 41 items addressing 16 distinct comparison targets. For this study, nine items were selected based on their relevance to the research objectives and their capacity to capture motivational aspects of appearance comparison in relation to consumption behaviours. While the original PACS-3 uses a five-point Likert scale ranging from 1 (“never”) to 5 (“almost always”), the scale was adapted in this study to better align with the wording and structure of other measures in the survey. Respondents were instead asked to indicate their agreement with each statement on a five-point scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). This adaptation was made to ensure consistency across all survey items and to encourage reflection on agreement with comparison-driven consumption motives rather than mere behavioural frequency.

The final section of the study comprised basic demographic questions. Only age and gender were collected, as these variables were considered potential covariates in the subsequent analysis. Additionally, responses were screened for completeness and attentiveness to ensure data quality. Although all survey items and questions required mandatory responses, an attention check was included to assess response reliability. Participants who failed the attention check or did not complete the survey can then be excluded from the analysis, thereby enhancing internal validity.

The next chapter explores the results of the data collection process, testing each hypothesis to determine effects.

Chapter four: Results

4.1 Data analysis methods

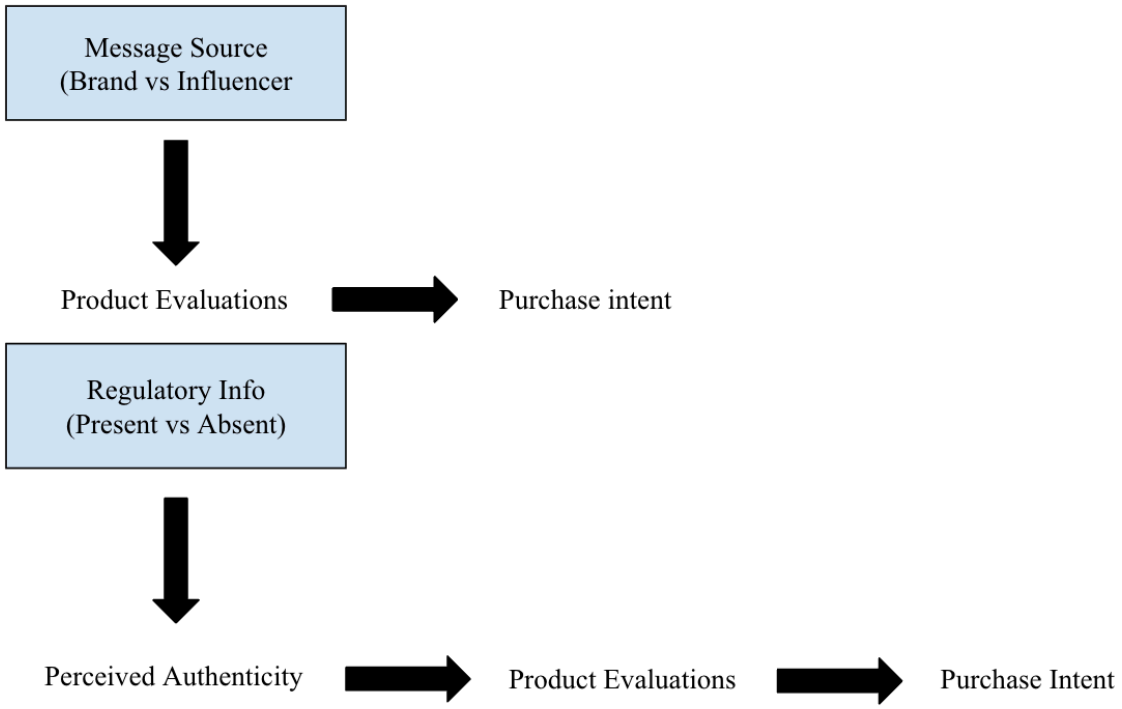
The quantitative data collected through the study were entered into IBM SPSS Statistics (Version 30) for analysis. Initial data preparation involved cleaning and organising the dataset, which involved checking for missing values, removing incomplete responses, deleting unnecessary data, and ensuring the correct coding of variables.

Descriptive statistics were first generated to provide an overview of the sample characteristics, assess frequencies of categorical data, and to summarise responses across key variables. Following this, composite scales were established for all relevant independent and dependent variables, based on the theoretical constructs underpinning the study. Internal consistency of these scales was assessed using Cronbach's alpha to ensure acceptable levels of reliability (presented in Table 3).

Subsequent analyses were conducted to test the study's hypotheses. A series of one-way ANOVAs were used to examine mean differences across groups where appropriate. To examine the hypothesized moderated relationships, multiple linear regression analyses were conducted to assess the predictive effects of the independent variables on the respective dependent variables, incorporating interaction terms to test for moderation effects. All statistical tests were conducted using a significance level of $p < .05$.

Figure 3 below presents a conceptual model outlining the hypothesised effects of message source and regulatory information on product evaluations, purchase intent, and perceived authenticity.

Figure 3: *Conceptual model of proposed relationships*



4.2 Hypotheses outcomes

The table below summarises the results of the hypothesis testing, specifying which hypotheses were supported or rejected based on the significance and direction of the findings. It serves as a concise overview of the study's key empirical outcomes. The sections that follow then show the statistical analysis procedure to test the hypotheses.

Table 4: *Hypotheses Outcomes*

Hypotheses	**Test Used**	**Results**
H1a*: Influencer advertising (vs. branded advertising) effects nutraceutical product evaluations.*	Mann-Whitney U test, independent samples t-test.	Supported
H1b: *Influencer advertising (vs. branded advertising) positively influences purchase intent.*	Mann-Whitney U test, independent samples t-test.	Not Supported

H1c: *Influencer advertising (vs. branded advertising) leads to higher perceptions of message source authenticity for nutraceutical products.*	Mann-Whitney U test, independent samples t-test.	Not Supported
H2: *Consumer awareness of the lack of regulation in the nutraceutical industry moderates the impact of influencer (vs. brand) advertising on purchase intent, such that the effect of influencer advertising is weaker among consumers with awareness.*	Between-subjects ANOVA	Supported
H3: *Appearance-based consumption motivations positively influence product evaluations of nutraceutical products, such that individuals with higher appearance-based motivation evaluate these products more favourably.*	Linear regression	Supported
H3a: *The positive effect of appearance-based consumption motivation on product evaluations is moderated by regulatory context, such that the effect is attenuated when regulatory information is present.*	Multiple regression (moderation)	Not Supported
H4: *Appearance-based consumption motivations moderate the effect of message source on purchase intent toward nutraceutical products, such that the effect is stronger when motivation to purchase for appearance is higher.*	Hierarchical regression	Not Supported
H4a: *Appearance-based consumption motivations moderate the relationship between source characteristics and purchase intent, such that this relationship is stronger when appearance motives are higher.*	Hierarchical regression	Supported

4.3 Testing Hypotheses

This section presents the results of the hypothesis testing conducted to examine the proposed relationships between influencer and brand advertising on consumer outcomes toward nutraceutical products. Each hypothesis is addressed in turn, detailing the analytical methods used, including regression models and interaction effects where applicable.

