DEMOCRATIC AND POPULAR REPUBLIC OF ALGERIA

MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

ECOLE SUPERIEURE DE COMMERCE

A Thesis Submitted in Partial Fulfillment of the Requirements for

Master's Degree in Commercial Sciences

Specialty: Marketing & Communication

THE IMPACT OF SOCIAL MEDIA INFLUENCER OVER-ENDORSEMENT ON CONSUMER ENGAGEMENT AND PURCHASE INTENTION

Submitted by:

DJEMLI Hesna

BENABDALLAH Ismahen

Supervised by:

Dr. NECHOUD Lamia

Training address: Spotlight Agency, Hydra-Algiers. Algeria

Training period: from January 27 to May 05, 2026

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إهـــداء

لكلّ رحلة طويلة بداية هادئة لم يلحظها أحد، ونهاية تستحق أن تُهدى لمن كانوا سندها في الخفاء.

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الحمد لله حتى يبلغ الحمد منتهاه

جملي حسناء

DEDICATION

In the name of Almighty Allah, the Most Gracious, the Most Merciful.

There are paths in life we choose, and others that seem to choose us long before we understand why. Looking back upon my journey, I cannot help but see the subtle hand of destiny woven through every step, every setback, and every triumph. As the famous saying, «***What is meant for you will reach you even if it lies beneath two mountains »***

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List of Abbreviations

Abbreviation	Full Form
AVE	Average Variance Extracted
β (Beta)	Standardized Path Coefficient in PLS-SEM
CE	Consumer Engagement
CI	Confidence Interval
COBRAs	Consumers' Online Brand-Related Activities Framework
CON1–CON2	Consumer Engagement : Consumption Behavior Items
CRE1	Consumer Engagement : Creation Item
CRE2	Consumer Engagement : Creation Behavior Item
CTB1–CTB3	Consumer Engagement : Contribution Behavior Items
DM	Digital Marketing
DV1	First Dependent Variable : Consumer Engagement
DV2	Second Dependent Variable : Purchase Intention
e-WOM	Electronic Word-of-Mouth
ESC	École Supérieure de Commerce
f^2	Effect Size Coefficient in PLS-SEM
H1–H7	Research Hypotheses 1 through 7
HTMT	Heterotrait-Monotrait Ratio of Correlations
IC	Influencer Credibility
IC1–IC3	Influencer Credibility Measurement Items
ICT	Information and Communication Technologies
IOE	Influencer Over-Endorsement
IOE1–IOE4	Influencer Over-Endorsement Measurement Items
IV	Independent Variable
M	Mediating Variable
MAE	Mean Absolute Error
PI	Purchase Intention
PI1–PI3	Purchase Intention Measurement Items
PKM	Persuasion Knowledge Model
PLS-SEM	Partial Least Squares Structural Equation Modeling
PLSpredict	Predictive Power Assessment Procedure in SmartPLS
PSI	Parasocial Interaction Theory
PSR	Parasocial Relationship
PSR1–PSR9	Parasocial Relationship Measurement Items
PSR×IC	Interaction Term : Moderating Effect of PSR on IC–Outcome Relationships
Q^2predict	Predictive Relevance Coefficient
R^2	Coefficient of Determination
rho_A	Dijkstra-Henseler Reliability Coefficient
rho_C	Composite Reliability Coefficient
RMSE	Root Mean Squared Error
SCT	Source Credibility Theory
SEM	Structural Equation Modeling
SMM	Social Media Marketing
SMPs	Social Media Platforms
SOR	Stimulus-Organism-Response Model
SPSS	Statistical Package for the Social Sciences

SQ1	Screening Question 1 : Influencer Exposure Filter
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UGC	User-Generated Content
VIF	Variance Inflation Factor
W	Moderating Variable
WOM	Word-of-Mouth

Abstract

This dissertation examines the effect of influencer over-endorsement on consumer engagement and purchase intention among Algerian social media users, while considering the mediating role of influencer credibility and the moderating role of parasocial relationship. In a context where influencer marketing is increasingly used by brands. This research investigates whether the phenomenon of influencer over-endorsement erodes perceived influencer credibility and, through this erosion, depresses consumer engagement and purchase intention.

A conceptual model was developed to test the direct effect of influencer over-endorsement on influencer credibility, the effects of influencer credibility on consumer engagement and purchase intention, as well as the mediating role of credibility and the moderating role of parasocial relationship. The study follows a quantitative methodology based on an online bilingual questionnaire administered to 204 Algerian social media users. The data were analyzed using SPSS 26 and SmartPLS 4 through PLS-SEM.

The results show that influencer over-endorsement has a negative effect on influencer credibility. Influencer credibility, in turn, positively affects both consumer-engagement and purchase intention. The findings also confirm that influencer credibility fully mediates the relationship between influencer over-endorsement and both consumer engagement and purchase intention. However, parasocial relationship does not significantly moderate these relationships, although it has a direct effect on consumer outcomes. This study highlights the importance of maintaining influencer credibility through selective and authentic brand partnerships.

Keywords: Influencer Marketing, Over-Endorsement, Influencer Credibility, Consumer Engagement, Purchase Intention, Parasocial Relationship.

Résumé

Ce mémoire étudie l'effet du sur-endorsement des influenceurs sur l'engagement du consommateur et l'intention d'achat auprès des utilisateurs algériens des réseaux sociaux, en intégrant le rôle médiateur de la crédibilité de l'influenceur et le rôle modérateur de la relation parasociale. Dans un contexte où le marketing d'influence est de plus en plus utilisé par les marques, cette recherche vise à comprendre si la promotion excessive de marque peut affaiblir la crédibilité de l'influenceur et influencer les réactions des consommateurs.

Un modèle conceptuel a été développé afin de tester l'effet direct du sur-endorsement sur la crédibilité de l'influenceur, les effets de cette crédibilité sur l'engagement du consommateur et l'intention d'achat, ainsi que son rôle médiateur. Le rôle modérateur de la relation parasociale a également été examiné. L'étude repose sur une méthodologie quantitative basée sur un questionnaire en ligne bilingue administré auprès de 204 utilisateurs algériens des réseaux sociaux. Les données ont été analysées à l'aide de SPSS 26 et SmartPLS 4 selon l'approche PLS-SEM.

Les résultats montrent que le sur-endorsement des influenceurs affecte négativement la crédibilité perçue de l'influenceur. Cette crédibilité influence à son tour positivement l'engagement du consommateur et l'intention d'achat. Les résultats confirment également que la crédibilité de l'influenceur joue un rôle de médiateur total dans ses relations. En revanche, la relation parasociale ne modère pas significativement ses relations, bien qu'elle exerce un effet direct sur les réactions des consommateurs. Cette recherche souligne l'importance de préserver la crédibilité de l'influenceur à travers des partenariats de marque sélective et authentique.

Mots-clés : Marketing d'influence, Sur-Endorsement, Crédibilité de l'influenceur, Engagement du consommateur, Intention d'achat, Relation Parasociale.

Chapter 1: Introduction

Chapter 1: Introduction

Introduction

The digital revolution has fundamentally reshaped the landscape of marketing communication. Social media platforms Instagram, TikTok, YouTube, and their counterparts have given rise to a new breed of marketing actors: influencers (Dwivedi et al., 2021). These individuals, who have cultivated large and often loyal online audiences, have become indispensable partners for brands seeking authentic, targeted, and cost-effective ways to reach customers. Influencer marketing has grown from a niche tactic into a multi-billion-dollar industry, with global spending exceeding $21 billion in 2023 (Influencer Marketing Hub, 2023). Brands across sectors fashion, food, technology, and beauty increasingly rely on influencers not merely to promote products, but to build meaning, trust, and community around them.

Yet this rapid commercialization of influencer culture has introduced a paradox. As influencer marketing has become more lucrative, many influencers have responded by multiplying their brand collaborations, endorsing an ever-growing number of products across increasingly diverse categories. This phenomenon referred to in the academic literature as influencer over-endorsement (Arora et al., 2022; Cheah et al., 2024) raises fundamental questions about credibility and trust. When a single influencer simultaneously promotes numerous brands within a short period, can their followers still perceive them as genuine? Do consumers continue to engage with, and buy from, an influencer whose feed reads more like an advertising catalog than a personal narrative?

These questions matter because the entire value proposition of influencer marketing rests on credibility. Unlike traditional advertising, influencer marketing derives its power from the perception that recommendations come from a real, knowledgeable, and trustworthy person rather than a faceless corporation (Freberg et al., 2011). Credibility, encompassing expertise, trustworthiness, and attractiveness, is the mechanism through which influencer communication translates into consumer attitudes and behaviors (Ohanian, 1990). When credibility erodes, so too does the influencer's capacity to drive engagement and purchase intention. Understanding what threatens credibility is therefore not merely an academic exercise, it is a pressing practical concern for brands, marketers, and influencers themselves.

Alongside credibility, another psychological dimension shapes how consumers respond to influencers: the parasocial relationship (PSR). Coined by Horton and Wohl (1956) and later extensively studied in the context of social media, parasocial relationships refer to the one-sided emotional bonds that audiences form with media figures bonds that feel genuine and intimate

despite being entirely non-reciprocal. Research has shown that strong parasocial relationships with influencers enhance perceived credibility, trust, and positive brand attitudes among consumers (Reinikainen et al., 2020), while also contributing to stronger purchase intentions in influencer marketing contexts (Sokolova & Kefi, 2020). Critically, however, parasocial relationship may also moderate how consumers process and respond to credibility signals, meaning that the same credibility cue may have very different behavioral effects depending on how emotionally bonded a follower feels toward the influencer. This moderating role of PSR remains underexplored in the literature and constitutes one of the central theoretical motivations for the present study.

The academic study of influencer marketing has grown considerably over the past decade. Scholars have examined influencer characteristics (Lou & Yuan, 2019), disclosure practices (Evans et al., 2017), audience responses (De Veirman et al., 2017), and the role of credibility in shaping consumer outcomes (Djafarova & Rushworth, 2017). However, several important blind spots remain. While the concept of multiple brand endorsements has long been studied in the context of celebrity marketing (Tripp et al., 1994; Amos et al., 2008), its digital-era counterpart influencer over-endorsement has received far less systematic investigation. The mechanisms through which excessive endorsements erode consumer perceptions, and specifically how this erosion travels through credibility to shape engagement and purchase behavior, remain theoretically underdeveloped. Similarly, most studies treat parasocial relationships as a direct driver of consumer outcomes, rather than as a boundary condition that amplifies or attenuates the effects of credibility.

Yet within this rapidly evolving landscape, the phenomenon of over-endorsement has become increasingly visible and openly criticized. Algerian social media communities frequently question the credibility of influencers who appear to promote every brand that reaches out to them, raising concerns that resonate with broader global debates about commercial saturation in the influencer space. Despite the relevance and urgency of these dynamics, academic research on influencer marketing in Algeria is virtually nonexistent. Existing marketing scholarship in emerging digital contexts has traditionally focused on brand image, advertising, and general consumer behavior, while comparatively less attention has been devoted to the mechanisms of social media influence and influencer marketing (Dwivedi et al., 2021). Transplanting conclusions from Western or East Asian studies without empirical verification in the Algerian context carries real methodological risks, given differences in cultural values, media trust, purchasing power, and the specific nature of local influencer culture.

1.1 Study Context

This study focuses on Algerian social media users who follow and interact with influencers across platforms such as Instagram, TikTok, and YouTube. The Algerian influencer marketing ecosystem has developed rapidly in recent years, driven by increasing smartphone penetration, affordable mobile data, and a predominantly young population with high social media literacy. Algerian influencers ranging from lifestyle creators and beauty bloggers to food reviewers and sports figures have increasingly attracted brand partnerships from both local companies and multinational corporations. At the same time, the phenomenon of over-endorsement has become visible and often criticized within Algerian online communities, where followers openly question the authenticity of influencers who appear to promote every brand that reaches out to them. This social reality provides a rich and empirically relevant backdrop for the present research.

1.2 Research Objectives

The primary objective of this study is to analyze whether influencer over-endorsement undermines influencer credibility, and to examine how this credibility once shaped by endorsement behavior influences consumer engagement and purchase intention among Algerian social media users, while accounting for the moderating role of parasocial relationship.

More specifically, this research pursues four objectives:

- To evaluate the extent to which influencer over-endorsement affects influencer credibility among Algerian social media users.
- To examine whether influencer credibility mediates the relationship between over-endorsement and consumer engagement.
- To examine whether influencer credibility mediates the relationship between over-endorsement and purchase intention.
- To assess whether parasocial relationship moderates the effect of influencer credibility on consumer engagement and purchase intention.

Through this analysis, this study aims to contribute both to the academic literature on influencer marketing and to provide actionable insights for brands and content creators operating in the Algerian digital market.

1.3 Research Questions

Grounded in the theoretical and the contextual discussion above, the central research question guiding the study is as follows:

Does influencer over-endorsement affect consumer engagement and purchase intention among Algerian social media users, and what roles do influencer credibility and parasocial relationship play in this relationship?

From this central question, four sub-questions are derived to guide the empirical investigation:

Q1: Does influencer over-endorsement have a significant effect on influencer credibility?

Q2: Does influencer credibility mediate the relationship between influencer over-endorsement and consumer engagement?

Q3: Does influencer credibility mediate the relationship between influencer over-endorsement and purchase intention?

Q4: Does parasocial relationship strength moderate the relationships between influencer credibility and consumer engagement, and between influencer credibility and purchase intention?

1.4 Research Hypotheses

Based on the theoretical framework and the research questions outlined above, the following hypotheses are formulated to structure the empirical analysis:

H1: Influencer over-endorsement has a significant negative effect on influencer credibility.

H2: Influencer credibility has a significant positive effect on consumer engagement.

H3: Influencer credibility has a significant positive effect on purchase intention.

H4: Influencer credibility mediates the relationship between influencer over-endorsement and consumer engagement.

H5: Influencer credibility mediates the relationship between influencer over-endorsement and purchase intention.

H6: Parasocial relationship moderates the relationship between influencer credibility and consumer engagement, such that this relationship is stronger when parasocial relationship is high.

H7: Parasocial relationship moderates the relationship between influencer credibility and purchase intention, such that this relationship is stronger when parasocial relationship is high.

1.5 Research Methodology

The methodology adopted in this research follows a two-stage approach combining a thorough review of the academic literature with a quantitative empirical study.

In the first stage, a review of the existing literature was conducted to clarify the conceptual nature of the key variables: influencer over-endorsement, influencer credibility, consumer engagement, purchase intention, and parasocial relationship, and identify the theoretical mechanisms linking them. This review informed the construction of the conceptual model and guided the formulation of the research hypotheses.

In the second stage, a quantitative survey was administered to a sample of Algerian social media users who regularly follow influencers. Data collection relied on a structured questionnaire distributed via Google Forms, incorporating validated measurement scales adapted from the influencer marketing and consumer behavior literature. Given the absence of a comprehensive sampling frame, a non-probability sampling approach was employed, combining convenience sampling with snowball sampling to maximize reach across Algerian online communities via Facebook, Instagram, and WhatsApp. Data were analyzed using Structural Equation Modeling (SEM) with SmartPLS, a partial least squares approach particularly well-suited to exploratory research and behavioral contexts (Hair et al., 2017).