4.3.1 H1a: Influencer advertising (vs. branded advertising) effects nutraceutical product evaluations.

Given that the assumption of normality required for the independent samples t-test was not met, a non-parametric Mann-Whitney U test was conducted to examine differences in product

evaluations between influencer advertising and branded advertising. Results revealed a significant difference between groups, U = 7463.50, Z = -5.931, $p < .001$ (two-tailed). Product evaluations were significantly higher for branded advertisements (M = 185.07) than for influencer advertisements (M = 124.47), suggesting that consumers evaluated products more favourably when promoted through traditional branding rather than by influencers. This finding supports H1, indicating that the source of advertising, brand versus influencer, significantly affects evaluations of nutraceutical products.

To ensure the robustness and consistency of this finding, an independent samples t-test was conducted to compare the effect of influencer advertising and branded advertising on nutraceutical product evaluations. There was a statistically significant difference in product evaluations between the two groups, with participants in the branded advertising condition (M = 3.56, SD = 0.84) reporting significantly higher product evaluations than those in the influencer advertising condition (M = 2.89, SD = 1.05); $t(274) = 6.18$, $p < .001$. This suggests that branded advertising leads to significantly more favourable evaluations of nutraceutical products than influencer advertising.

The convergence of results across both tests strengthens the validity of the conclusion that branded advertising leads to significantly more favourable evaluations of nutraceutical products than influencer advertising.

These tests were necessary to ensure appropriate analysis given the data distribution and research design: the Mann–Whitney U test was used for variables that did not meet normality assumptions, while independent samples t-tests were applied to compare group means where parametric assumptions were satisfied. Using both methods provided convergent evidence, increasing the robustness and reliability of the findings. The same analytical approach was applied to H1b and H1c for the same reasons.

4.3.2 H1b: Influencer advertising (vs. branded advertising) positively influence purchase intent.

As in the previous analyses, given that the assumption of normality required for the independent samples t-test was not met, a non-parametric Mann-Whitney U test was conducted to examine whether purchase intent differed between influencer advertising and branded advertising for nutraceutical products. The results revealed a statistically significant difference between the two groups, U = 7777.50, Z = -5.531, $p < .001$ (two-tailed). Contrary to the hypothesis, branded advertisements (M rank = 183.21, n = 168) were associated with significantly higher purchase intent than influencer advertisements (M rank = 126.64, n = 145). These results suggest that consumers were more inclined to purchase nutraceutical products when exposed to branded ads than influencer endorsements.

To ensure the robustness and consistency of this finding, an independent samples t-test was conducted to compare the effect of influencer advertising and branded advertising on purchase intent. There was a statistically significant difference in purchase intent between the two groups, with participants in the branded advertising condition (M = 3.29, SD = 0.92) reporting significantly higher purchase intent than those in the influencer advertising condition (M = 2.63, SD = 1.11); $t(281.62) = 5.72$, $p = <.001$. This result shows that branded advertising was more effective than influencer advertising in increasing purchase intent in this study.

The convergence of results across both tests strengthens the validity of the conclusion and again shows that branded advertisements drive greater consumer responses than influencer advertisements for the same nutraceutical type.

4.3.3 H1c: Influencer advertising (vs. branded advertising) generates higher authenticity perceptions for nutraceutical products.

Given that the assumption of normality required for the independent samples t-test was not met, again, a non-parametric Mann-Whitney U test was conducted to examine whether perceptions of message source authenticity differed between influencer advertising and branded advertising for nutraceutical products. The results indicated a statistically significant difference in authenticity perceptions between the two groups, U = 9630.00, Z = -3.203, $p < .001$ (two-tailed). Contrary to

the initial hypothesis, branded advertisements (M rank = 172.18, n = 168) were rated as more authentic than influencer advertisements (M rank = 139.41, n = 145).

To ensure the robustness and consistency of this finding, an independent samples t-test was conducted to compare the effect of influencer advertising and branded advertising on authenticity perceptions. There was a statistically significant difference in authenticity perceptions between the two groups, with participants in the branded advertising condition (M = 3.07, SD = 0.94) reporting significantly higher perceptions of authenticity than those in the influencer advertising condition (M = 2.70, SD = 1.08); $t(287) = 3.34$, $p < .001$.This result reveals that branded advertising yielded significantly higher perceptions of authenticity compared to influencer advertising, indicating that participants viewed branded adverts, at least in the domain of this nutraceutical product, as more authentic than influencer endorsements.

The convergence of results across both tests strengthens the validity of this conclusion, especially across the set of hypothesis tests conducted to this point.

4.3.4 H2: Consumer awareness of the lack of regulation in the nutraceutical industry moderates the impact of influencer (vs. brand) advertising on purchase intent, such that the effect of influencer advertising is weaker among consumers with awareness.

A 2 (Regulatory Information: Present vs. Absent) × 2 (Message Source: Influencer vs. Brand) between-subjects ANOVA was conducted to examine the interaction effect of regulatory awareness and source of advertisement on purchase intent for a nutraceutical product.

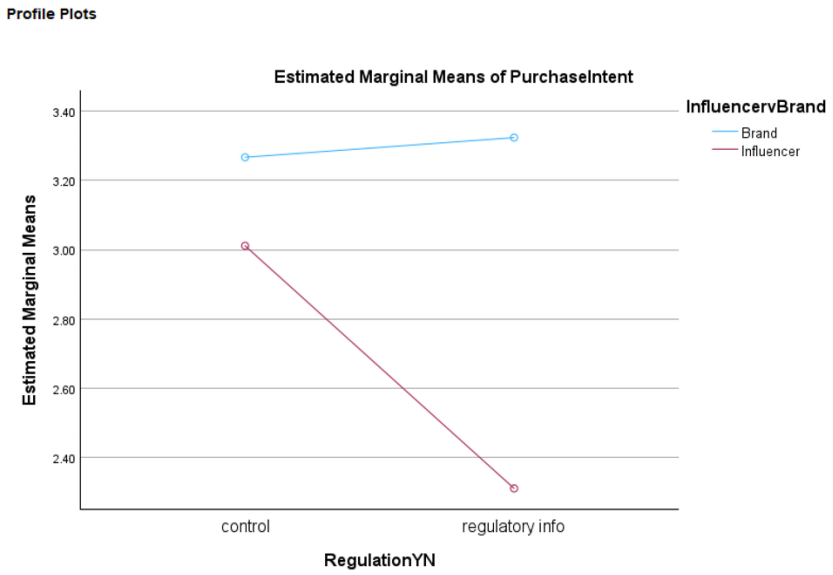
Descriptive statistics revealed that in the control condition in which no regulatory information about nutraceuticals was primed, participants reported relatively similar purchase intent for products advertised by a brand (M = 3.27, SD = 0.94) and by an influencer (M = 3.01, SD = 1.14). In contrast, in the regulatory information condition which exposed readers to information about the lack of regulatory oversight for nutraceuticals, purchase intent was substantially lower when the product was promoted by an influencer (M = 2.31, SD = 0.98) compared to a brand (M = 3.32, SD = 0.91). This is the most intriguing and novel finding so far in this data analyses.

The following analysis helps explore this result. The ANOVA revealed a significant interaction between regulatory information and advert source on purchase intent, $F(1, 309) = 11.42$, $p < .001$, $\eta^2_p = .036$, indicating that the effect of advert source on purchase intent depended on whether participants were exposed to regulatory information.

The analysis also had significant main effects, revealing that participants exposed to information about the lack of nutraceutical regulation reported significantly lower purchase intent overall (M = 2.82) than those in the control condition who merely read about the weather (M = 3.16), $F(1, 309) = 8.25$, $p = .004$, $\eta^2_p = .026$. Furthermore, across both conditions, purchase intent was significantly higher for branded adverts (M = 3.29) than for influencer adverts (M = 2.63), $F(1, 309) = 32.04$, $p < .001$, $\eta^2_p = .094$, aligning with H1.

The interaction, illustrated in Figure 4, supports the hypothesis that regulatory awareness moderates the influence of advertising source on consumer behaviour. Specifically, when regulatory concerns are made salient, consumers exhibit significantly lower purchase intent for products endorsed by influencers compared to brands. In the absence of such concerns, the difference between advert sources is not statistically meaningful. That is, consumers in this study who were not primed to think about regulatory status of the products were equally willing to buy a nutraceutical product whether they were exposed to the product from a branded advertisement or from an influencer recommendation. The story that emerges of note, here, for the first time we know of in the literature, is that when consumers are exposed to information that a product lacks regulatory approvals, influencers promoting the product appear to lose more ground from shoppers than brands themselves promoting the same products.

Figure 4: *SPSS Output: Estimated Marginal Means for Purchase Intent Across Experimental Conditions*



4.3.5 H3: Appearance-based consumption motivations positively influence product evaluations of nutraceutical products, such that individuals with higher appearance-based motivation evaluate these products more favourably.

A simple linear regression was conducted to examine whether appearance consumption motive predicts product evaluations in the control condition (i.e., when no regulatory misconduct information was presented). The goal of this test was to isolate the baseline relationship between appearance-based consumption motives and product evaluations.

Results revealed a significant model, $F(1, 151) = 43.26$, $p < .001$, with appearance motive explaining 22.3% of the variance in product evaluations ($R^2 = .223$). The regression coefficient was positive and significant (B = .337, SE = .051, β = .472, $t = 6.577$, $p < .001$), indicating that higher appearance consumption motives were associated with more favourable evaluations of the nutraceutical product. This effect was observed regardless of whether the source of product information was an influencer or a brand. These findings support H3.

The data reveals that individuals with higher appearance consumption motives, who are those more motivated by the appearance-enhancing potential of products, are significantly more likely to evaluate the nutraceutical product more favourably. Importantly, this effect persists regardless of whether the product is promoted by an influencer or a brand, as the analysis was conducted in the control condition, where no information about regulatory misconduct was introduced. Thus, the influence of appearance motives on product evaluations appears to operate independently of source credibility or ethical concerns.

4.3.6 H3a: The positive effect of appearance-based consumption motivation on product evaluations is moderated by regulatory context, such that the effect is attenuated when regulatory information is present.

A moderation analysis was conducted to examine whether the relationship between appearance-based consumption motivation and product evaluations was moderated by the presence of regulatory misconduct information. A multiple regression was performed with appearance motivation (centred), regulation condition (0 = control, 1 = regulation), and their interaction term as predictors.

The overall model was significant, $F(3, 309) = 44.25$, $p < .001$, explaining 30.1% of the variance in product evaluations ($R^2 = .301$). Appearance motive significantly predicted product evaluations ($B = .337$, $\beta = .472$, $p < .001$), indicating that individuals with stronger appearance-based motives evaluated the product more favourably. However, the interaction between appearance motive and regulation condition was not significant ($B = .070$, $\beta = .072$, $p = .313$), suggesting that the effect of appearance-based motivation on product evaluations did not differ across regulatory contexts. Therefore, this analysis did not support the presence of a moderation effect.

The lack of a significant interaction effect indicates that appearance-based consumption motivations exert a consistent positive influence on product evaluations, even when participants are exposed to information about regulatory misconduct.

4.3.7 H4: Appearance-based consumption motivations moderate the effect of message source on purchase intent toward nutraceutical products, such that the effect is stronger when motivation to purchase for appearance is higher.

To test whether appearance-based consumption motivation moderated the relationship between message source (influencer vs. brand) and purchase intent, a hierarchical regression was conducted on the full sample regardless of condition. The model was significant, $F(3, 309) = 65.47$, $p < .001$, explaining 39% of the variance in purchase intent ($R^2 = .39$). Appearance motivation significantly predicted purchase intent (B = 0.334, $p < .001$), indicating that consumers with stronger appearance concerns were more likely to intend to purchase nutraceuticals. Message source was also significant (B = –0.549, $p < .001$), with brand endorsements generating higher purchase intent than influencer endorsements. Importantly, the interaction term was significant (B = 0.144, $p = .034$), suggesting that appearance motivation positively moderated the relationship: those with higher appearance concerns were more responsive to influencer endorsements.

To examine whether regulatory information altered this moderation effect, the sample was split by condition. In the regulatory information condition, the model remained significant, $F(3, 156) = 52.54$, $p < .001$. Both appearance motivation (B = 0.365, $p < .001$) and message source (B = –0.740, $p < .001$) predicted purchase intent, but the interaction was non-significant (B = 0.080, $p = .361$). In the no-regulation condition, the model was also significant, $F(3, 149) = 16.11$, $p < .001$, with appearance motivation (B = 0.308, $p < .001$) and message source (B = –0.373, $p = .014$) again significant, but the interaction remained non-significant (B = 0.146, $p = .200$).

These findings suggest that the moderating effect of appearance motivation found in the full sample does not persist when considering regulatory context. This may be due to reduced power in the split samples or to the dampening effect of regulatory framing on appearance-driven responses to message source.

4.3.8 H4a: Appearance-based consumption motivations moderate the relationship between source characteristics and purchase intent, such that this relationship is stronger when appearance motives are higher.