1.6 Structure of the Dissertation

This dissertation is organized into five main chapters:

Chapter 1: Introduction: Presents the research context, the problem statement, the research objectives and questions, the hypotheses, the methodology, and the overall structure of the dissertation.

Chapter 2: Literature Review: Synthesizes the key theoretical contributions relating to the five central constructs: influencer over-endorsements, influencer credibility, consumer engagement, purchase intention, and parasocial relationship and establishes the theoretical foundations for the conceptual model and hypothesis.

Chapter 3: Research Methodology: Describes the empirical research design in detail, including the study context, the operationalization of constructs, the measurement instruments, the sampling procedure, and the data collection process.

Chapter 4: Results and Discussion: Presents the statistical analysis of the collected data using SmartPLS and SPSS, tests the research hypotheses, and interprets the findings in light of the theoretical framework and the Algerian context.

Chapter 5: Conclusion: Summarizes the key contributions of the study, acknowledges its limitations, and processes both practical recommendations for brands and influencers and directions for future academic research.

References: contains the complete bibliography of academic sources cited throughout the dissertation.

Chapter 2: Literature Review

Chapter 2: Literature Review

Introduction

This chapter analyzes the theoretical and empirical literature that underpins the study of influencer over-endorsement and its impact on consumer behavior. It is structured into six primary divisions. Section 1 examines influencer marketing on social media, including the definition and classifications of influencers and their influence on consumer behavior. Section 2 defines influencer over-endorsement as the independent variable, distinguishes it from traditional endorsement and methods of influencer endorsement, and emphasizes the key empirical studies in the field. Section 3 analyzes influencer credibility as the mediating variable, detailing its theoretical foundation and operational characteristics. Sections 4 and 5 analyze customer engagement and purchase intention as the two dependent variables. Section 6 examines parasocial relationships as the moderating variable. The chapter concludes by delineating the research gaps in the literature, articulating the conceptual framework, and offering a brief overview of the chapter.

2.1 Social Media Influencer (SMI) Marketing

2.1.1 Definition of Social Media Influencers

Social media influencers are now dominant players in the marketing world in today's digital age. Not only do they have a substantial presence online, but they also influence how consumers think, feel, and act. Influencers can change the perceptions of consumers and the purchasing decision-making process through entertaining and convincing content, even more so than traditional advertising (Joshi et al., 2025).

Freberg et al. (2011) define influencers as independent third-party endorsers who shape audience attitudes through digital platforms such as blogs and social media posts. Their views have a major impact on how people view brands.

Influencers are considered personal brands as well. Abidin (2016) refers to them as micro-celebrities who tactically expose themselves daily to garner attention and sustain engagement. It tightens their bonds with followers and bolsters their persuasive abilities.

Influencers, from a marketing perspective, are opinion leaders for specific niches. De Veirman et al. (2017) argue that their trustworthiness, knowledge, and level of exposure enable them to influence what consumers want and what they want to purchase.

In addition, influencers become digital opinion leaders, endorsing products and telling stories on different channels. Damian Ryan (2014) also states that their impact is a function of variables such as perceived authenticity, attractiveness, size of the audience, and relationship with followers.

Overall, influencers can be described as digital personalities that leverage their online presence and credibility to impact the attitudes and behaviors of consumers and thus have become integral in contemporary marketing actions.

2.1.2 Social Media Influencers Versus Traditional Celebrities

The distinction between social media influencers (SMIs) and traditional celebrities is a significant area of interest in influencer marketing research. Although both can affect consumer behavior, they do so through different psychological routes. For instance, SMIs are seen as more relatable than traditional celebrities, who are more aspirational. This has consequences on how to understand what makes over-endorsement particularly harmful for SMI.

Traditional celebrity endorsements have long been used by marketers to increase brand equity and influence consumers' attitudes, brand recall and purchase intentions. Factors such as attractiveness, credibility, expertise, and trustworthiness were related to the success of influencer marketing (Ohanian, 1990; Amos et al., 2008; Bergkvist & Zhou, 2016).

Schouten et al. (2020) demonstrated that influencer endorsements tend to generate more favorable attitudes toward the ad, the product and the intention to purchase than celebrity endorsements. This advantage can be attributed to three factors: a greater perceived similarity between the influencer and his or her followers, more credibility in particular areas and a closer match between the product and the endorser. Djafarova and Rushworth, (2017) found that young female consumers regard influencers as more trustworthy than celebrities in fashion and beauty industries.

In addition, Hess et al. (2022) highlight that parasocial relationships, or one-sided emotional connections, with influencers are core to SMIs, but less for celebrities. Since SMIs depend on authentic relational bonds, too many commercial collaborations will breach this implicit “relationship contract”, resulting in a decline in trust and engagement in a manner that is not mirrored with celebrity over-endorsement.

2.1.3 Types of Social Media Influencers

Social media influencers can be categorized into different types based on their audience size, level of visibility, and relationship with followers. This classification helps marketers better understand the strategic value of each influencer category.

Table 1:Influencer Tier Classification System

Type	Number of followers	Key characteristics	Marketing value
Mega influencer	+1M	Social media-born celebrities, large audiences, strong online presence.	Broad exposure and high visibility
Macro influencer	100K-1M	Niche experts, professional content creators, balanced engagement.	Good balance between reach and engagement
Micro influencers	10K-100K	High authenticity, closer relationships with followers	Strong trust and persuasive power
Nano influencer	Less than 10k	Very personal communication, highly relatable, strong interaction	Highest engagement and perceived authenticity

Source: Adapted from Campbell & Farrell (2020)

Social media influencers are commonly classified into four categories: mega, macro, micro and nano influencers, based on their number of followers and level of influence. Mega influencers offer extensive reach and visibility, making them effective for increasing brand awareness. Macro influencers provide a balance between audience size and engagement, while micro and nano influencers are characterized by higher levels of authenticity, stronger relationships with followers, and greater engagement rates. This classification suggests that influencer effectiveness is not solely determined by audience size but also by credibility and relational closeness with the audience.

2.1.4 The role of influencer marketing in consumer behavior

Influencer marketing has emerged as a powerful mechanism shaping consumer behavior in the digital environment. The effectiveness of this marketing approach rests on the ability of social media influencers to persuade, engage, and psychologically connect with their audiences across multiple dimensions.

2.1.4.1 Persuasion and Purchase Intention

Influencer marketing significantly affects consumer purchase intentions. When influencers perceived as credible, attractive, and expert, this can shape consumer attitudes and increase

their willingness to buy products (Cheah et al.,2024). Additionally, a strong fit between the influencer and the promoted product enhances credibility and strengthens consumer behavioral intentions towards the brand (Breves et al., 2019).

2.1.4.2 Parasocial Relationships and Psychological Influence

Influencer marketing also works through psychological connections. Followers often develop parasocial relationships with influencers, creating emotional bonds that influence purchase intention, electronic word-of-mouth (e-WOM), and impulse buying (Hwang et al.,2018).

2.1.4.3 Social Network and Content Engagement

Influencers' choice of platforms and content type influences consumer engagement. Informative and entertaining content such as tutorials and reviews can increase brand engagement and followers trust (Lou & Yuan, 2019). High-quality and original content also reinforces influencer's opinion leadership (Casaló et al., 2018).

2.1.4.4 Sponsorship Disclosure and Consumer Trust

Transparency regarding sponsored content is essential in influencer marketing. Proper disclosure of paid partnership helps consumers recognize advertising and can positively influence purchase intention and brand recall (Boerman, 2019). However, poorly presented disclosure may lead to negative attitudes toward both the influencer and the brand (Reijmersdal et al., 2022)

2.1.5 Influencer Marketing in Algeria and the MENA Region

The MENA region is experiencing strong digital growth, but it remains underrepresented in academic research on influencer marketing. In Algeria, the increasing use of the internet and social media has created new opportunities for influencer marketing, especially among young users.

Table 2:Algeria's digital market: key indicators

Indicators	Details
Population	47.6 million (October 2025); median age ≈ 28.6 years
Internet users	37.8 million (79.5% penetration), majority access via mobile
Active social media users	27.5 million (57.7% of population)
Facebook users	27.5 million (≈57.7% reach), dominant platform across demographics

Instagram	13.5 million (≈28.4% reach), strong growth among 18–34 age group
TikTok	24.8 million (≈65.4% of internet users), high engagement among youth (15–24)
YouTube Users	25.4 million (≈53.4% of population)

Source: DataReportal. (2026). Digital 2026: Algeria. Retrieved April 9, 2026, at 11:10

In the Algerian context, the relationship between consumers and social media influencers is complex. While influencers have the potential to shape consumer opinions and purchasing decisions through their content, research suggests that Algerian consumers hold notably critical attitudes toward local influencers. Zemmouri and Bouchiara (2025) found that young Algerian social media users frequently associate the term "influencer" with a lack of credibility, meaningful content, and intellectual depth, often contrasting Algerian influencers unfavorably with their foreign counterparts. Participants in their study described excessive commercial content and the absence of clear expertise as primary drivers of this negative perception. These findings suggest that, in the Algerian market, influencer credibility cannot be assumed, it must be actively earned and maintained through authentic, domain-consistent content.

Despite the growing importance of influencer marketing in Algeria, academic research on this topic is still limited, especially regarding its impact on consumer behavior and engagement.

2.2 Influencer Over-Endorsement

2.2.1 Influencer Endorsement

2.2.1.1 Definitions of Influencer Endorsement

Traditionally, an endorser is defined as a person who uses their public recognition to promote a product (McCracken, 1989). The effectiveness of endorsement is explained by key theoretical models. The Meaning Transfer Model suggests that cultural meanings associated with the endorser, such as lifestyle or status, are transferred to the product and ultimately to the consumer. Similarly, the source credibility model emphasizes that an endorser's impact depends on the perceived expertise and trustworthiness (Erdogan, 1999). Influencer endorsement is like traditional celebrity endorsement, but it moves from mass media to social media sites where people build their impact by making content and interacting with their followers.

In the digital context, influencer endorsement focuses on content creators who build personal brands and attract followers by producing relevant and relatable content. Their influence goes beyond visibility, as they integrate products into their daily lives and communicate them in a

more authentic and engaging way. The effectiveness of influencer endorsement is further shaped by psychological and relational mechanisms. Consumers evaluate the motives behind endorsements and are more receptive when they believe the influencer genuinely likes the product, however, perceived commercial intent may reduce credibility (Silvera & Austad, 2004). This is explained by the Persuasion Knowledge Model, which suggests that consumers may resist messages recognized as marketing tactics (Friestad & Wright, 1994).

Moreover, influencer endorsement relies on relational capital, as followers often develop trust-based connections. Message value, particularly informativeness and entertainment, also influences trust (Lou & Yuan, 2019). Finally, authenticity remains essential for maintaining long-term credibility (Audrezet et al., 2020).

2.2.1.2 Types of influencer-brand collaboration

Influencer marketing includes a wide range of collaboration formats.

Table 3:Types of influencer-brand collaboration

Collaboration type	Description	Duration & Scope
One-Off Sponsored Post	Single paid post with #ad disclosure	Short-term, minimal integration
Ongoing Partnership	Multiple posts over 3–12 months with deeper brand messaging	Medium-term, recurring content
Brand Ambassadorship	Long-term role (1–3 years) with lifestyle integration	Long-term, high integration
Affiliate Marketing	Performance-based commission per sale through referral links	Variable, performance-driven
Co-Creation / Collaboration	Participation in product design or strategy	Project-based, deep integration
Product Gifting	Free products sent without formal payment, disclosure optional	Informal, ad hoc

Source: Authors' own elaboration

2.2.1.3 Types of influencer collaboration strategies

Four main strategies are identified:

- Niche Congruence: Endorsement aligns with the influencer content domain, which maximizes product endorser fit and minimizes over-endorsement risks. Micro and nano influencers often follow this naturally (De Veirman et al., 2017; Kay et al., 2020).
- Volume Diversification: Influencers endorse diverse, unrelated categories to maximize revenue. While economically rational, this increases over-endorsement risk and reduces perceived authenticity and credibility (Cheah et al., 2024).
- Selective Transparency: Influencers explain why they select or decline partnerships, mitigating the negative impact of commercial content. This aligns with cultural expectations of honesty, particularly in Algeria (Audrezet et al., 2020; Stubb et al., 2019).
- Co-Creation Partnership: Deep collaborations with a limited number of brands (product development, co-created content) generate the highest authenticity and lowest over-endorsement risk. Available mainly to influencers with strong market power, this strategy also produces earned media (Campbell & Farrell, 2020).

2.2.2 Influencer Over-Endorsement

2.2.2.1 Origins and Background of Over-Endorsement

Influencers on social media did not start the over-endorsement issues. The classic literature on celebrity endorsement reveals the conceptual origins of the issues, where researchers initially noted the diminishing returns of excessive brand partnerships. The first systematic empirical study of multiple endorsement problems was carried out by Tripp et al., (1994), who used two experimental studies to show that consumers' perceptions of celebrity likeability and credibility decline as the number of products they endorse rises. The commercial value of any endorsement relationship is limited by the total number of concurrent endorsement relationships the endorser maintains. This finding, which was derived from the print advertising context of the early 1990s, established a fundamental empirical principle that would later prove important to understanding influencer marketing.

The transition from celebrity over-endorsement to influencer over-endorsement resulted in numerous theoretically important differences. Traditional celebrities gain public recognition for their performances, talents, or accomplishments in their field, and their endorsement value remains relatively constant regardless of how many brand partnerships they have because it is based on their existing fame (Schouten et al.,2020). The parasocial connection with followers provides a unique form of endorsement value for social media influencers, since it is based on the perception of genuine, non-commercially motivated content production (Hess et al., 2022;

Horton et al., 1956). This contrast is critical, an influencer's credibility is particularly vulnerable to over-endorsement since it is based on perceived authenticity, but a celebrity's credibility is relatively resistant to commercial overexposure because it is not. Over-endorsement has emerged as a significant structural risk for the industry as influencer marketing has matured from individual brand partnerships to multi-brand and multi-category endorsement portfolios (Cheah et al., 2024; Arora et al., 2022).

2.2.2.2 Definition of Influencer Over-Endorsement

Academic literature has several definitions of over-endorsement, each representing a different theoretical tradition and empirical setting. Erdogan (1999) defined the phenomenon as cognitive saturation, or the weakening of meaning and persuasive power due to too many brand connections. Tripp et al., (1994) initially observed that as the number of recommended items grows, consumers' opinions of the endorser's credibility and likeability decline.

Friestad and Wright (1994) proposed a cognitive mechanism to explain this behavior. When consumers detect excessive commercial purpose, their persuasion knowledge is activated, resulting in skepticism, which serves as a psychological shield against attempts to influence. Audrezet et al., (2020) reframed the question in the SMI framework of authenticity management, arguing that over-endorsement has the significant disadvantage of signaling that recommendations are driven more by profit than genuine purpose.

Arora et al. (2022) made a methodologically significant contribution by operationalizing over-endorsement as a perceptual construct defined as the consumer's subjective judgment that an influencer has partnered with too many brands in terms of both frequency and diversity, rather than an objective behavioral threshold, which was validated using a four-item scale. Building directly on this definition, Cheah et al. (2024) define SMI over-endorsement as a consumer's perception that a social media influencer promotes an excessive number of brands, demonstrating that such perceptions erode authenticity and credibility, undermining purchase intentions. The current dissertation uses this perceptual measurement, seeing over-endorsement as a consumer judgment rather than an objective brand behavior.