To examine whether appearance-based consumption motives moderated the relationship between source characteristics (encompassing both influencer and brand traits) and purchase intent, a hierarchical linear regression analysis was conducted separately for participants in the control group (no regulatory disclosure) and the experimental group (regulatory misconduct disclosure presented). In both conditions, Model 1 included source characteristics and appearance motives as predictors, while Model 2 added the interaction term (Source Characteristics × Appearance Motives) to test for moderation.

In the control group, results indicated that source characteristics significantly predicted purchase intent (B = 0.669, $p < .001$), as did appearance-based motives (B = 0.136, $p = .004$). The addition of the interaction term in Model 2 yielded a significant effect (B = 0.088, $p = .026$), accounting for a small but significant increase in explained variance ($\Delta R^2 = .015$, F change(1,149) = 5.08, $p = .026$). This suggests that appearance motives positively moderate the effect of source characteristics on purchase intent.

In the experimental group, source characteristics (B = 0.716, $p < .001$) and appearance motives (B = 0.233, $p < .001$) again significantly predicted purchase intent. The interaction term remained significant (B = 0.105, $p = .019$), with the model explaining an additional 1.4% of the variance ($\Delta R^2 = .014$, F change(1,156) = 5.64, $p = .019$).

Together, these results indicate that appearance-based consumption motives not only directly influence purchase intent but also strengthen the impact of source characteristics, across both influencer and brand dimensions, even in the presence of regulatory warning information. This consistent moderation effect across both groups suggests that appearance-driven consumers may remain especially receptive to persuasive source cues despite critical disclosures.
The chapter that follows next unpacks these statistical findings to determine interpretations, contributions, directions for future research, and implications.

Chapter five: Discussion

This chapter discusses the key findings of the study considering the theoretical frameworks and existing literature. The aim is to interpret the significance of the results, address each of the research questions, and highlight their implications for understanding consumer behaviour in influencer-endorsed nutraceutical marketing practices. I also seek to interpret these findings to determine implications for practice and to explore implications that might determine future research directions for scholars of persuasion and critical marketing.

In the sections that follow, I first provide a summary of the key findings and then interpret these findings as organised by research question, before exploring limitations and directions for future research.

5.1 Summary of key findings

The results and findings from the data analysis revealed several key patterns in how consumers respond to influencer versus brand advertising in the nutraceutical space. While influencer advertising did significantly affect consumer responses and outcomes, it was not in the anticipated direction. Results showed that branded advertising consistently outperformed influencer endorsements across key outcome measures in this product category, including product evaluations, purchase intent, perceptions of authenticity, and evaluations of source characteristics. This finding counteracts some of the literature's more robust recent findings.

Notably, consumer awareness of regulatory shortcomings moderated these effects. The full interactions tell the larger story of this data. Specifically, when consumers became aware that the nutraceutical industry lacks proper regulation in many areas, it changed how they responded to the adverts. Influencer advertising was less persuasive when participants were aware of regulatory gaps. In the control condition, where no such concerns were mentioned, influencer ads had a comparatively stronger effect than in the experimental condition, but they did not surpass the effectiveness of brand ads. Essentially, it was found that regulatory awareness acts as a psychological filter, reducing the effectiveness of influencer marketing when trust is

compromised, but not branded marketing. This suggests that influencers may be more vulnerable to credibility issues, warranting further exploration.

Moreover, individual differences in appearance-based consumption motivations emerged as a pivotal determinant of consumer response. Participants who were more motivated by appearance-related concerns consistently evaluated nutraceutical products more favourably, suggesting that aspirations to appear aesthetically pleasing significantly shape perceived product value. These individuals were also more responsive to persuasive cues, particularly when the characteristics of the message source, such as attractiveness, trustworthiness, likeability, or desirability, resonated with their underlying appearance-driven goals.

Importantly, this moderating effect remained robust even in the presence of regulatory disclosures, indicating that appearance-based motives may exert a psychologically resilient influence on consumer judgment. In other words, even when confronted with information that could undermine trust in product marketing (e.g., awareness of regulatory shortcomings), those with heightened appearance concerns continued to be influenced by the persuasive power of source attributes. This highlights the enduring salience of self-image and aesthetic goals as part of a "glow up" culture's effects in consumer decision-making, even amid critical scrutiny. Collectively, the results highlight the complex interplay between advertising source, consumer motivation, and regulatory context in influencing attitudes and intentions within the nutraceutical market.

5.2 Addressing the research questions

It is essential to address the five core research questions that guided this study and to critically interpret the data to assess the extent to which the findings respond to these questions. Structuring the discussion around the research questions provides a clear and systematic approach for evaluating the significance and relevance of the results. This approach also facilitates the identification of any gaps or unresolved issues that warrant further investigation for future research.

5.2.1 RQ1: How do influencer endorsements impact consumer attitudes toward nutraceutical products compared to traditional branded advertising?

The findings of this study indicate that branded advertising elicits significantly more favourable consumer attitudes toward nutraceutical products than influencer endorsements. The results of this study provide compelling evidence that influencer endorsements do not enhance positive consumer attitudes toward nutraceutical products when compared to branded advertising. In fact, consumers evaluated products significantly more favourably when promoted through branded advertisements, with branded sources consistently outperforming influencers in both non-parametric ($U = 7463.50$, $p < .001$) and parametric analyses ($t(274.33) = 6.18$, $p < .001$). This shows evidence of a clear boundary effect for the effectiveness of influencer marketing in the health and wellbeing space.

Contrary to prior research asserting the more positive impact of influencer marketing on consumer perceptions and behaviour, the findings from this study challenge this narrative. While past literature emphasizes the effectiveness of influencers in leveraging trust, authenticity, and social proof to enhance engagement and brand attitudes (Barari et al., 2025; Hugh Wilkie et al., 2022; Prasenjeet Samanta, 2025), the present results suggest that, in the context examined, traditional brand advertising may serve as the more persuasive strategy in shaping favourable product perceptions.

This may be attributed to more consumer scepticism surrounding influencer marketing, particularly in sectors such as health and wellness where credibility is paramount. A study BY Shukla (2023) found that perceptions of influencer content varied by platform, with mobile users responding more positively than web users, who tended to view such content with greater scepticism. This suggests that the effectiveness of influencer marketing may depend, in part, on the context in which it is encountered, highlighting platform as a potential variable contributing to its reduced impact compared to traditional brand advertising. The findings of this thesis suggest that the effectiveness of influencer marketing may also depend on product category, with more risky or less regulated products reducing impact.

Another possible explanation may be attributed to increasing perceptions of inauthenticity or over-commercialisation. As influencers increasingly engage in brand partnerships, the authenticity of their endorsements can diminish, blurring the line between genuine advocacy and commercial intent. In a metric-driven environment, authenticity becomes conflated with popularity and ad fatigue, raising ethical concerns around transparency (Ekinci et al., 2025; Migkos et al., 2025).

Furthermore, factors such as industry and consumer demographics are also equally important to consider. Migkos et al. (2025) highlights the varying impact of influencer marketing on customer loyalty and profitability across industries and demographics. Stronger loyalty effects are observed in emotionally driven sectors such as fashion and beauty, while trust and expertise are more influential in fields such as technology and finance. Age and cultural context also moderate effectiveness, with younger audiences responding more to influencer content on platforms like Instagram and TikTok, whereas older consumers value transparency.

From a theoretical perspective, the Elaboration Likelihood Model (Petty & Cacioppo, 1986) also offers insight into this finding. In industries such as nutraceuticals, where products are tied to health outcomes, consumers may rely on central processing, carefully evaluating the message based on its credibility, logic, and expertise. Thus, branded advertising could have outperformed influencer advertising in nutraceutical promotion because consumers processed the information more deeply (central route), associating brands with expertise, authority, and credibility. In contrast, influencer content may have triggered peripheral cues (e.g., attractiveness, popularity), which are less persuasive in high-stakes categories like health. These findings strongly indicate that context and product category critically shape source effectiveness.

These findings underscore the increasingly fragmented nature of consumer trust in the digital age. While branded advertising outperformed influencer endorsements in this context, showing a boundary condition for influencer marketing effectiveness, such outcomes are likely shaped by industry-specific dynamics and broader shifts in online consumer culture. The volatility of digital environments, marked by cancel culture, market saturation, and information overload, makes consumer attitudes less stable and harder to generalise across time or sectors. Trust is no longer

static; both brands and influencers are subject to cycles of scrutiny, backlash, and redemption. As influencer marketing matures and becomes more exposed to public critique, its effectiveness appears to hinge on nuanced factors such as the product category, the credibility of the endorser, and audience demographics. Notably, the broad age range of this study's sample (mean age 38) suggests outcomes may differ among younger cohorts, such as Gen Z. Ultimately, the results reflect a challenge as influencer marketing reaches into more industries and matures.

5.2.2 RQ2: To what extent do influencer endorsements influence consumers' purchase intentions for nutraceutical products compared to branded advertising?

The data further reveal that influencer endorsements do not increase purchase intent for nutraceutical products relative to branded advertisements. In fact, the opposite effect was observed. Participants reported significantly higher intent to purchase products featured in branded advertising (M = 3.29) than influencer-led promotions (M = 2.63), supported by both non-parametric (U = 7777.50, $p < .001$) and parametric tests ($t(281.62) = 5.72$, $p < .001$). This finding is particularly noteworthy given the prevailing industry assumption that influencers drive consumer purchasing behaviour through mechanisms such as relatability and parasocial relationships (Zhao et al., 2024; Brown & Hayes, 2008; Jin et al., 2019). This could again be interpreted through the lens of the Elaboration Likelihood Model (Petty & Cacioppo, 1986). Consumers evaluating nutraceutical products may rely less on peripheral cues such as the identity of an influencer and more on perceived message credibility and professional presentation, factors typically associated with branded advertisements.

According to Social Cognitive Theory (Bandura, 1986), observational learning depends on the perceived credibility and competence of the model. If influencers are not regarded as credible—particularly in the health domain — their capacity to influence behaviour, including purchase intent, may be diminished. In this study, an unknown influencer was deliberately selected to minimise bias associated with existing attitudes or parasocial relationships. However, this design choice also reveals an important insight: the strength of parasocial relationships may be a critical driver of influencer effectiveness. While branded advertising significantly outperformed influencer advertising in terms of purchase intent, this should be interpreted in relative terms.

Drawing on the Attention Economy model and findings from the literature, it remains unclear whether the preference for branded advertising was driven by increased trust from the brand itself or by other factors, such as decreased trust in the influencer or their gender, physical appearance, or the perceived professionalism and visual appeal of the ad. The branded stimulus was arguably more polished and engaging in its approach, which may have contributed to its persuasive power. The influencer stimulus adopted the casual, day-in-the-life approach taken in influencer marketing, which may not have been as effective for this product category. Future research should investigate whether a well-known influencer, particularly one established in the fitness or health domain, would have yielded different results. Future research could also examine the impact of casual versus professional production value for advertisement in this product category.

Another perspective to consider through parasocial interaction theory is that while influencers may foster emotional closeness, this relationship may not translate into trust when the endorsed product carries potential health consequences. Consumers may implicitly recognise the transactional nature of influencer promotions, especially in an era saturated with sponsored content, thereby diminishing their effectiveness as purchase triggers. These findings underscore the need for marketers to reevaluate assumptions about the potential degree of influencer effectiveness and consider how product category characteristics fundamentally alter the effectiveness of endorsement types.

5.2.3 RQ3: Does consumer awareness of regulatory misconduct in the nutraceutical industry weaken the persuasive impact of influencer endorsements?

My study confirms that consumer awareness of regulatory misconduct significantly moderates the persuasive effect of influencer endorsements on purchase intent. When participants were made aware of regulatory issues in the industry, purchase intent for influencer-endorsed products dropped dramatically (M = 2.31) compared to branded products (M = 3.32), resulting in a significant interaction effect ($F(1, 309) = 11.42$, $p < .001$, $\eta^2_p = .036$). This finding highlights the conditional fragility of influencer impact. When ethical concerns are activated, consumers are markedly less persuaded by influencer messaging. In contrast, branded advertising remained

relatively immune to this effect, suggesting that brand communications are perceived as more structurally bound to regulatory compliance.

This reflects a broader trend where regulatory concerns tend to heighten consumer scepticism, particularly in sectors such as health and wellness, which in turn affects buying behaviour (Nguyen et al., 2023; NIQ, 2025; Pacillo, 2024; Rossi & Rivetti, 2023). Regulatory priming may serve as a form of moral framing, prompting consumers to shift from passive engagement to active critical evaluation. By foregrounding ethical concerns, such priming reorients consumers' cognitive processing, encouraging them to reassess the credibility and integrity of the endorsement rather than accepting it uncritically.

This interaction can be further understood through the lens of the Elaboration Likelihood Model. Typically, influencer endorsements operate via the peripheral route to persuasion, relying on superficial cues such as attractiveness, likability, or relatability as heuristics for credibility (Petty & Cacioppo, 1986; Farivar et al., 2023). However, when lack of regulatory oversight is introduced, this default reliance on peripheral processing appears disrupted. Consumers shift toward central route processing, engaging in more effortful evaluations of message content and source credibility. This heightened scrutiny, driven by increased perceptions of product risk, weakens the persuasive power of influencers and underscores the conditional nature of their credibility. In contrast, brand communications may retain persuasive influence under these conditions due to their perceived structural legitimacy.