2.2.2.3 Influencer Over-Endorsement Versus Standard Influencer Endorsement

To understand over-endorsement, one has to contrast it with the traditional influencer endorsement. The two phenomena are not opposites, but rather exist on a continuum, with what is acceptable or too much being defined by consumer perceptions. Table 4 shows this comparison.

Table 4:Comparison between Influencer Over-Endorsement and Standard Influencer Endorsement

Dimension	Standard influencer endorsement	Influencer over-endorsement
Frequency	Selective, limited number of brands per period, strategic spacing between sponsored posts	Excessive, multiple sponsored posts per week, back-to-back brand promotions across diverse categories.
Brand diversity	Congruent with the influencer's content niche and personal identity, perceived as a genuine alignment.	Incongruent, influencer promotes unrelated brands across multiple product categories simultaneously.
Consumer perception of motivation	Genuine product belief; passion-driven recommendation; organic integration of brand into content.	Financial motivation inferred, commercial intent transparent and primary, followers question genuine product use.
Perceived authenticity	High: Followers perceive endorsements as an extension of the influencer's genuine identity and values.	Low: repeated exposure to diverse paid partnerships triggers authenticity erosion (Audrezet et al., 2020).
Credibility effect	Positive: each endorsement reinforces expertise and trustworthiness within the influencer's niche.	Negative: credibility diluted across categories; expertise claims become implausible (Cheah et al., 2024).
Consumer engagement	High: followers actively engage with sponsored content through likes, comments, saves, shares.	Declining: engagement fatigue sets in; sponsored posts receive significantly lower interaction rates.
Purchase intention effect	Positive, credible, and congruent endorsements drive purchase intention through trust and identification.	Negative: mediated reduction through credibility erosion (Cheah et al., 2024; $\beta = -0.391$)
Brand Risk for Sponsoring Brands	Low-moderate: The brand benefits from the influencer's authentic association and engaged audience.	High: Brand association with a perceived 'sellout' influencer risks negative spillover to brand equity.

Source: Adapted from Tripp et al. (1994); Audrezet et al. (2020); Arora et al. (2022); Cheah et al. (2024); Friestad & Wright (1994)

An important differentiation between typical endorsement and over-endorsement is related to how consumers process the influencer's motives. When influencers are endorsing just a few items and those items align with their content, followers are more likely to view the Sponsored post as genuine product appreciation. In this instance, the endorsement becomes more credible as consumers believe the influencer really believes in the product (Silvera & Austad, 2004).

But when these influencers start promoting too many brands at the same time, the interpretation changes. With over-endorsement, followers can feel like recommendations are driven by business instead of passion. This activates consumers' persuasion knowledge (Friestad et al., 1994) and makes them understand that the message is advertising as opposed to a genuine recommendation. On the other hand, the influencer-follower relation can take a turn from parasocial friendship to commercial relationship (Sokolova & Kefi, 2020).

This process can be explained by the Stimulus–Organism–Response model (Mehrabian & Russell, 1974). Within this framework, over-endorsement is the source of negative impact on consumers' self-internalization, which is related to perceived authenticity and influencer credibility. These perceptions, in turn, drive consumer behavior including engagement and purchase intentions. In addition, based on McCracken's (1989) Meaning Transfer Model, the negative images associated with over-endorsement can be transferred to the endorsed brands and erode brand equity.

Followers might be willing to endure more brand collaborations from macro-influencers, while the same behavior from nano-influencers may be too fast to be interpreted as over-endorsement.

2.2.2.4 Influencer Over-Endorsement in Marketing Research

2.2.2.4.1 The Anchor Study: Cheah, Koay, and Lim (2024)

The empirical research of Cheah, Koay, and Lim (2024) stands among the most comprehensive studies on influencer over- endorsement. This study, which appeared in the Journal of Retailing and Consumer Services, applied a moderated-mediation model and was tested using PLS-SEM on a number of 303 users from the United States.

The main implication of this study is that over-endorsement does not have a significant impact on purchasing intention ($\beta = -0.041$, $p = 0.247$). Rather, the adverse impact is indirect through credibility. Specifically, over-endorsement has a significant negative impact on influencer

credibility ($\beta = -0.391$, $p < 0.001$), and subsequently, on consumers' purchasing intentions. This finding demonstrates that credibility plays a pivotal role as the channel through which excessive brand collaborations impact consumers' responses.

Although it raises interesting results, it isn't without limitations that warrant further research. First, the study was only conducted in the U.S., and thus the findings may not be generalizable to other contexts (e.g., Algeria where patterns of social media use and culture differ). Second, the research was restricted to a single behavioral outcome, purchase intention, and did not investigate consumer engagement. Third, there was no analysis of the moderating effects of parasocial relationships. The current study fills these gaps by investigating over-endorsement in Algeria context with an additional outcome variable 'consumer engagement' and introducing the strength of parasocial relationship as a moderating variable.

2.2.2.4.2 Scale development: Arora et al (2022)

Arora et al., (2022) proposed a first of its kind validated scale to measure the consumer-perceived influencer over-endorsement. The study published in International Journal of strategic Communication, followed a rigorous multi-stage process for scale development and validation, which comprised item generation, expert evaluation, pilot study and confirmatory factor analysis.

The final 4-item scale shows excellent psychometric properties, such as very good internal reliability (α=0.916), high convergent validity (AVE=0.798) and the values exceeded the recommendations proposed by Hair et al. (2019). Of note is that the scale assesses perceived over-endorsement and is concerned with how followers make sense of the influencer's behavior and not with the actual number of brand affiliations.

This perceptual approach is especially suitable for survey-based studies, as it is a consumer-driven perception at work and not tangible endorser counts. The scale, therefore, is used in the present study to assess the independent variable, without any changes. It was also validated by Cheah et al. (2024) bolstering the appropriateness of using it in this study.

2.3 Influencer Credibility (Mediator)

2.3.1 Origins and Theoretical Foundation

Source credibility is one of the oldest and most consistently studied constructs in communication and persuasion research. Its theoretical roots trace back to Aristotle's Rhetoric, in which he identified ethos "the credibility of the speaker" as one of the three primary modes of persuasion alongside logos "logical argument" and pathos "emotional appeal». Aristotle

describes ethos as consisting of three qualities: phronesis, meaning practical wisdom and competence; arete, meaning moral virtue and honesty; and eunoia, meaning goodwill toward the audience. The structural parallel between these qualities and what contemporary scholars measure as expertise, trustworthiness, and appeal is not coincidental: it reflects an enduring psychological reality about how audiences evaluate the people who try to persuade them.

The earliest rigorous empirical examination of source credibility was conducted by Hovland and Weiss (1951), who found that identical messages generated significantly stronger attitude change when they were associated with highly credible sources compared to those linked to low-credibility sources. This study introduced a key insight: not only the content of the message but also the credibility of its source plays a critical role in persuasion. Additionally, Hovland and Weiss identified the sleeper effect, suggesting that the initial persuasive impact of a credible source diminishes over time as audiences gradually separate the message from its origin. Subsequently, Hovland et al. (1953) Further developed this concept by proposing a two-dimensional model of source credibility in their influential work "communication and Persuasion", highlighting expertise and trustworthiness as its fundamental dimensions. These components have since served as the cornerstone for subsequent research on credibility.

McGuire (1969) expanded the framework by introducing a source attractiveness dimension, arguing that a communicator's physical appeal, likeability, and perceived similarity to the audience also influence persuasion outcomes. Where Hovland et al.'s (1953) model focused on cognitive routes to persuasion through competence and honesty, McGuire's (1969) contribution captured affective and identification-based mechanisms. Ohanian (1990) synthesized these streams of research into a single validated instrument, the source credibility scale, which measures trustworthiness, expertise, and attractiveness through 15 semantic differential items. Ohanian validated the scale through a multi-stage psychometric process involving item generation, expert review, and confirmatory factor analysis, producing a tool that has since been replicated across decades of advertising and endorsement research. It remains the most widely applied credibility scale in marketing literature.

2.3.2 Theoretical Framework Adopted for This Study

This research is based on Ohanian's (1990) Source Credibility Model as its theoretical lens but diverges from multi-dimensional conceptualizations of the model by conceptualizing influencer credibility as a holistic, one-dimensional construct. This method is consistent with Cheah et al., (2024), whose anchor study assessed credibility using three items 'This influencer is trustworthy', 'This influencer is honest' and 'This influencer is an expert on the topic' and

treated them as a singular reliable factor (α = 0.887, AVE = 0.731). While these items reflect both the trustworthiness and expertise dimensions of Ohanian's scale, they are not modelled as two distinct factors. They capture a follower's holistic evaluation of whether the influencer is trustworthy and authoritative as a source.

This one-dimensional conceptualization of endorsement is conceptually valid in light of the over-endorsement effect. When a follower processes an influencer who endorses too many products, they don't recompute their two trust scores, their trust score and their expertise score. The two signals collapse into a singular signal: you can't trust this influencer. Inferences of financial motivation (thereby reducing trustworthiness) and domain competence (thereby reducing expertise) are psychologically inseparable, as they stem from the same over-endorsement conduct. Influencer credibility as a unified construct therefore reflects how consumers in this context indeed evaluate credibility, with the advantage of also allowing parsimony of the model and facilitating comparative analysis with the anchor study.

2.3.3 Influencer Credibility: Definition and Operationalization

For the purpose of this study, influencer credibility is defined as the overall positive perception a follower holds of an influencer's integrity and competence as an endorser, adapted from Ohanian (1990) who defined source credibility as "a communicator's positive characteristics that affect the receiver's acceptance of a message". In social media influencer context, this definition is refined to capture the specific relational and content-based signals that determine whether a follower accepts or discounts an influencer's recommendations. Following Cheah et al., (2024), credibility is operationalized as a single latent construct rather than a set of independent dimensions, reflecting the unified nature of consumer credibility judgment in the digital endorsement environment.

This conceptualization aligns with a broader shift in the influencer marketing literature toward treating credibility as a holistic construct that captures both the trustworthiness and topical authority of the influencer simultaneously.

Munnukka et al., (2016) find that among peer type endorsers, the category social media influencers most closely resemble "perceived trustworthiness" is the strongest driver of endorsement effectiveness. Lou and Yuan, (2019) confirmed that source credibility, encompassing both honesty and expertise dimensions, is the primary mechanism through which influencer content generates consumer trust and purchase intentions. These findings support

treating the two Ohanian dimensions captured in this study's items as a single, coherent credibility judgment rather than as distinct analytical factors.

2.3.4 Influencer Credibility and Influencer Over Endorsement

Influencer credibility is the central mediating construct through which over-endorsement produces its downstream effects on consumer behavior. A follower who regards an influencer as credible processes their recommendations with reduced skepticism and is more likely to engage with the content and act on purchasing suggestions. When credibility deteriorates, this persuasive chain breaks. The follower reclassifies the influencer from a trusted source to a commercial actor, and their engagement and purchase responses shift accordingly.

The two related signals reinforcing over-endorsement combine to form a single negative impression of the endorser. The first signal, motivation-based (i.e., when an influencer is constantly pushing out numerous brands, particularly in a similar frequency, the followers automatically believe the recommendations are paid ones and not genuine product belief.). Silvera and Austad (2004) revealed that the persuasive power of an endorsement greatly diminishes if financial motivation is apparent to the audience for any of the influencer's attributes while Friestad and Wright (1994) formalized this into the Persuasion Knowledge Model which posits consumers are active interpreters and resistors of persuasion attempts they perceive tied to commercial interests. Over-endorsement stimulates this persuasion knowledge activation since the multiplication of paid partnerships makes the financial incentive system visible and difficult to interpret as a one-off incident.

The second signal is knowledge-based (i.e., it is impossible for them to have any meaningful expertise in all the domains they promote products for), influencers who recommend products in multiple unrelated categories are implicitly claiming that they have knowledge about those fields. De Veirman et al., (2017) showed that product incongruence with an influencer's content niche leads to negative consumer responses due to the erosion of the expertise-transfer assumption: a fitness influencer promoting financial services or a lifestyle blogger endorsing pharmaceuticals has no knowledge-based credibility for the endorsement. AlFarraj et al. (2021) corroborates the relevance of perceived expertise in the context of influencer credibility, and as a strong predictor of consumer purchase behavior.

In the unidimensional operationalization here, both signals are jointly captured the three measurement items drawn from Cheah et al., (2024) "trustworthy, honest, and expert on the topic" collectively reflect the follower's overall assessment of whether the influencer's

recommendations carry any genuine weight. Cheah et al. confirmed empirically that over-endorsement significantly reduces this overall credibility perception.

2.4 Consumer Engagement (Dependent variable 1)

2.4.1 Definition and Dimensions of Consumer Engagement

2.4.1.1 Definition and Emergence of Consumer Engagement

Consumer engagement has evolved from a peripheral concept in organizational psychology and educational research into one of the most theoretically productive and commercially significant constructs in contemporary marketing scholarship. The term appeared in fewer than ten academic marketing articles before 2005, by 2011, Brodie, Hollebeek, Jurić, and Ilić identified more than 80 publications using the construct and to volume has grown exponentially since (Brodie et al., 2011). This rapid ascent reflects a broader significant change in marketing: from a transactional focus on purchase behavior as the primary outcome of marketing investment toward a relational focus on sustained consumer involvement, interaction, and co-creation as the foundations of long-term brand value.

The theoretical roots of consumer engagement lie in the combining of relationship marketing, service-dominant logic (SDL), and social psychology. Brodie et al. (2011) ground their foundational definition in SDL (Vargo & lusch, 2004), arguing that in today's interactive service environment, value is co-created between the brand and the consumer through sustained, engaged interactions not delivered unilaterally through comments, shared content, user-generated responses, and community building around influencer brands. Consumer engagement, in this sense, is both an outcome of influencer marketing effectiveness and a driver of its commercial value.

Consumer engagement is defined in this study as a multidimensional psychological and behavioral state reflecting the depth of a follower's cognitive, emotional, and behavioral interaction with influencer content.

This definition draws on Brodie et al.'s (2011) foundational framework, which defines customer engagement as a psychological state occurring through interactive, co-creative experiences with a focal object, characterized by cognitive, emotional, and behavioral facets. Hollebeek (2011) extends this understanding by positioning engagement as a motivational, context-dependent state of mind manifesting across cognitive processing, emotional affection, and behavioral activation in direct brand interactions.

For the purposes of this study, consumer engagement is understood through Cheung et al.'s (2022) three-dimensional COBRAs-adapted framework: cognitive engagement, emotional engagement, and behavioral engagement. This multidimensional definition is more appropriate than purely behavioral alternatives, such as Van Doorn et al.'s (2010) framework, because the influencer marketing context involves all three dimensions simultaneously. Followers do not merely act on content but think about it, feel connected to it, and respond behaviorally as an integrated experience.

2.4.1.2 The Three-Dimensional Engagement Framework

The three-dimensional framework: cognitive, emotional, and behavioral, is the dominant structural model of consumer engagement in the literature (Brodie et al., 2011; Hollebeek, 2011; Cheung et al., 2022). Each dimension captures a distinct mode of consumer investment in influencer content, and each is theoretically vulnerable to over-endorsement's erosion effects through the mediating pathway.

Cognitive engagement refers to the degree to which followers actively pay attention to process and reflect on influencer content. It encompasses information seeking, critical evaluation of product recommendations, and mental elaboration of influencer-endorsed messages. In the SOR framework, cognitive engagement represents the intellectual organism response to the influencer content stimulus. Over-endorsement reduces cognitive engagement by generating persuasion knowledge activation (Friestad & Wright, 1994), which triggers message discounting: followers stop processing sponsored content as credible information and begin treating it as advertising noise. This cognitive withdrawal is the first and most immediate behavioral consequence of over-endorsement's authenticity erosion.

Affective engagement refers to the emotional dimension of follower investment in influencer content, the positive feelings of enthusiasm, excitement, and emotional connection that authentic influencer content generates. Hollebeek's (2011) 'affection' sub-dimension and Cheung et al.'s (2022) 'emotional engagement' items capture this facet. Affective engagement is the dimension most directly tied to parasocial relationship quality (Horton & Wohl, 1956): followers who feel emotionally close to an influencer experience positive affective responses to their content. Over-endorsement threatens affective engagement by transforming the perceived character of the relationship from parasocial friendship to commercial transaction, a relational reclassification that reduces the positive emotional valence of follower–influencer interactions.

Behavioral engagement refers to the observable interactive behaviors followers perform in response to influencer content such as liking, commenting, sharing, saving, and creating user-generated content in response. Muntinga, Moorman, and Smit (2011) introduced the consumption-contribution-creation hierarchy that structures behavioral engagement: consumption (viewing and reading content) requires the least investment, contribution (liking, commenting, sharing) requires moderate investment, and creation (uploading original responses, tagging, producing user-generated content) requires the highest investment. Over-endorsement is predicted to reduce behavioral engagement at all three levels of this hierarchy by removing the relational motivation that distinguishes genuine follower participation from passive exposure.

2.4.2 Consumer Engagement on Social Media Platforms

2.4.2.1 Social Media as an Engagement Amplifier

Social media platforms do not merely facilitate consumer engagement, they structurally incentivize and amplify it through architectural features designed to maximize user interaction time and content diffusion. Unlike traditional media channels, which deliver content unidirectionally to passive audiences, social media platforms provide a bidirectional interactive environment in which content consumption, contribution, and creation are continuously facilitated through features including likes, comments, shares, direct messages, saves, reactions, and user-generated content tools (Schivinski et al., 2016; Muntinga et al., 2011). This interactive architecture transforms the passive audience of traditional advertising into an active engagement community and makes social media the natural habitat for consumer engagement research.

In the influencer marketing context, social media platforms serve as the operational environment within which credibility perceptions translate into follower engagement behaviors. Each platform's specific features shape which engagement dimensions are most accessible: Instagram's visual format prioritizes affective engagement through aesthetic content. While YouTube's long-form video format facilitates deeper cognitive engagement through informational content. TikTok's algorithmic short video format incentivizes high-frequency behavioral engagement through scrolling, liking, and sharing interactions. In Algeria, where Facebook remains the dominant platform (25.6 million users), TikTok has experienced explosive growth to 21.1 million users, and Instagram is the primary influencer marketing platform for the 18-34 demographic (DataReportal, 2026) platform-specific engagement dynamics are important to situate.

2.4.2.2 The COBRAs Hierarchy: Consumption, Contribution, and Creation

Muntinga, Moorman, and Smit (2011) introduced the COBRAs (Consumers' Online Brand-Related Activities) framework as the first systematic typology of social media engagement behaviors. The framework organizes engagement behaviors into a three-level hierarchy reflecting increasing levels of consumer investment and interactivity.

Consumption represents the lowest-investment engagement behavior, passive viewing, reading, or watching of influencer content without active interaction. While apparently passive, consumption is theoretically important because it constitutes the entry point through which all higher engagement levels are accessed and because it is directly measurable through platform analytics as view count and watch time. Over-endorsement's effect on consumption is subtle but consequential. When followers begin categorizing influencer content as primarily commercial, they increasingly scroll past sponsored posts without consuming them, this is the social media equivalent of changing the television channel during an advertisement.

Contribution represents moderate-investment engagement, including active but relatively low-effort interactions including liking, commenting, sharing, and tagging. Platform algorithms on Instagram, TikTok, and Facebook use contribution metrics as primary signals of content quality, distributing content with high contribution rates to wider audiences through their recommendation engines. This creates a commercial amplification mechanism: authentic influencer content that generates high contribution engagement receives algorithmic distribution that extends its commercial reach, while over-endorsed content with low contribution rates is algorithmically suppressed. The engagement damage caused by over-endorsement's commercial consequences extends beyond direct follower responses to include a reduction in algorithmic reach.

Creation represents the highest-investment engagement behavior: followers produce and publish original content in response to or inspired by influencer content through user-generated content (UGC), product reviews, and unboxing videos, or branded hashtag participation. Creation behavior is the most commercially valuable engagement form for brands, as it constitutes organic word-of-mouth amplification at zero additional cost. Over-endorsement's damage to creation behavior is expected to be the most severe of the three COBRAs levels, because creation is motivated by the strongest form of authentic relational investment, which over-endorsements may strongly erode.

2.4.3 Antecedents of Consumer Engagement in Influencer Marketing

2.4.3.1 Overview of Engagement Antecedents

Table 5: Key Antecedents of Consumer Engagement in Influencer Marketing

Antecedents	Mechanism driving engagement	Key evidence	Relevance to this study
Influencer credibility (M)	Expert, trustworthy, and attractive influencers signal content quality and relational value, motivating followers to cognitively process, emotionally connect with, and behaviorally interact with content.	Sokolova & Kefi (2020): credibility predicts engagement and PI jointly with PSR. Lou & Yuan (2019): expertise drives brand awareness via engagement.	Core mediating construct in this study: Credibility → Consumer Engagement.
Parasocial relationship (W)	Strong PSR creates relational loyalty that sustains engagement motivation across different types of content. Followers with high PSR engage with influencer content as a form of relationship maintenance rather than simple content consumption.	Horton & Wohl (1956): parasocial interaction generates active audience participation. Sokolova & Kefi (2020): PSI positively predicts engagement. Rubin et al. (1985): PSR predicts active media engagement.	PSR moderates the Credibility → Engagement pathway in this study.
Content quality & characteristics	Information quality, design quality, and creativity of influencer content directly predict COBRAs. High quality content motivates consumption, contribution, and creation across all three behavioral	Cheung et al. (2022): SMI content characteristics predict COBRAs. Muntinga et al. (2011): content quality drives the hierarchy from consumption to creation.	Establishes content quality as a direct antecedent of COBRAs highlighting why over-endorsement reduces all engagement dimensions.

	engagement dimensions.		
Platform gratifications	Followers engage with influencer content to satisfy gratifications such as entertainment, information, social interaction, and personal identity expression. Engagement is highest when content consistently satisfies these gratifications.	Shao (2009): three engagement behaviors are gratification driven. Muntinga et al. (2011): COBRAs are motivated by entertainment, information, personal identity.	Contextualizes engagement as gratification-seeking behavior. Over-endorsement reduces gratification by transforming authentic content into commercial interruptions.
Over-Endorsement (IV indirect via M)	Over-endorsement reduces engagement indirectly by eroding credibility. The primary informational driver of engagement, thereby removing the motivational foundation of follower engagement behavior.	Cheah et al. (2024): OE → Credibility (β = −0.391); indirect effects on consumer outcomes significant. No direct OE → engagement path is hypothesized as the effect is fully mediated.	Establishes why consumer engagement is a necessary DV in any thorough over-endorsement research model.

Source: Personal efforts based on Brodie et al. (2011); Cheung et al. (2022); Cheah et al. (2024); Sokolova & Kefi (2020); Muntinga et al. (2011)

The antecedent structure presented in Table 5 highlights a critical theoretical insight: consumer engagement in the influencer marketing context is mediated by credibility in the over-endorsement model. Over-endorsement does not directly reduce engagement. The effects operate entirely through one causal chain: IOE→ Influencer Credibility(M) → Engagement (DV1). This means that interventions targeting credibility restoration through selective endorsement portfolios, transparent disclosure strategies, or niche congruence maintenance are the most effective levers for recovering follower engagement levels damaged by over-endorsements.

2.5 Purchase Intention

2.5.1 Definition of Purchase Intention

Purchase intention is defined as the subjective probability that a consumer will engage in a specific buying behavior toward a particular product or service (Fishbein & Ajzen, 1975). It represents a cognitive and motivational state that bridges consumer attitude and actual purchasing behavior, functioning as the most proximal and reliable antecedent of the buying decision within consumer psychology and marketing research (Schiffman & Kanuk, 2010).

Ajzen (1991, p. 181) defined behavioral intention of which purchase intention is a domain-specific manifestation as "an indication of how hard people are willing to try of how much of an effort they are planning to exert, in order to perform the behavior." This framing positions purchase intention not as a simple positive attitude, but as an active motivational force that drives behavioral follow-through. In the marketing literature, purchase intention is most commonly measured as a consumer's self-reported likelihood of buying a product within a defined future period (Dodds, Monroe, & Grewal, 1991).

Purchase intention is distinguished from mere purchase interest or product awareness. While awareness reflects exposure and interest reflects affective valence, purchase intention captures the volitional, goal-directed component of consumer decision-making: the point at which cognitive evaluation crystallizes into a behavioral commitment (Bagozzi, Baumgartner, & Yi, 1989).

For the purposes of this study, purchase intention is defined as the degree to which a consumer expresses a conscious inclination to purchase a product or service endorsed by a social media influencer, following exposure to that influencer's promotional content. This definition is consistent with its measurement across influencer marketing studies (Weismueller et al., 2020; Saima & Khan, 2021; Lou & Yuan, 2019) and positions purchase intention as a measurable behavioral disposition shaped by attitudinal, normative, and credibility-related antecedents.

2.5.2 Theoretical Grounding: Theory of Planned Behavior (Ajzen, 1991)

The theory of planned behavior (TPB), developed by Ajzen (1991), serves as the theoretical foundation for understanding purchase intention in this study. Building on the earlier theory of Reasoned Action (Fishbein & Ajzen, 1975), the TPB argues that human behavior is not random, but planned shaped by three key factors that together predict behavioral intention (Ajzen, 1991; Armitage & Conner, 2001).

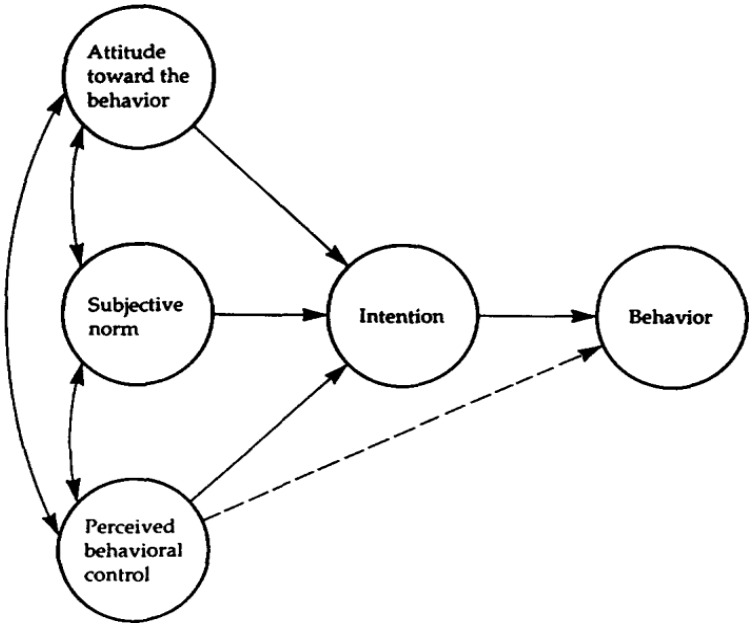
The three factors are:

Attitude: how positively or negatively a consumer evaluates a particular behavior, such as buying a product. In marketing contexts, attitudes are shaped by the informational and persuasive content of influencer endorsements (Ajzen, 1991; Spears & Singh, 2004), which can significantly impact consumer behavior and purchasing decisions.

Subjective Norms: The social pressure a person feels from others to perform or avoid a behavior. In social media contexts, influencers act as powerful social referents whose endorsements signal peer approval and shape consumer behavior (Djafarova & Rushworth, 2017; Childers et al., 2019).

Perceived Behavioral Control: how capable a person feels of actually performing the behavior. Credible and informative influencer content reduces consumer uncertainty and strengthens this sense of capability, thereby facilitating purchase intention (Ajzen, 1991; Lim et al., 2017).

Figure 1: Theory of Planned Behavior



Source: Ajzen (1991, p.182)

The TPB has demonstrated strong predictive power across consumer behavior research. Armitage and Conner's (2001) meta-analysis of 185 studies found that the model explains approximately 39% of the variance in behavioral intention. It has since been successfully applied to predict online purchase intention (Pavlou & Fygenson, 2006) and influencer-driven buying decisions (Saima & Khan, 2021).

2.5.3 Influencer Marketing and Purchase Intention

Research consistently confirms that influencer endorsements significantly elevate consumer purchase intention, though this effect depends critically on the perceived credibility of the influencer (Ohanian, 1990; Audrezet et al., 2020). Grounded in source credibility theory, consumers who perceive an influencer as trustworthy, knowledgeable, and attractive are more likely to translate exposure into purchase intent. Weismueller et al. (2020) confirmed that attractiveness, trustworthiness, and expertise each independently predict purchase intention, while Lou and Yuan (2019) established that consumer trust acts as the critical mediating mechanism between influencer content quality and purchase intention.

Parasocial relationships further strengthen these effects. Hwang and Zhang (2018) demonstrated that emotional bonds between followers and influencers enhance trust, which subsequently increases purchase intention. Sokolova and Kefi (2020) found parasocial interaction strength, which is partly built through perceived similarity, positively predicts purchase intention.

Conversely, over-endorsement disrupts this persuasive pathway. When influencers endorse excessively, perceived trustworthiness and expertise decline, weakening consumer willingness to act on recommendations and reducing the overall effectiveness of influencer marketing campaigns (Cheah et al., 2024; Schouten et al., 2020).

2.6 Parasocial Relationship (Moderator W)

2.6.1 Definition and Nature of Parasocial Relationships

2.6.1.1 The Foundational Framework: Horton and Wohl (1956)

The concept of parasocial relationship was introduced by Donald Horton and R. Richard Wohl in their landmark 1956 paper, Mass Communication and Parasocial Interaction: Observations on Intimacy at a Distance. Horton and Wohl observed that television audiences do not merely watch media personalities, they develop persistent, one-sided intimacies with them that mirror the structure of real social relationships. They described this phenomenon as intimacy at a distance: a form of relational investment that provides the psychological and social rewards of friendship closeness, understanding, and companionship without requiring the reciprocal obligations of genuine social interaction.

Horton and Wohl's (1956) framework established two fundamental properties of parasocial phenomena that remain theoretically central to contemporary SMI research. First, parasocial relationships are unidirectional: the audience member invests in a relationship with a persona

who is unaware of and does not reciprocate the individual relationship. Second, parasocial phenomena generate real behavioral consequences: the emotional investment, trust, and relational closeness developed through parasocial contact produce genuine attitudinal and behavioral effects including opinion change, emotional responses to the persona's wellbeing, and consumption of products the persona recommends. These two properties, unidirectionally and behavioral consequence, are precisely what make PSR commercially significant in the influencer marketing context and theoretically important as the moderating variable in this study.