A critical observation is how easily the perceived authenticity of influencers can unravel when ethical or institutional integrity is questioned. The trust advantage held by influencers is structurally weaker than assumed, collapsing more readily under the weight of scepticism. This fragility also raises questions about the strength of Parasocial Interaction Theory (Horton & Wohl, 1956) and the durability of parasocial relationships in ethically compromised contexts. The perceived bond between influencer and consumer may be disrupted when ethical integrity is challenged. While consumers may not reject influencers outright, trust is precariously balanced on the absence of doubt. When doubt is introduced, particularly regarding industry and regulatory standards, consumers may penalise influencers more harshly than brands, feeling a

greater level of betrayal by someone they believed they were personally connected to. However, this construct warrants further investigation, especially as the influencer in this study was not a well-known figure. Exploring this dynamic with familiar or followed influencers may yield deeper insights in future research.

These findings also reinforce the role of consumer scepticism as a defence mechanism and align with arguments in attention economy theory (Davenport & Beck, 2001), which suggest that consumers increasingly regulate their attention and trust in response to cognitive overload and deception cues. Regulatory literacy, therefore, not only informs consumer decision-making but actively reshapes the persuasive hierarchy between advertising sources. The presence of critical context can invert traditional dynamics, and what is effective under neutral conditions (e.g., influencer familiarity) becomes detrimental when ethical concerns, such as the absence of regulatory oversight, are foregrounded.

5.2.4 RQ4: Does a focus on physical appearance shape consumer responses to influencer and branded nutraceutical advertising?

The findings of this study provide compelling evidence that appearance-based consumption motivations significantly shape consumer responses to nutraceutical advertising, regardless of whether the product is promoted by an influencer or a brand. Individuals with stronger appearance-based motives consistently evaluated nutraceutical products more favourably. The findings revealed a significant positive relationship between appearance motivation and product evaluations ($F(1, 151) = 43.26$, $p < .001$), with appearance motives accounting for 22.3% of the variance ($R^2 = .223$). Additionally, individuals driven by appearance concerns were found to be more susceptible to the appeal of health and beauty-related products, regardless of advertising source ($B = .337$, $\beta = .472$, $p < .001$). However, moderation analysis showed that this relationship did not significantly vary based on the presence or absence of regulatory information ($B = .070$, $p = .313$).

This non-significant interaction suggests that appearance-driven motives are robust and may override ethical concerns raised by regulatory disclosures. Social Identity Theory (Tajfel &

Turner, 1979) offers a valuable lens for interpreting this resilience. Consumers with strong appearance-based motivations may identify with digital communities where physical appearance is a central norm. Alignment with these in-groups fosters a sense of belonging, which can encourage individuals to prioritise group ideals over critical evaluation. In this way, the drive to maintain a positive self-concept within appearance-oriented communities may override rational scepticism, especially when products are framed as tools for self-enhancement that align with the "glow-up" culture emergent in social media. This exposes a tension between rational scepticism and emotionally charged self-image goals.

Further, appearance-based consumption motivation was found to moderate the relationship between message source and purchase intent. A significant interaction effect in the full sample ($B = 0.144$, $p = .034$) indicated that individuals with stronger appearance concerns were more responsive to influencer endorsements. However, this effect disappeared when the sample was split by regulatory condition, suggesting it may be influenced by sample size or attenuated by the presence of regulatory cues. This inconsistency points to a potential limitation but also raises important questions for future research regarding the interplay between contextual framing and intrinsic motivation.

Crucially, the findings also revealed that appearance motives consistently strengthened the influence of source characteristics on purchase intent, both in the presence and absence of regulatory disclosure. In the control group, the interaction between appearance consumption motives and source characteristics was significant ($B = 0.088$, $p = .026$), as well as in the regulatory condition ($B = 0.105$, $p = .019$). Consumers with stronger appearance-based consumption motives demonstrate greater susceptibility to source characteristics when forming purchase intentions toward nutraceutical products, as these motives amplify the persuasive impact of source attributes, irrespective of regulatory awareness. This reinforces the role of appearance interests as a core driver in consumer decision-making.

Drawing on Self-Determination Theory (Deci & Ryan, 1985), appearance-related consumption can be understood as being driven by internalised extrinsic goals tied to body image and social approval. These identity-relevant motivations function as deep-seated regulatory anchors that

may override rational judgment and persist even in ethically ambiguous contexts. As such, the desire to enhance appearance may not be easily disrupted by external cues, including regulatory warnings, potentially increasing consumer susceptibility to persuasive messaging. In contrast to its application in the preceding research questions, the Elaboration Likelihood Model in this context suggests that appearance-driven consumers may rely more heavily on peripheral cues, such as the attractiveness of the source or product aesthetics, particularly when these cues align with their internalised goals. While the earlier findings indicated that influencer advertisements may have elicited more critical consumer responses due to increased central route processing, the introduction of appearance-based consumption motives suggests a reversal of this effect. This cohesively aligns with Social Identity Theory and Self-Determination Theory, highlighting that consumers with strong appearance concerns remain highly susceptible to persuasive messaging, even when ethical or regulatory concerns are made salient.

Collectively, these findings affirm that appearance-based consumption motives represent a dominant psychological force shaping both product evaluations and purchase intent. Thus, the research question can be answered with confidence: a focus on physical appearance significantly influences consumer responses to nutraceutical advertising. A critical takeaway emerging from these findings is that ethical persuasion may fail not because the message lacks clarity, but because the underlying motivational system is too powerful. This reveals a more complex picture of consumer vulnerability— one not solely driven by deception, but by the salience of personal goals that impair judgment.

This critical insight, drawn from the preceding discussion, comprises three key observations. The first is goal-congruent bias, which suggests that consumers may, either consciously or unconsciously, process information in a manner that aligns with their appearance-related goals. The second is vulnerability through aspiration: marketing stimuli that emphasize appearance enhancement are not only persuasive but also emotionally resonant, particularly for consumers whose self-worth or identity is closely tied to body image. The final observation is resistant persuasion, indicating that even in the presence of cognitive dissonance concerning the source, advertisement, or industry trustworthiness, the emotional promise of a ‘better self’ may still outweigh rational hesitations and tip the scales in favour of purchase intent.

These findings can be further contextualised through the cultural lens of the "glow-up" narrative, a contemporary ideal of self-enhancement that merges appearance, confidence, and lifestyle transformation. Popularised through digital media, the glow-up serves as both a symbolic and aspirational framework through which consumers interpret nutraceuticals, not merely as health aids but as tools for achieving a better, socially validated self. This paradigm reinforces appearance-based motivations, embedding them in a broader cultural script of self-optimisation that may supersede rational judgement. Given its growing relevance in digital consumption and identity formation, the glow-up warrants deeper theoretical exploration in future research to better understand its influence on consumer vulnerability and decision-making.