2.6.1.2 PSI versus PSR: Conceptual Clarification

Critical conceptual clarification is required before PSR can be measured as the moderating variable: The distinction between parasocial interaction (PSI) and parasocial relationship (PSR). These terms are frequently used interchangeably in the literature, but scholars have established their theoretical separability as important for both conceptual precision and measurement validity (Dibble, Hartmann & Rosaen, 2016).

Parasocial interaction (PSI) is situational, in-the-moment one-sided responsiveness that media audiences experience during consumption of media content: the immediate feeling of being with a media persona while watching or listening. PSI is episodic, arising during exposure and dissipating after. Parasocial relationship (PSR), by contrast, is the stable, cross-situational, enduring bond that develops over time through repeated parasocial interactions with a media persona. PSR persists between exposures and constitutes a long-term dispositional orientation toward the influencer characterized by feelings of friendship, emotional closeness, and interpersonal involvement (Horton & Wohl, 1956; Rubin et al., 1985).

This distinction has a direct methodological implication for this study: because the survey design captures retrospective assessments of the follower-influencer relationship rather than in-the-moment exposure responses, the construct measured is PSR rather than PSI. This is consistent with Rubin et al.'s (1985) foundational scale, which despite its PSI label primarily measures enduring relational feelings, a point confirmed by Dibble et al. (2016). The present study therefore adapts the PSR framing throughout.

It is also worth acknowledging Lou's (2022) trans-parasocial relationship framework, which extends the classic PSR model specifically for the SMI context by recognizing that influencers can engage in direct interaction with followers through comments, DMs, and live sessions creating a hybrid relationship that is neither fully parasocial nor fully social. In Algeria, where micro-influencers dominate and direct follower-influencer interaction is common, this trans-

parasocial framing is contextually relevant. This study acknowledges this theoretical development and recommends it as a direction for future research in the Algerian micro-influencer environment.

2.6.2 Antecedents of Parasocial Relationships in Social Media Influencer Context

Understanding what builds PSR's strength is theoretically important for contextualizing PSR's moderating role in this study. Aw and Chuah (2021) identify three content-driving antecedents: attractiveness (the visual and aesthetic appeal of the influencer's content), prestige (the degree to which content conveys high social status), and expertise (the degree to which content implies knowledge and experience). All three significantly predicted PSR strength, confirming that PSR is not merely a personality disposition, but a relationship built through cumulative content exposure.

Yuan and Lou (2020) add source credibility and communication fairness as antecedents suggesting that influencers who are perceived as credible and transparent in their follower interactions build stronger PSR over time. This creates a theoretically important circular pathway in the over-endorsement model: over-endorsement erodes credibility (H1), and eroded credibility may in turn weaken PSR reducing the very moderating force that amplifies the positive effects of credibility on engagement and purchase intention.

In the Algerian context, parasocial relationships with social media influencers are often strengthened by perceived similarity, especially when influencers communicate in Darja, reflect local cultural norms, and share everyday realities familiar to Algerian audiences. This cultural proximity makes micro-influencers appear more authentic and relatable, which increases audience trust and emotional connection compared to more distant, aspirational influencers (Sokolova & Kefi, 2020).

2.7 Research Gaps and Study Contributions

The literature reviewed in this chapter reveals three research gaps that the present study addresses.

First, no existing study has examined influencer over-endorsement in the Algerian consumer context. Cheah et al. (2024) the anchor study, was conducted in united states. Therefore, the Algerian context warrants independent empirical investigation due to differences in cultural norms, media trust, purchasing power, and social media use.

Second, no prior over-endorsement study has examined parasocial relationship as a moderating variable. Cheah et al. (2024) tested only product interest as the boundary condition. The present study addresses this gap by positioning PSR as the moderator of both "Credibility → Consumer Engagement (H6)" and "Credibility → Purchase Intention (H7)" pathways, drawing on Aw and Chuah's (2021) empirical demonstration that PSR significantly reduces followers' perception of self-serving endorser motives.

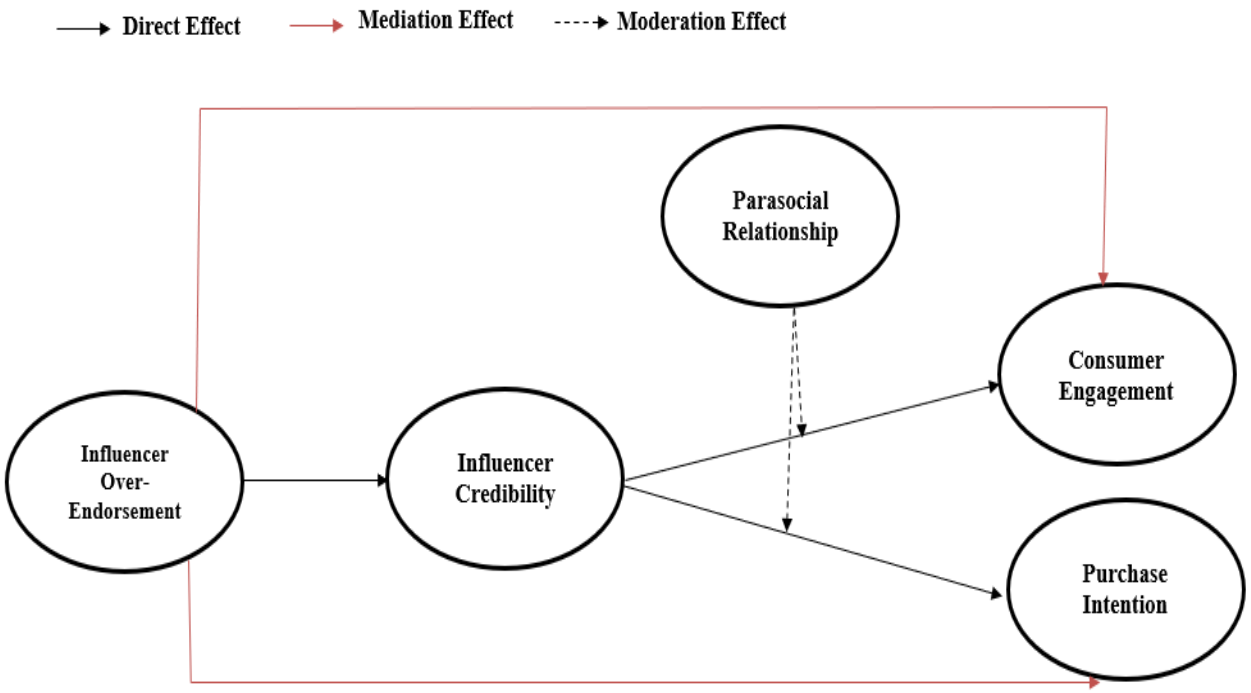
Third, consumer engagement has been entirely absent from over-endorsement research. Cheah et al. (2024) used purchase intention as the only dependent variable. This study introduces consumer engagement as DV1 using Cheung et al. (2022) COBRAs-adapted scale, which is particularly relevant in Algeria where high purchase friction makes engagement a more immediately actionable commercial outcome than purchase intention alone.

2.8 Conceptual Framework of the Study

Drawing from the theoretical foundations and prior research explored in the literature, the following conceptual framework brings together the main elements of this study into a coherent model. It illustrates the proposed relationships, including the impact of influencer over-endorsement on influencer credibility, the mediating role of influencer credibility on consumer engagement and purchase intention, and the moderating role of parasocial relationship.

2.8.1 Research Model of the Study

Figure 2: Research Model of the Study



Source: Personal Efforts

2.8.2 Description of Hypothesized Relationships

Table 6: Description of Hypothesized Relationships

Hypo-Thesis	Relationship	Direction	Description	Key Study
H1	IOE → IC	(-) negative	Excessive brand partnerships reduce perceived trustworthiness and expertise, leading to lower influencer credibility.	Cheah et al. (2024)
H2	IC→ CE	(+) positive	Credible influencers encourage followers to interact more actively with content (likes, comments, shares).	Sokolova & Kefi. (2020)
H3	IC → PI	(+) positive	Higher credibility increases trust in recommendations, which strengthens consumers' intention to purchase.	Weismueller et al. (2020)
H4	IOE → IC→ CE	Indirect (-)	Over-endorsement reduces engagement indirectly by	Cheah et al. (2024)

			damaging influencer credibility.	
H5	IOE → IC→ PI	Indirect (-)	Over-endorsement decreases purchase intention through reduced credibility.	Cheah et al. (2024)
H6	PSR × IC → CE	Positive (amplifying)	Strong parasocial relationships strengthen the effect of credibility on engagement.	Aw & Chuah (2021)
H7	PSR × IC → PI	Positive (amplifying)	Strong parasocial bonds increase the influence of credibility on purchase intention.	Hwang & Zhang (2018)

Source: Personal efforts

The current review covered the basic definitions of social media influencer marketing and the rising issue of over-endorsement. Influencers who promote too many brands or collaborate with brands that are not aligned with their niche risk losing followers, as their honesty and expertise may be called into question, ultimately damaging their credibility. The review identified influencer credibility as a key component of the effectiveness of influencer marketing. When over-promotion leads to a loss of credibility, influencer content is less likely to generate engagement, and the products they endorse are less likely to be purchased. Parasocial relationships may significantly influence these responses. Followers with stronger bonds may be more tolerant of over-endorsement than those with weaker bonds. These insights provide the theoretical background for this study and support the proposed conceptual model that integrates influencer over-endorsement, influencer credibility, consumer engagement, purchase intention, and parasocial relationship.

Chapter 3: Research Methodology

Chapter 3: Research Methodology

Introduction

This chapter presents the methodological framework adopted in the present study, which examines the impact of influencer over-endorsement on consumer engagement and purchase intention among Algerian social media users, with influencer credibility as the mediating variable and parasocial relationship as the moderating variable. The chapter is structured to guide the reader through every methodological decision in a transparent, justified and academically rigorous manner.

The chapter opens with a contextual presentation of the institutional partner spotlight agency, which provides the professional context and access framework for this research. It then articulates the study's objectives, research questions, and seven hypotheses before detailing the research design, including the methodological choices that govern the study. The questionnaire design is subsequently elaborated, covering the structure, screening logic, measurement instruments, and linguistic consideration. The sampling strategy, data collection procedure and analytical method are then described. The chapter concludes with the discussion of the ethical considerations observed throughout the research process.

3.1 Overview of the Influencer Marketing Industry in Algeria

3.1.1 Sectoral Context and Growth

Influencer marketing has emerged as one of the most transformative forces in the global digital advertising landscape. Globally, the market was valued at approximately 21 billion United States dollars in 2023 and continues to expand rapidly, driven by exponential growth in social media penetration and shifting consumer preferences toward peer-based recommendations over traditional advertising formats. In Algeria, the trajectory has been notable, with a connected population exceeding 37 million Internet users and an overall penetration rate above 75%, alongside a young and digitally active population with a median age of 28.6 years, reflecting strong engagement with online platforms (DataReportal, 2026). The country represents a fertile and rapidly maturing market for influence-driven marketing communication.

The Algerian digital landscape is characterized by high and increasing levels of connectivity and digital engagement, supported by widespread urbanization and continuous growth in online adoption. Platforms such as Instagram, TikTok, Facebook, and YouTube remain central to user activity, attracting large and active audiences. Content creators operating in niches including beauty, fashion, food, technology and lifestyle have amassed substantial followings, making

them credible and cost-effective conduits between brands and their target audiences. In this evolving environment, businesses are increasingly recognizing the strategic value of influencer marketing as part of broader digital communication efforts, reflecting a progressive transformation of the national advertising ecosystem (DataReportal, 2026).

3.1.2 Strategic Importance for Brands and Consumers

For brands, influencer marketing offers a uniquely persuasive combination of reach, authenticity, and measurability. Unlike conventional mass-media advertising, influencer-mediated communications benefit from pre-existing parasocial relationships between content creators and their audiences, thereby reducing skepticism and increasing message receptivity. For consumers, influencers serve as trusted opinion leaders whose product recommendations carry perceived social proof, simplifying purchase decision making in an increasingly fragmented media environment. The institutionalization of influencer marketing in Algeria is therefore not merely a trend but a structural evolution in the country's broader marketing communications paradigm.

3.2 Presentation of Spotlight Agency

3.2.1 General Overview

Spotlight is an Algerian-born hybrid marketing ecosystem founded in 2021 with a clearly articulated mission, which is to professionalize influencer marketing in Algeria by building both technological and human infrastructure, necessary to connect brands and content creators in a transparent, measurable, and legally compliant manner. Operating under the leadership of CEO Zakaria Hadji, spotlight has grown from a boutique influencer agency into a diversified ecosystem encompassing four distinct entities: Spotlight Agency (full-service influencer and brand agency), SpotlighterZ (talent management arm), Spotlight.dz (Algeria’s first dedicated influencer marketing SaaS platform), and Spotlight Podcast Studio (audio-visual content production infrastructure).

3.2.2 Market Positioning and Value Proposition

According to internal information provided by Spotlight Agency, the company positions itself as the market leader in Algerian influencer marketing, claiming approximately 75% of the Algerian influence market share. this positioning is substantiated by a client portfolio exceeding +70 enterprise clients and a verified influencer network of +500 content creators since its inception, the company’s core value proposition rests on three pillars: the combination of a full-service agency model with a self-service technology platform, the legal compliance of its

influencer roster(all creators are certified auto-entrepreneurs), and the exclusive development of Algeria's first dedicated influencer marketing platform, Spotlight.dz, which was launched in 2024 and has since aggregated over +250 enterprise clients, +500 creators, and +40 campaigns on its platform.

3.2.3 Services and Activities of Spotlight Agency

3.2.3.1 Dual-Sided Service Architecture

- **For Content Creators (Influencers):** the platform provides verified creators with access to paid brand collaboration opportunities matched to their niche, audience demographics, and geographic presence (wilaya-level targeting). Creators are onboard following a verification process that validates their legal status as auto-entrepreneur, their audience authenticity, and the content quality, thereby differentiating Spotlight's network from unvetted influencer pools.
- **For Brands:** Spotlight delivers end-to-end campaign management services, from strategic influencer selection and briefing through to content validation, publication monitoring, and post-campaign reporting. Brands accessing the Spotlight.dz platform benefit from an intuitive, and automated interface enabling self-managed campaign creation with advanced filtering capabilities (by niche, audience size, wilaya, and engagement rate), reducing campaign turnaround times and operational costs.

3.2.3.2 Core Service Offering

Spotlight's services portfolio encompasses several principal activity areas:

- Bespoke influencer campaigns: Full-service management of influencer campaigns including UGC (user-generated content), native format activations, and creative influencer marketing strategies tailored to brand objectives.
- PR, Influence and Media: Strategic brand storytelling, media relations, and integrated press and influence campaigns designed to build brand equity and visibility.
- Community Management: Next-generation social media management encompassing content strategy, audience engagement, and platform specific creative production.
- Content Creation: Production of branded video content, product demonstrations, creative captions and advertising assets executed by the in-house artistic and production team.

- Event Management: End-to-end event conceptualization, logistics, décor, activation design, and media and influence coverage, serving as a key channel of experiential marketing campaigns.
- The Spotlight Podcasts Studio constitutes an additional distinctive infrastructure asset, comprising two fixed professional studios (one nature-inspired and one green screen-equipped) and a mobile studio deployed at client events and trade shows. This facility supports branded podcast production, creator content monetization, and corporate audiovisual content.

3.2.3.3 Platform Subscription Architecture (Spotlight.dz)

Spotlight.dz operates on a tiered subscription model designed to accommodate both individual creators and enterprise-level clients across varying operational scales. While the precise nomenclature of the four plans is proprietary, their functional architecture follows a progressive logic: a starter tier for emerging brands seeking limited-scope campaigns, a growth tier offering enhanced filtering and reporting, a professional tier incorporating dedicates campaign management support, and an enterprise tier providing full-suite access with custom integration, priority matching and advanced analytics dashboard. This model enables scalable access to the platform's capabilities while ensuring that the level of service is commensurate with client investment.

3.2.4 Spotlight's Role and Influencer-Brand Partnerships

3.2.4.1 Competitive Advantages

Spotlight's competitive differentiation is rooted in the convergence of technological innovation and operational expertise, a combination that distinguishes it from both traditional concierge-model agencies and purely automated platforms. Key advantages include: the legal compliance of all platform influencers (auto-entrepreneur certification), data sovereignty ensured through compliance with Algerian data protection law (ANPDP), advanced geolocation targeting at the wilaya level, a granularity absent from competing solutions, and first mover advantage as Algeria's inaugural dedicated influencer marketing technology platform.

3.2.4.2 Contribution to Campaign Effectiveness

Spotlight's integrated model that combines human curation with algorithmic matching, enables brands to achieve greater campaign precision and return on influence investment. The platform's verified creator roster eliminates the risk of fraudulent engagement metrics, while its structured campaign management processes ensure brand safety and contractual compliance. Reported outcomes from the platform include +300 million cumulative views across all

managed campaigns, a figure that reflects both the scale and engagement depth of Spotlight's influencer network. The agency's concierge service layer further ensures that brands receive personalized strategic guidance, reducing the learning curve associated with influencer campaign management.

3.2.4.3 Client Portfolio and Partnership Typology

Spotlight's client portfolio is remarkably diversified across sectors, encompassing multinational FMCG corporations (Coca-Cola, Danone, L'Oréal, Henkel), telecommunications operators (Ooredoo, Djezzy), technology brands (Samsung, Oppo, LG, Infinix), financial and mobility services (Yassir, Careem, Heetch), public institutions (Ministry of Health, Algerian national agency for Self-Employment), and a broad spectrum of domestic brands. This cross-sector breadth is evidence of spotlight's broad expertise and its positioning as the reference agency for brands seeking to engage Algerian digital audiences through credible and impactful influence communication.

3.2.5 Organizational Structure

3.2.5.1 Structural Review Overview

Spotlight operates under a functional-hierarchical organizational structure that reflects the dual nature of its operations: an agency model requiring creative, relational, and strategic human capital, and the technology platform requiring IT, data, and product management capabilities, the organization is structured into five functional departments reporting to the Chief Operating Officer (COO) who in turn reports directly to the CEO. An HR and finance function operates cross-departmentally at the executive level.

3.2.5.2 Hierarchical Structure

(See Appendix 4 for the hierarchical structure of Spotlight Agency)

Department-Level Breakdown:

Artistic and Creative Department (Dir. Hassan MAIRECH): oversees all creative production including graphic design (graphic designer) and video editing (Youssra HASNAOUI, video editor). Responsible for visual identity consistency and content quality across all client deliverables.

IT and Technology department yuba (Youba HAMOUDI, Responsible IT): Manages the technical infrastructure of spotlight.dz, platform development, maintenance, and data security compliance (ANPDP).

Commercial and Agency Operations/ Podcast Studio (Abdel Latif MEHSASSE, Brand Manager): Manages commercial development, client acquisition, and operational delivery for Spotlight Agency and the podcast studio division.

SpotlighterZ /Brand Manager (Kenzy IZEM): Dedicated to talent management and brand relationship management within the spotlighterZ influencer roster. Supported by a community manager (Mohamed) and a social media manager (Basmala Bellat).

Spotlights Agency/ Brands Operations (Amira AITTAHAR, Brand Manager): Manages brand partnerships, influencer campaign execution, and client relations for the spotlight agency entity. Also supported by the shared social media team.

3.3 Research Objectives and Hypotheses

3.3.1 Main Research Objective

The primary objective of this study is to empirically examine the impact of social media influencer over-endorsement on consumer engagement (DV1) and purchase intention (DV2) among Algerian social media users, investigating influencer credibility as the mediating mechanism and parasocial relationship as the moderating variable that conditions the magnitude of the credibility-outcomes pathways. In doing so, the study provides the first quantitative examination of these dynamics in an Algerian consumer context, extending the anchor study by Cheah et al. (2024) to a new cultural and market setting.

This primary objective is supported by three secondary objectives: (1) to assess the direct impact of influencer over-endorsement on influencer credibility, (2) to test whether influencer credibility mediates the relationship between influencer over-endorsement and both consumer engagement and purchase intention, and (3) to determine whether the strength of parasocial relationship between follower and influencer moderates the credibility-engagement and credibility-purchase intention pathways.

3.3.2 Research Question

The study is governed by the following overarching research question:

The main research question is as follows:

Does influencer over-endorsement affect consumer engagement and purchase intention among Algerian social media users, and what roles do influencer credibility and parasocial relationship play in this relationship?

More specifically, this study examines influencer credibility as a mediating mechanism and parasocial relationship as a moderating variable.

This main question is operationalized through four subsidiary questions:

Q1: Does influencer over-endorsement have a significant negative effect on influencer credibility?

Q2: Does influencer credibility mediate the relationship between influencer over-endorsement and consumer engagement?

Q3: Does influencer credibility mediate the relationship between influencer over-endorsement and purchase intention?

Q4: Does parasocial relationship moderate the relationships between influencer credibility and consumer engagement, and between influencer credibility and purchase intention?

3.3.3 Research Hypotheses

- Direct Effects Hypotheses

H1: Influencer over-endorsement has a significant negative effect on influencer credibility.

When influencers promote too many brands, followers begin to question the sincerity of their recommendation and perceive them as commercially driven rather than genuine. This perception directly undermines the influencer's trustworthiness and expertise. Cheah et al., (2024) confirmed this negative relationship empirically ($\beta = -0.391$, $p < .001$). The Persuasion Knowledge Model (Friestad & Wright, 1994) further explains that once consumers detect persuasion intent, credibility is significantly reduced.

H2: Influencer credibility has a significant positive effect on consumer engagement.

A credible influencer lowers followers' defenses and motivates them to interact with content more actively. Lou & Yuan (2019) showed that credibility builds trust in branded content, which drives engagement behaviors. Sokolova & Kefi, (2020) further confirmed through SEM that perceived credibility is a significant positive predictor of follower engagement on social media.

H3: Influencer credibility has a significant positive effect on purchase intention.

According to source credibility theory, a trustworthy and expert endorser generates a positive attitude toward the recommended product, which in turn shapes purchase intention (Ohanian, 1990). Weismueller et al., (2020) confirmed that both trustworthiness and expertise

independently and positively predict purchase intention among social media users. This relationship has been replicated specifically in influencer marketing context by Koay et al., (2023).

- Mediation Hypotheses

Why Influence Credibility Was Selected as a Mediator

Influencer credibility was selected as the mediator because it represents the cognitive evaluation through which followers interpret over-endorsement behavior before forming any response. When followers observe excessive brand promotions, they do not react behaviorally in a direct way. They first reassess how trustworthy and expert the influencer is, and that reassessment then drives their engagement and purchase decisions. This logic is grounded in the SOR framework (Mehrabian & Russell 1974), where credibility serves as the internal organism state connecting the stimulus to the response. Prior work by Cheah at al. (2024) confirmed this mediation role making credibility the theoretically and empirically justified mechanism in this model.

H4: Influencer Credibility mediates the relationship between influencer over-endorsement and consumer engagement.

Influencer over-endorsement reduces engagement indirectly, by eroding influencer credibility, which then removes the motivational basis for follower interaction. This sequential logic follows the SOR framework, with credibility as the Organism state between stimulus and behavioral response. Cheah et al. (2024) confirmed a full mediation pattern on a comparable pathway, supporting the extension of this mechanism to the engagement outcome.

H5: Influencer Credibility mediates the relationship between influencer over-endorsement and purchase intention.

Cheah et al. (2024) established full mediation on this exact pathway, showing that the direct effect of influencer over-endorsement on purchase intention was not significant ($\beta = -0.041$, $p = .247$), while the indirect effect through credibility was significant. This confirms that credibility fully accounts for the negative impact of over-endorsement on purchase intention, consistent with the theory of planned behavior (Ajzen, 1991).

- Moderation Hypotheses

Why Parasocial Relationship Was Selected as a Moderator

PSR was selected as the moderator because the effect of credibility on consumer outcomes is not equal across all followers. It depends on the emotional closeness they feel toward the influencer. Followers with a strong parasocial bond treat the influencer as a trusted friend, which amplifies how much weight they place on credibility signals when engaging or deciding to purchase. PSR does not explain how the effect occurs (that is credibility's role), but it determines how strong that effect is, which is precisely the definition of moderation (Baron & Kenny, 1986). Hwang & Zhang (2018) and Aw & Chuah (2021) both support PSR as a boundary condition on credibility-to-outcomes relationships.

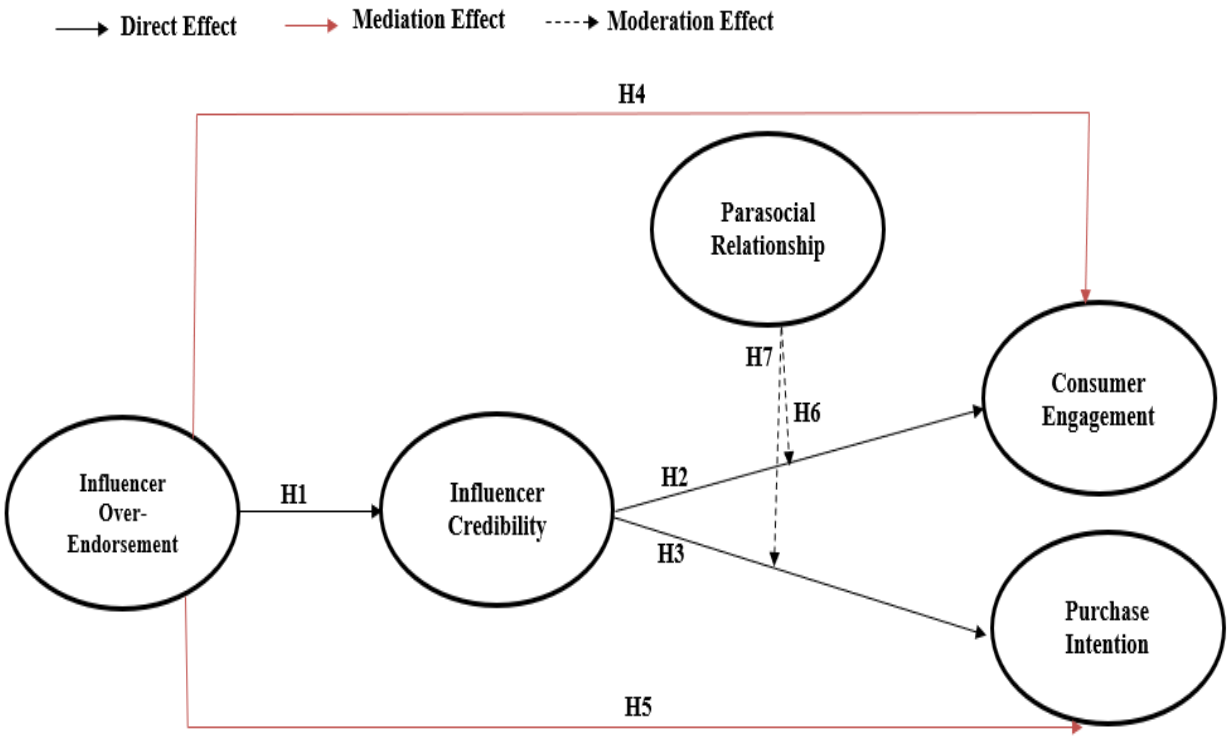
H6: Parasocial relationship moderates the relationship between influencer credibility and consumer engagement, such that this relationship is stronger when parasocial relationship is high.

High-PSR followers process influencer content as a personal recommendation rather than an advertisement. Increasing the weight they assign to credibility when deciding to engage. Hwang and Zhang (2018) confirmed that PSR strengthens the influence of source characteristics on follower behavior. Sokolova & Kefi (2020) further showed that PSR and credibility interact in predicting engagement, supporting an amplification effect.

H7: Parasocial relationship moderates the relationship between influencer credibility and purchase intention, such that the relationship is stronger when parasocial relationship is high.

A strong parasocial bond reduces followers' perception that an endorsement is self-serving, amplifying the weight they give to credibility when forming purchase intentions. Aw and Chuah, (2021) demonstrated that high PSR significantly reduces self-serving motive inference ($\beta = -0.630$, $p < .01$). Yuan and Lou (2020) further confirmed that PSR strengthens the credibility-product interest relationship, supporting its role as a boundary condition across credibility-to-outcome pathways.

Figure 3: Research Model of the Study



Source: Personal Efforts

3.4 Research Design

The research design constitutes the overarching plan that connects the study's research questions and hypotheses to the data collection and analysis methods. This study's design is guided by four interconnected choices: research approach (quantitative and deductive), research strategy (survey), and time horizon. Each choice is elaborated and justified in the sub-section below.

3.4.1 Research Approach: Quantitative and Deductive

A quantitative deductive research approach is employed. Deductive reasoning moves from theory to hypothesis to empirical testing: the researcher begins with an established body of theory, derives specific and established propositions, collects numeric data and uses statistical analysis to determine whether the data supports or contradicts the theoretical predictions (Bryman, 2016). This contrasts with inductive reasoning, which moves from data to theory and is more typically associated with qualitative research.

Deductive approach is appropriate here because the conceptual model and seven hypotheses of this study are derived directly from existing theory and prior empirical work, most notably Cheah et al., (2024) anchor study on influencer over-endorsement. The quantitative dimension

is justified by the need to measure latent psychological constructs (credibility, engagement, purchase intention, and parasocial relationship) through reflective multi-item scales and to test complex structural relationships, including mediation and interaction-based moderation, using structural equation modeling. Quantitative methods offer the statistical power, replicability, and generalizability required for these analytical objectives.

3.4.2 Research Strategy: Online Survey

A self-administrated online survey was chosen as the primary data collection strategy. surveys are the most widely used and methodologically established data collection method in consumer behavior and influencer marketing research, offering four principal advantages: standardization of measurement across respondents, scalability to large samples, costs and time efficiency, and the capacity to operationalize latent constructs through validated multi-item scales (Hair et al., 2019).

An online format is particularly appropriate in the Algerian context for two reasons. First, the target population is "social media users who follow and engage with influencer content" is digitally active and accessible through online channels. Second, online surveys facilitate rapid distribution through social media platforms and messaging applications, which are the primary communication channels through which Algerian social media users are reachable. The survey was built and distributed using Google Forms, which provides free access, device compatibility, built in branching logic for screening questions, and real-time response monitoring.