5.3 Limitations

While this study offers valuable insights into the impact of social media endorsements on consumer behaviour within the nutraceutical industry, several limitations should be acknowledged.

First, neither of the experimental advertisements, brand nor influencer, underwent pretesting prior to the main data collection. Pretesting in research helps minimise errors in data collection and preference elicitation. It offers valuable insights into decision-making processes, aids in refining hypotheses, and allows for the revision of study materials and procedures to ensure questions (or in this case stimuli) are clear, relevant, and unambiguous (Hurst et al., 2015; Campoamor et al., 2024). Thus, pretesting with a smaller, independent sample could have ensured that both adverts were equivalent in terms of trust, clarity, product visibility, and audience likeability. The absence of pretesting introduces the possibility that unexplained characteristics of the selected stimuli influenced participant responses, thereby limiting the internal validity of between-group comparisons, particularly for the influencer advertisement, which had not been previously viewed. This introduces the possibility that observed effects may be due to the advert's ineffectiveness rather than the influencer or the influencer concept itself.

Another potential limitation is that this study focused exclusively on a single nutraceutical product (SBO Probiotics Ultimate) and featured one brand-generated advertisement paired with one influencer advertisement. Although this approach ensured content comparability and controlled for extraneous variables and fit within the scope and tightened timeframe of a master's thesis, it restricts the generalisability of the results. The findings cannot be assumed to apply across all nutraceutical products, different product categories, or varied influencer or brand styles. The use of multiple products or additional sets of adverts would have enabled tests for stimulus-specific effects, helped control for any confounds in the chosen stimuli, and increased the robustness of conclusions overall. Stimulus generalisation occurs when a learned behaviour is elicited by stimuli that are similar, but not identical, to the original stimulus with which the behaviour was reinforced (Tryon, 2014). Therefore, incorporating a broader range of stimuli could have strengthened the findings by allowing for an assessment of whether the observed effects extend beyond the specific content used in this study.

Furthermore, the participant pool, drawn from an online research panel and restricted to U.S. participants for this study, may not represent broader international consumer populations. The advertisement also featured a New Zealand-accented influencer, potentially introducing an accent and cultural mismatch for American participants. Foreign accents can trigger stereotypes of reduced competence and trustworthiness, hindering comprehension (O'Brien et al., 2024). Additionally, accented speakers can be perceived as out-group members, leading to cognitive biases such as reduced attention and weaker memory recall of their messages (Frances et al., 2018). While not anticipated to be a primary confounder, such factors could have influenced perceptions of trust or relatability. Moreover, the sample skewed older in age (mean age = 38.3 years), which may limit the applicability of results to younger demographic segments, such as Generation Z, who are often most engaged with influencer marketing. Adequate representation of age groups is critical when those groups are known to differ in their responses. In particular, younger adults may interact with influencer marketing in distinct ways compared to older demographics. As Gigliotti and Dietsch (2014) highlight, in the context of recreation surveys, age-based variation can significantly affect behavioural measures and satisfaction ratings, suggesting that skewed age distributions can compromise the validity of conclusions drawn

Both the influencer and brand advertisements used in this study reflect single, specific instances within their respective categories, which introduces potential confounds related to the particular characteristics of those exemplars. Notably, the influencer was female and presented in a polished, wellness-oriented aesthetic typical of social media health promotion. In the context of the nutraceutical industry, where products often intersect with appearance, wellness, and aspirational health ideals, such characteristics may have disproportionately influenced perceptions of credibility, trust, and relatability. Prior literature suggests that traits such as gender, attractiveness, and visual presentation can shape consumer judgments, particularly in health and beauty domains (Klebl et al., 2021; Benevento et al., 2025). As such, it is possible that the outcomes observed in this study were shaped not solely by the presence of an influencer per se, but by specific visual and demographic features of that influencer. The production quality, tone, and style of the videos were also not systematically matched, leaving room for interpretive bias. Without varying or controlling for these features, it is difficult to disentangle whether the observed effects reflect the concept of influencer marketing in nutraceuticals broadly, or the idiosyncrasies of the stimuli selected. This limits the extent to which the results can be generalized to other influencer types, styles, or demographics.

Additional potential limitations include the use of only one regulatory prime (i.e., disclosure of lack of regulation versus a neutral, weather story (control), which restricts understanding of how varying degrees or types of regulatory information might affect consumer responses. Furthermore, the study assessed only immediate, self-reported attitudes and intentions, without capturing actual behaviour, long-term effects, or the potential impact of repeated exposures. Random assignment and attention checks helped ensure data quality; however, the artificial nature of the online experiment and the possibility that participants guessed the study's purpose (i.e., demand characteristics) remain limitations that reduce how well the findings reflect real-world consumer behaviour. Lastly, the appearance-based consumption motivation measures, while adapted from validated scales, may not fully capture the complexity of motivational drivers in contemporary health-oriented consumption.

5.4 Future research

Building on the limitations and insights of the present study, several avenues warrant further exploration to advance theoretical understanding and practical application in influencer-driven nutraceutical marketing. The table below outlines proposed directions; each paired with its rationale and potential methodological approach. These recommendations aim to resolve some of the study's stated and inherent limitations, to enhance validity, to broaden the scope of investigation, and contribute to a more ethically grounded and evidence-informed understanding of influencer marketing within the nutraceutical industry.

Table 5: *Future Recommendations*

Research Area	Recommendation	Rationale
Product and stimulus diversity	Use varied nutraceutical products and multiple ad examples.	Enhances generalisability and isolates product-specific effects.
Stimulus pretesting	Pretest all ads for trust, clarity, and appeal.	Improves internal validity and reduces confounds.
Demographic and cultural scope	Include or restrict a sample to younger and cross-cultural samples to compare results.	Responses may differ by age and cultural context.
Influencer characteristics	Test effects of familiarity, gender, and expertise.	These traits may influence credibility and engagement.
Regulatory messaging	Vary disclosure types and ethical frames.	Clarifies how consumers respond to different regulatory cues.
Behavioural outcomes	Measure consumption and usage behaviours, not just attitudes.	Strengthens ecological validity.
Appearance-based motivations	Explore ways to counter appearance-driven motives.	These can override ethical or regulatory influence.
Ethical and policy implications	Examine frameworks for responsible influencer marketing.	Supports ethical practice and policy development.