3.4.3 Time Horizon: Cross-Sectional

This study implies a cross-sectional time horizon, meaning that all data were collected from the full sample as a single point in time. This design is appropriate for the present study because the research objective is to examine the current state of consumer perceptions of influencer over-endorsement and its consequences, rather than to track changes in these perceptions over time, which would require a longitudinal design. Cross-sectional designs are standard in influencer marketing research (Cheah et al., 2024) and are adequate for testing the hypothesized structural relationships.

3.5 Questionnaire Design

The questionnaire was designed to operationalize the five constructs of the research model through validated measurement scales, while incorporating screening logic to ensure respondent eligibility and demographic questions to profile sample. The design followed the

principles of minimizing respondent burden, maintaining construct validity, and ensuring cultural and linguistic accessibility for Algerian respondents.

3.5.1 Structure of the Questionnaire

The questionnaire was structured into three parts. Part 1 contained the screening questions, the main instruction directing respondents to identify a specific influencer, and an open-ended question asking respondents to name that influencer and indicate their main content domain. Part 2 contained the five Likert-scale measurement sections, presented in the causal order of the research model: influencer over-endorsement (IV) → credibility (M) → consumer engagement (DV1) → purchase intention (DV2) → parasocial relationship (W). Part 3 collected demographic information. This ordering was chosen deliberately to present the stimulus construct (influencer over-endorsement) before the outcome constructs, following the causal flow of the SOR model and reducing potential demand characteristics whereby respondents might infer expected response patterns from question ordering.

3.5.2 Screening Questions

Three screening questions were placed at the beginning of the questionnaire to ensure that only eligible respondents' active followers who have been exposed to influencer sponsored content were included in the analysis. An additional open question was included to anchor respondents to a specific, personally relevant influencer, which is essential for the validity of construct measurement in this study.

Table 7: Screening Questions and Their Purpose

Code	Question	Purpose/ Logic
S1	Have you ever seen sponsored ads from any influencer?	Eliminates respondents with no exposure to influencer advertising. Those answering no are directed to exit.
S2 (Open)	Please write the name of the first influencer that comes to your mind who frequently shares promotional content	Anchors all subsequent responses to a specific, personally salient influencer. improves construct validity and reduces hypothetical bias.
S3	What is the main domain of this influencer?	Captures influencer niche (fashion and beauty/ fitness and health /food and cooking/ lifestyle/ others). used for

		sample profiling and potential subgroup analysis.

Source: Personal Effort

3.5.3 Measurement Scales

All five constructs were measured using established, validated scales drawn from the influencer marketing and consumer behavior literature. A 5-point Likert scale anchored at 1 = strongly disagree and 5 = strongly agree was used for all items. The choice of a 5-point rather than a 7-point scale as used in the original source studies is justified by three considerations: (1) 5-point scale are more familiar and cognitively accessible to Algerian survey respondents. (2) with the twenty-six scale items in total the 5-point format reduces respondent fatigue without sacrificing adequate response variance. And (3) although the original scales were measured using a seven-point Likert format, this study adopted a five-point Likert scale to make the questionnaire simpler and more accessible for respondents.

3.5.3.1 Influencer Over-Endorsement "Independent Variable (IV)"

Source: Arora et al. (2022), adapted identically by Cheah et al. (2024).

Items: four items (IOE1–IOE4)

Adaptation status: identical exact wording used as in Cheah et al. (2024), ensuring full comparability with anchor study.

Influencer Over-endorsement was measured using 4 items that evaluate the degree to which respondents perceive the influencer they identified as engaging in excessive brand promotion. Specifically, the items capture perceptions of quantity overload (too many brands, too many products, too many companies) and of fit incongruity (partnership with brands unrelated to the influencer's content domain). This dual-faced operationalization reflects Cheah et al. (2024) conceptualization of over-endorsement as encompassing both volumetric excess and thematic incongruence.

Table 8: Influencer Over-Endorsement Scale Items

Code	Item
IOE1	This influencer promotes too many brands.
IOE2	This influencer endorses an excessive number of products.

IOE3	This influencer collaborates with too many different companies.
IOE4	This influencer partners with the brands that are unrelated to their content.

Source: Arora et al. (2022), Cheah et al. (2024)

3.5.3.2 Influencer Credibility "Mediator (M)"

Source: Cheah et al. (2024).

Items: three items (IC1–IC3)

Adaptation status: directly adapted from Cheah et al. (2024), no modifications.

Influencer credibility was measured using three items capturing global source credibility as a unidimensional: trustworthy (IC1), honest (IC2), and expert (IC3). Cheah et al. (2024) operationalized this streamlined measure-based on Ohanian's (1990) theoretical work, deliberately moving away from the traditional three-dimensional structure (expertise, trustworthiness, attractiveness) toward a holistic assessment. the present study adapted this approach for three reasons: (1) direct comparability with the anchor study Cheah et al. (2024), (2) parsimony in an already comprehensive survey, and (3) contextual appropriateness, as Algerian consumer likely forms global credibility judgments when evaluating over-endorsing influencer rather than distinguishing between separate dimensions. The three items operationalization, therefore, provides a theoretical grounded yet concise measurement of credibility erosion while maintaining direct alignment with the anchor study.

The credibility items were rated in reference to the specific influencer identified by the respondent, ensuring construct relevance and reducing hypothetical response bias.

Table 9: Influencer Credibility Scale Items

Code	Item
IC1	This influencer is trustworthy.
IC2	This influencer is honest.
IC3	This influencer is an expert on the topic.

Source: Cheah et al. (2024)

3.5.3.3 Consumer Engagement "Dependent Variable 1 (DV1)"

Source: Cheung et al. (2022), COBRAs framework, adapted to measure engagement with influencer content directly.

Items: seven items (CON1–CON2, CTB1–CTB3, CRE1–CRE2)

adaptation status: theoretically grounded adaptation the three-dimensional COBRAs structure (consumption, contribution, creation) is retained, items are adapted to reference influencer content rather than brand pages.

Consumer engagement was measured using seven items organized across the three COBRAs dimensions of Cheung et al. (2022): consumption (2 items), contribution (3 items), and creation (2 items). While Cheung et al. (2022) original items referenced engagement with the brand pages specifically (e.g., I read posts on the brand pages of a brand endorsed by [SMI]'), the present study adapted the items to measure engagement with the influencer's own content directly.

This adaptation is theoretically justified for three reasons. First the study's independent variable is influencer over-endorsements by the influencer, making engagement with influencer content not downstream brand-page behavior the theoretically appropriate outcome. second measuring brand page engagement in an Algerian context is problematic because many endorsed brands in Algerian market maintain limited or inconsistent social media page activity, reducing the ecological validity of brand-page engagement items for this sample. Third, influencer content focused engagement items have been widely adapted in consumer engagement research (Hollebeek et al.,2014, Brodie et al., 2011) and are fully consistent with the cognitive-emotional-behavioral theoretical framework that underpins the COBRAs scale.

Table 10: Consumer Engagement Scale Items

Code	Item	Dimension
CON 1	I watch this influencer's content (videos, stories, and reels).	Consumption
CON 2	I read this influencer's posts and captions.	consumption
CTB1	I 'like' this influencer's posts.	Contribution
CTB 2	I 'comment' on this Influencer posts.	Contribution
CTB 3	I 'share' this influencer's posts with others.	Contribution
CRE 1	I create content (posts, stories) inspired by this influencer.	Creation
CRE 2	I recommend this influencer or their content to my friends.	Creation

Source: adapted from Cheung et al. (2022), Hollebeek (2014)

3.5.3.4 Purchase Intention "Dependent Variable 2 (DV2)"

Source: Spears & Singh (2004), adapted by Koay et al. (2023) and Cheah et al. (2024)

Adaptation status: Items aligned with Cheah et al. (2024) and Koay et al. (2023) adaptations for the influencer marketing context.

Purchase intention was measured using three items adapted from Spears & Singh (2004) validated purchase intention scale, which was originally developed in an advertising context and subsequently adapted for the influencer marketing context by Koay et al. (2023) and Cheah et al. (2024). The items capture the respondent's behavioral intention to purchase products recommended by the identified influencer across 3 temporal and probability dimensions: direct intention (PI1), consideration (PI2), and likelihood (PI3). This three items structure has demonstrated strong reliability and validity in multiple influencer marketing studies and directly mirrors the operationalization used in the anchor study, ensuring cross study comparability.

Table 11: Purchase Intention Scale Items

Code	Item
PI1	I intend to purchase products recommended by this influencer.
PI2	I would consider buying products recommended by this influencer.
PI3	It is likely that I will purchase product recommended by this influencer.

Source: Spears & Singh (2004), Koay et al. (2023), Cheah et al. (2024)

3.5.3.5 Parasocial Relationship "Moderator (W)"

Source: Chung and Cho (2017), adapted by Aw & Chuah (2021).

Items: nine items (PSR1 –PSR9)

Adaptation status: minor adaptation "influencer" placeholder replaced with "this influencer" to match the generic reference design of the questionnaire. All semantic meanings are fully preserved.

Parasocial relationship strength was measured using nine items drawing from Chung and Cho. (2017)

PSR scale as adapted for the social media influencer context by Aw and Chuah (2021). the scale captures 2 dimensions of parasocial relationship: Friendship (PSR1–PSR3), reflecting the emotional warmth, comfort, and affective bond the respondent experiences toward the influencer, and Understanding/Identification (PSR4–PSR9), reflecting the degree to which the respondent perceives mutual understanding, can anticipate the influencer's behavior, and

identifies with the influencer as a relatable figure. The original items used a named "influencer" referent, in this study all items were adapted to read "this influencer", referencing the specific individual identified by the respondent in the screening Section. One item (PSR5) was further adapted from 'I know the reasons for his/her behavior' to gender-neutral phrasing ('I know why this influencer behaves the way they do'), consistent with contemporary survey best practice and culturally appropriate for the Algerian context.

Table 12: Parasocial Relationship Scale Items

Code	Item	Dimension
PSR1	This influencer makes me feel comfortable, as if I am with a friend.	Friendship
PSR2	I would like to have a friendly chat with this influencer.	Friendship
PSR3	If this influencer were not famous, we would have been good friends.	Friendship
PSR4	I think I understand this influencer quite well.	Understanding
PSR5	I know why this influencer behaves the way they do.	Understanding
PSR6	I can feel this influencer's emotions in a certain situation.	Understanding
PSR7	This influencer seems to understand the kinds of things I want to know.	Understanding
PSR8	This influencer reminds me of myself.	Identification
PSR9	I can identify with this influencer.	Identification

Source: Chung and Cho (2017), Aw and Chuah (2021)

3.5.3.6 Measurement Scale Summary Table

Table 3.7 provides a consolidated overview of all measurement instruments used in this study, including the number of items, theoretical source, adaptation status, and item codes.

Table 13: Measurement Scale Summary Table

Construct	Role	items	scale	Source	Adaptation
Influencer over-endorsement	IV	4	5-pt Likert	Arora et al. (2022), Cheah et al. (2024)	Identical "no changes".
Influencer credibility	Mediator	3	5-pt Likert	Cheah et al (2024).	Identical "no changes".

Consumer engagement	DV1	7	5-pt Likert	Cheung et al. (2022).	adapted to influencer content COBRA's 3-dimensional structure is retained.
Purchase intention	DV2	3	5-pt Likert	Spears & Singh. (2004), Koay et al (2023).	Adapted for influencer context per Koay et al. (2023) and Cheah et al. (2024).
Parasocial relationship	Moderator	9	5-pt Likert	Chung et al (2017).Aw et al (2021)	[Influencer] → 'this influencer', PSR5 gender-neutralized
TOTAL	/	26	5-pt Likert	/	/

Source: Authors own compilation

3.5.4 Scale Type and Scoring

All 26 scale items use A 5-point Likert format with the following response anchors: 1 = Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4= Agree ,5= Strongly Agree. for all constructs, higher scores indicate stronger agreement with the item. for the influencer over-endorsement scale specifically, higher scores indicate greater perceived excess and incongruence in the influencer's brand partnership. For influencer credibility, higher scores indicate greater perceived trustworthiness and expertise. For engagement higher scores indicate a higher frequency and intensity of the respective engagement behavior. For purchase intention, higher scores indicate stronger intention to purchase. For parasocial relationships, higher scores indicate a stronger perceived relational bond with influencer.

3.5.5 Survey Language

A survey was administered in two languages: Arabic and English. Arabic was chosen as the primary language because it is the official language of Algeria and it is the dominant language of written communication for the majority of the target population. English was included as a secondary language because Algeria's educational system increasingly incorporates English instruction, and a significant proportion of the younger, more educated urban population particularly those active on social media platforms is more comfortable reading survey instruments in English, particularly when they include academic or marketing terminology.

the original English language items were translated into Arabic using a forward translation procedure with automated translation tools. the Arabic version was subsequently reviewed by

a bilingual academic colleague with the competence in both English and Arabic for semantic fidelity, idiomatic naturalness, and conceptual equivalence with the original items. Minor discrepancies identified during the review were resolved through discussion before the final versions were approved. Two separate questionnaire versions were created: one in Arabic and one in English. Respondents select their preferred language at the beginning of the survey and were automatically directed to the corresponding version, ensuring that all participants could complete the questionnaire in the language most comfortable for them.

3.6 Sampling Design

3.6.1 Target Population

The target population of this study is Algerian social media users aged 18 and above who: (1) follow at least one social media influencer on Instagram, TikTok, or Facebook, and (2) have been exposed to sponsored or promotional content from that influencer. This population definition is directly aligned with the study's subject matters, as it requires respondents to have first-hand experience as followers who have encountered influencer endorsements, which is the experiential basis necessary for valid responses to the influencer over-endorsement, influencer credibility, engagement, purchase intention, and parasocial relationship scales.

The lower age boundary of 18 is applied because the study involves commercial consumption decisions and purchase intention measurements, which require respondents to be adults capable of autonomous purchasing decisions. No upper age boundary is imposed, through it is anticipated that the sample will be predominantly young adults, given the age distribution of active social media users in Algeria, where DataReportal (2026) reports that 72% of social media users are aged between 18 and 34.

3.6.2 Sampling Method

A non-probability sampling design combining convenience sampling and snowball sampling was employed. Convenience sampling was used as the primary method because no comprehensive sampling frame exists for the target population. There is no official registry of Algerian social media influencer followers from which a probabilistic Sample could be drawn. This is a well-recognized and accepted limitation in influencer marketing research, where convenience and snowball sampling are the standard methods (Cheah et al. (2024), Sokolova Kefi (2020), Koay et al., 2023).

The survey was distributed through three channels: (1) the researchers personal social media accounts (Instagram, Facebook and WhatsApp), (2) The e-mail distribution list of the Higher

School of commerce (ESC), which provide access to a student population familiar with the concepts of marketing and consumer behavior, and (3) snowball referrals, whereby initial respondents were encouraged to forward the survey link to eligible individuals within their social networks. The combination of these three channels maximized the diversity of the convenience sample and reduced the concentration of responses within a single social network, partially mitigating the homophily bias inherent in snowball sampling.

3.6.3 Sample Size

The sample size refers to the number of valid respondents included in the final data analysis. In the present study, the online questionnaire initially generated 236 responses. After applying the screening criteria and removing responses that were invalid or not suitable for analysis, the final dataset consisted of 204 valid responses.