As Table 3 shows, future research should replicate this study across a wider range of nutraceutical products and incorporate multiple sets of brand and influencer advertisements per product category. This would enable researchers to disentangle product-specific effects from those attributable to source characteristics, thereby enhancing the external validity and generalisability of source-related findings across advertising formats and health-related claims. To strengthen internal validity, subsequent studies should include rigorous pretesting procedures to assess and equate advertising stimuli on key dimensions such as clarity, credibility, aesthetic appeal, and professionalism. Standardized pretesting protocols would help mitigate potential stimulus-driven confounds and ensure greater equivalence across experimental conditions. Given the demographic specificity of this sample, future investigations should examine how age, gender, and cultural background could potentially shape responses to influencer endorsements. Younger cohorts such as Generation Z, who engage more frequently with social media and may hold different values, could respond differently to both messaging and regulatory cues. Cross-cultural comparisons would further illuminate how norms, media literacy, and trust dynamics vary internationally.

While influencer demographics and perceived expertise have been more extensively studied in other industries, examining these factors within the nutraceutical sector, a health-related field, may reveal distinct effects. Specifically, dimensions such as gender bias or physical appearance could play a more pronounced role due to the nature of the industry and consumer sensitivities surrounding health and wellness. For example, the influencer featured in this study was female, suggesting that future research might investigate how male influencers are perceived by consumers, and conversely, how male versus female audiences respond differentially. Similarly, the effect of an influencer's appearance or presentation style warrants further scrutiny given its potential impact on consumer trust and engagement in this context. Future studies should also further explore the moderating influence of influencer characteristics, such as perceived expertise, familiarity, gender, and follower count, on consumer responses. For instance, the differential impact of high-profile versus micro-influencers, or male versus female spokespersons, remains an underexplored area with implications for both targeting and message design in the nutraceutical industry.

Future research could also benefit from investigating a broader spectrum of regulatory framings, including partial disclosures, unethical compound formulations, warnings about specific health risks and future side effects, and ethically framed messages. Such research could also test these as labels on products or previews before an advert plays, varying the format in which the regulatory information is conveyed to consumers. This could provide a more nuanced understanding of how consumers interpret and respond to regulatory information in ambiguous or loosely regulated product categories such as nutraceuticals.

Moreover, moving beyond self-reported attitudes toward actual behavioural indicators, such as purchase behaviour, content engagement, or information seeking, would provide a more ecologically valid assessment of marketing impact. In doing so, such research could also inform the development of more targeted policy interventions or educational initiatives, offering not only theoretical insights but also practical pathways for enacting meaningful consumer protection and behaviour change.

Lastly, as appearance-driven motives remain potent even in the presence of regulatory warnings, future research endeavours should further examine how such motivations can be deconstructed or redirected through critical messaging and educational interventions. Understanding how to mitigate the persuasive power of appearance-based appeals is essential for advancing consumer protection in image-centric markets. Finally, future research should consider the broader ethical and policy implications of influencer marketing in health-related domains. Investigating frameworks for responsible digital marketing, particularly in relation to “glow-up” culture and self-optimisation trends, could inform regulatory approaches that better align with evidence-based health communication and consumer welfare.

5.5 Conclusion

Through a comprehensive literature review, quantitative experimental research, and in-depth analysis of the findings, this thesis uncovered several critical insights. While prior literature and the hypotheses derived from it overwhelmingly suggest that influencer endorsements are more persuasive and impactful than traditional brand advertising, the present study produced a strikingly divergent outcome. Contrary to dominant academic discourse, the results revealed that

branded advertising was significantly more effective than influencer marketing in fostering favourable consumer attitudes, enhancing product evaluations, and increasing purchase intentions for nutraceutical products. This discrepancy is a key finding, directly challenging widely accepted assumptions in the field.

Notably, the persuasive strength of influencer endorsements diminished sharply when consumers were made aware of regulatory concerns within the nutraceutical industry— an effect that was not observed with branded advertisements. This suggests that the perceived legitimacy and authority of established brands may provide a protective buffer in health-related markets. Moreover, appearance-based consumption motives emerged as a powerful predictor of both positive product evaluations and purchase intentions, often overriding ethical or regulatory concerns. This underscores the complex, context-dependent nature of advertising effectiveness in the health and wellness sector, highlighting the importance of accounting for product type, consumer motivation, and regulatory awareness when assessing digital marketing strategies.

By examining the psychological and behavioural mechanisms underpinning influencer marketing in the nutraceutical industry, this thesis offers a more refined understanding of digital persuasion in contemporary health consumption. It affirms the critical relevance of Social Cognitive Theory, Social Identity Theory, the Elaboration Likelihood Model, and Parasocial Interaction Theory in explaining how consumers process, trust, and respond to marketing in algorithmically mediated environments. In applying these theories to a largely unregulated digital domain, this research not only illustrates their utility but also reveals their limitations within attention-driven economies. As such, this thesis makes a foundational contribution at the intersection of marketing, psychology, and digital ethics. The goal of this thesis is in part to support public health advocacy in the age of social influence.

Beyond its empirical contributions, this research makes three theoretical contributions. First, it reconceptualises nutraceuticals not solely as health products but as symbolic instruments within a broader "glow-up" culture, where wellness, beauty, and social capital are deeply entangled. Second, it positions the pursuit of self-enhancement as a growing, globalised consumer mindset that transcends demographics and presents an emerging ethical vulnerability. Finally, it introduces the "glow-up" as a contemporary sociocultural construct deserving of serious

theoretical consideration. These insights expose the inadequacies of current regulatory frameworks and call for more psychologically informed and context-sensitive interventions. As influencer marketing continues to evolve, future research must urgently examine the emotional architecture of persuasion, particularly in industries that commodify health, identity, and aspiration.

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Appendices:

Appendix: Confirmation of Ethics Approval

(AUTEC)

9 April 2025

Sommer Kapitan

Faculty of Culture and Society

Dear Sommer

Re Ethics Application: **25/90 Examining the impact of influencer endorsements on consumer behaviour within the nutraceutical industry.**

Thank you for your responses to AUTEC's conditions.

Your ethics application has been approved for three years until 9 April 2028.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC.
2. All public facing documents must have the AUTEC approval number and be of a high standard of spelling and grammar. Dates on the Information Sheet(s) and Consent Form(s) must be consistent.
3. Any amendments to the project must be approved by AUTEC prior to being implemented.
4. A progress report is due annually on the anniversary of the approval date.
5. A final report is due at the expiration of the approval period, or, upon completion of project.
6. Any serious or adverse events must be reported to AUTEC, this includes unforeseen issues that might affect continued ethical acceptability of the project.
7. AUTEC grants ethical approval only. You are responsible for obtaining management permission for access from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

The application number and title need to be referenced on all correspondence related to this project.

All forms are available online http://www.aut.ac.nz/research/researchethics

For any enquiries, please contact the Secretariat at ethics@aut.ac.nz
(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: fgt0559@autuni.ac.nz

Auckland University of Technology, D-88, Private Bag 92006, Auckland 1142, New Zealand.
T: +64 9 921 9999 ext. 8316: E: ethics@aut.ac.nz: www.aut.ac.nz/researchethics