This sample size meets the methodological requirements for structural equation modeling. According to Barrett (2007) and Loehlin and Beaujean (2017), a minimum of 200 observations are generally recommended to ensure stable estimations and reliable results, particularly when the research model exhibits moderate complexity. The present sample of 204 responses therefore satisfies these conditions and is considered adequate for the rigorous implementation of PLS-SEM analysis, including the testing of mediation and moderation effect. The sample size also aligns with the practical constraints of a master's dissertation, where data collection was conducted over a limited period for this study is two weeks.

- **Justification of Sample Size in PLS-SEM Context**

Given that this study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS 4, it is necessary to verify that the sample size of 204 respondents meets the minimum requirements established by the relevant methodological literature. Three complementary estimation approaches are applied below, each grounded in a different statistical rationale.

- **The 10-Times Rule**

A widely used heuristic in PLS-SEM is the 10-times rule introduced by Barclay et al. (1995). This rule suggests that the minimum sample size should be at least ten times the largest of the following: (1) the number of indicators of the most complex construct, or (2) the highest number of structural paths directed at any endogenous variable.

In this study, the most complex construct in terms of measurement is Parasocial Relationship, which is operationalized using nine indicators (PSR1–PSR9). Regarding the structural model, both Consumer Engagement and Purchase Intention are influenced by four predictors, including the interaction term.

Applying this rule:

Minimum sample size = 10 × 9 = 90

With 204 valid responses, the dataset clearly exceeds this minimum requirement. However, as emphasized by Hair et al. (2021), this rule is only a basic guideline and may underestimate the sample size needed for detecting smaller or more complex effects.

- **Statistical Power Analysis**

A more rigorous approach to sample size determination is statistical power analysis, grounded in Cohen's (1992) framework. Statistical power refers to the probability of correctly rejecting a false null hypothesis, with 0.80 commonly considered an acceptable threshold in behavioral research.

Power calculations depend on three main parameters: expected effect size, significance level ($\alpha = 0.05$), and the maximum number of predictors in the model.

In the present model, the most complex structural equation includes four predictors. Based on empirical results, the observed effects range from moderate to moderately strong. According to Cohen's classification, a medium effect size corresponds to $f^2 = 0.15$.

Under these conditions, power analysis indicates that the required minimum sample size depends on model complexity and is typically within acceptable ranges for structural equation modeling applications. Even under stricter assumptions of very small effects ($f^2 = 0.02$), the required sample size increases substantially. However, given that the empirical results support at least medium-level effects, the sample of 204 observations is more than adequate to achieve sufficient statistical power.

- **Inverse Square Root Method**

A more recent and model-specific approach for determining minimum sample size in PLS-SEM is the inverse square root method proposed by Kock and Hadaya (2018). This method estimates the minimum required sample size based on the minimum path coefficient expected in the structural model.

The formula is expressed as:

$$N_{min} = \left(\frac{t}{\rho_{min}}\right)^2$$

Where:

- $t$represents the critical t-value corresponding to the selected significance level,
- ρ_{min}represents the minimum expected path coefficient.

Following common recommendations in PLS-SEM studies, a minimum detectable path coefficient of 0.20 was assumed, representing a small-to-moderate effect size. Using a two-tailed significance level of 0.05 ($t = 1.96$):

$$N_{min} = \left(\frac{1.96}{0.20}\right)^2 \approx 96$$

Thus, the minimum required sample size is approximately 96 observations. Since the present study includes 204 valid responses, the sample size exceeds the recommended threshold and provides adequate statistical power for detecting meaningful structural relationships within the model.

Overall, the sample size of 204 valid responses meets all recommended methodological criteria for PLS-SEM analysis. It provides sufficient statistical power for detecting structural relationships of practical relevance within the model.

3.7 Data Collection

3.7.1 Collection Procedure

Data collection followed a structured four-steps procedure to ensure response quality, ethical integrity, and clean data. In step 1, the finalized bilingual questionnaire was uploaded to Google Forms with branching logic activated for the screening questions: Respondents selecting ‘No’ to question S1 (Have you ever seen sponsored ads from any influencer?) Were automatically redirected to a survey end page preventing ineligible data from entering the dataset.

In Step 2, the survey link was distributed simultaneously through the three channels described in Section 3.6.2 Each distribution message included a brief description of the study’s academic purpose and confirmed that responses were anonymous and voluntary. In Step 3, responses were monitored on an ongoing basis through the Google Forms response dashboard. Incomplete

submissions (respondents who answered screening questions but did not complete all scale sections) were flagged for exclusion during the data cleaning phase. In step 4, once the target of 236 responses were reached, the survey was closed, and the valid responses data were exported to SPSS and SmartPLS 4 for analysis.

Data cleaning prior to analysis involved four steps: (1) removal of incomplete responses (any response missing more than 10% of scale items), (2) removal of the straight-line responses (respondents who select the same scale point for all 26 items, indicating inattentive responding), (3) removal of responses from ineligible participants (Those who passed the screening questions but whose open answers indicate no genuine influencer-following behavior), and (4) assessment of response time outliers, (extremely fast completion suggesting inattentive responding).

3.7.2 Survey Platform: Google Forms

Google Forms was selected as the survey administration platform for four reasons: (1) it is freely accessible without institutional subscription requirements. (2) it is compatible with all devices and operating systems, maximizing accessibility for Algerian respondents who primarily access the Internet via smartphones, (3) it supports branching logic for the screening questions, and (4) it exports data directly to Google Sheets and CSV format, facilitating clean data transfer to SPSS and Smart-PLS 4.

Arabic text was entered directly into the form fields using right-to-left formatting where available. Each scale section was presented on a separate page within Google Forms to maintain respondent focus on one construct at a time and to prevent respondents from reviewing and adjusting previous answers after seeing subsequent items. A progress bar was activated to indicate survey completion percentage.

3.7.3 Period of Data Collection

Data collection for this study was conducted over a period of approximately two weeks. The online questionnaire was distributed through social media platforms and messaging applications, targeting Algerian social media users, who had been exposed to influencer sponsored content. A total of 236 responses were received during this period. Following the application of the screening criteria and the exclusion of incomplete or invalid response, 204 responses were retained for analysis, representing a response validity rate of 86.4% .The 32 excluded responses corresponded to cases where respondent either did not confirm prior exposure to influencer sponsored content via the filter question or did not meet the study's participation conditions.

3.8 Data Analysis Method

The collected data were analyzed using two statistical software packages: IBM SPSS Statistics version 26 and SmartPLS version 4. Each software was employed at a specific stage of the analysis, following a two-phase analytical procedure commonly recommended in quantitative research in marketing and consumer behavior. (Hair et al., 2019)

In the first phase, SPSS was used to conduct the preliminary analysis. This included the computation of descriptive statistics and frequency distributions of the sociodemographic and contextual variables, namely gender, age, preferred language, most frequently used social media platform, frequency of following influencer content and influencer domain. In addition, SPSS was used to assess the reliability of the measurement scales using Cronbach's Alpha and to examine the distribution of the data through skewness and kurtosis indicators.

In the second phase, SmartPLS version 4 was used to perform Partial Least Squares Structural Equation Modeling (PLS-SEM). This method was selected for three main reasons. First, the conceptual framework of this study is relatively complex, involving multiple latent constructs, direct relationships, a mediation mechanism through influencer credibility, and a moderation mechanism through parasocial relationship, which exceeds the capability of traditional regression analysis (Kock & Hadaya, 2018). Second, PLS-SEM is appropriate for studies with both explanatory and predictive objectives, which aligns with the purpose of the present research. Third, PLS-SEM does not require strict multivariate normality and is suitable for moderate sample sizes, making it well-suited to this study (Hair et al., 2019).

The PLS-SEM analysis followed a two-stage procedure recommended by Hair et al. (2019). In the first stage, the measurement model was evaluated to assess the reliability and validity of the constructs. This involved four criteria: indicator reliability (outer loadings), internal consistency reliability (Cronbach's Alpha, rho_A, and composite reliability), convergent validity (Average Variance Extracted, AVE), and discriminant validity (Heterotrait-Monotrait ratio, HTMT).

In the second stage, the structural model was assessed to test the hypothesized relationships between the constructs. This evaluation was conducted using the bootstrapping method with 5,000 subsamples to estimate path coefficients and assess their statistical significance. The structural model assessment included the examination of collinearity (Variance Inflation Factor, VIF), explanatory power (coefficient of determination, R^2), effect size (f^2), predictive relevance (Q^2), and the significance of path coefficients (β, t-values, and p-values). Mediation effects were evaluated using specific indirect effects, while moderation effects were tested through the inclusion of an interaction term. The moderating effect was operationalized using the two-stage

approach recommended by Hair et al. (2019) for reflective constructs in PLS-SEM. In the first stage, the main effects model was estimated without the interaction term, and latent variable scores for PSR and IC were extracted. In the second stage, the interaction term (PSR × IC) was computed as the product of these latent variable scores and included in the structural model as the moderating construct. This approach is widely used in PLS-SEM because it provides a flexible and robust way to estimate interaction effects using latent variable scores, particularly in complex structural models. It is commonly preferred over the product indicator approach in reflective measurement contexts (Henseler & Chin, 2010).

Overall, these two-phases analytical approach combining SPSS for preliminary analysis and SmartPLS for structural modeling ensures both methodological rigor and alignment with the research objective of this study.

3.9 Ethical Considerations

This study adhered to established ethical standards for academic research involving human participants through all stages of design, data collection, and analysis. The following ethical principles were observed.

Informed consent was obtained from all participants prior to their engagement with the survey. The consent statement, displayed on the first page of the questionnaire, clearly described the study's academic purpose. (a dissertation for the Higher School of Commerce), confirmed the voluntary and anonymous nature of participation, stated that respondents could withdraw at any time without consequence, and indicated that data would be used solely for academic purposes. Only respondents who continued past the consent page were included in the sample.

Anonymity and confidentiality were maintained throughout the research process. The survey did not collect any personally identifiable information: no names, e-mail addresses, phone numbers or IP addresses were recorded. The open-ended question asking for the influencer name was used solely to anchor respondents to a specific individual for internal questionnaire validity purposes and was not analyzed or reported. All responses data were stored on a password-protected institutional Google Drive account accessible only to the researchers and their supervisor.

Voluntary participation was ensured by the absence of any incentive or pressure to complete the survey. No monetary rewards, academic credits, or social obligations were attached to participation. The survey was described as taking approximately 5 minutes to complete, providing an accurate expectation for the time commitment required.

The data collected were used exclusively for the academic purpose stated in the consent form. No data were shared with Spotlight agency, sponsoring brands, or any third parties. The research findings will be reported at the aggregate level only, with no individual responses identifiable in the results or discussion.

The study posed no physical, psychological, or reputational risk to participants. All questions concerned consumer perceptions and online behaviors, which are not sensitive topics requiring enhanced ethical safeguards. The research was conducted in compliance with the ethical guidelines of the Higher School of Commerce and with the data protection principle applicable in Algeria.

This chapter presented the methodological framework adopted in the present study. A quantitative and deductive approach was used through a cross-sectional online survey targeting Algerian social media users who follow influencers and have been exposed to sponsored or promotional content.

The questionnaire included five validated constructs: influencer over endorsement, influencer credibility, consumer engagement, purchase intention, and parasocial relationship. These constructs were measured using 26 items adapted from established scales in the literature. All items were measured using a 5-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. The questionnaire was provided in both Arabic and English to ensure better accessibility for respondents.

Data were collected using convenience and snowball sampling. The online questionnaire initially generated 236 responses, of which 204 valid responses were retained after applying the screening and cleaning procedures. The data analysis was conducted using SPSS version 26 for preliminary analysis and SmartPLS version 4 for PLS-SEM analysis. The analysis included the assessment of the measurement model, the evaluation of the structural model and the testing of mediation and moderation effects.

Finally, the study respected academic ethical principles, including voluntary participation, anonymity, and the use of data for academic purposes only. The next chapter presents the statistical analysis, results and interpretation of the findings.

Chapter 4: Research Findings

Chapter 4: Research Findings

Introduction

This chapter presents the empirical findings of the study, which examines the effect of influencer over-endorsement on consumer engagement and purchase intention among Algerian social media users, with influencer credibility as a full mediating variable and parasocial relationship as a moderating variable. The chapter is structured around a clear analytical sequence, designed to ensure methodological rigor and transparency at each stage of this analysis.

The chapter is organized as follows. Section 4.1 provides a descriptive analysis of the data, beginning with the data preparation process and followed by a detailed profile of the respondents based on six sociodemographic and contextual variables. Section 4.2 presents the preliminary checks conducted prior to the structural analysis, namely the Cronbach's Alpha reliability test and the normality test. Section 4.3 evaluates the PLS-SEM model in two sequential stages: First, the measurement model is assessed to verify the reliability and validity of all measurement scales. Second, the structural model is evaluated to test the direct effects, mediation effects, and moderation effects hypothesized in the conceptual framework. Section 4.4 synthesizes all hypothesis testing results into a comprehensive summary table and discusses the main findings in relation to existing literature. The chapter ends with a synthesis that recaps the key findings and provides a transition toward Chapter 5.

All statistical analysis were conducted using SPSS version 26 for the preliminary checks and SmartPLS version 4 for the PLS-SEM analysis. The bootstrapping procedure applied throughout the structural analysis used 5,000 subsamples, in accordance with the recommendations of Hair et al. (2019). The final sample retained for analysis consisted of 204 valid responses collected through a bilingual online questionnaire distributed to Algerian social media users.

4.1 Descriptive Analysis

4.1.1 Data Preparation

Before conducting the statistical analysis, the collected data were first prepared and verified. This step is essential in quantitative research, as it helps ensure the quality, reliability, and consistency of the data set before applying statistical tests. The preparation process included cleaning the responses, coding the variables, and preparing the data for analysis using SPSS and SmartPLS 4, (Evrard et al., 2003).

4.1.1.1 Response Cleaning

The online questionnaire initially generated a total of 236 responses. After applying the screening criteria and checking the validity of the answers, 32 responses were excluded from the dataset. These excluded cases mainly concerned respondents who did not meet the required participation conditions or whose answers were not suitable for further statistical analysis.

As a result, the final dataset consisted of 204 valid responses. This final sample was retained to examine the relationships between the main variables of the study: influencer over-endorsement, Influencer credibility, consumer engagement, purchase intention, and parasocial relationship.

4.1.1.2 Data Coding and Processing

The retained data were coded and processed using SPSS and SmartPLS 4. A systematic coding procedure was applied in order to transform the questionnaire responses into variables suitable for statistical analysis. This included the coding of demographic variables such as age, gender, main social media platform, and frequency of exposure to influencer content, as well as the coding of the measurement items related to the latent constructs of the research model.

The study used a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. Since the questionnaire did not include any reverse-coded items, no reverse recoding was required. After reviewing the dataset, no missing values were identified among the retained responses, and no major inconsistencies were detected. Therefore, the cleaned and coded dataset was considered appropriate for descriptive analysis, reliability testing, and PLS-SEM analysis.

4.1.2 Respondents Profile

The objective of this section is to present the general profile of the respondents based on the main sociodemographic and contextual variables included in the study. These variables include gender, age, questionnaire language, main social media platform used, frequency of exposure to influencer content, and the main domain of the influencer followed by the respondent.

Table 14: Gender of Respondents

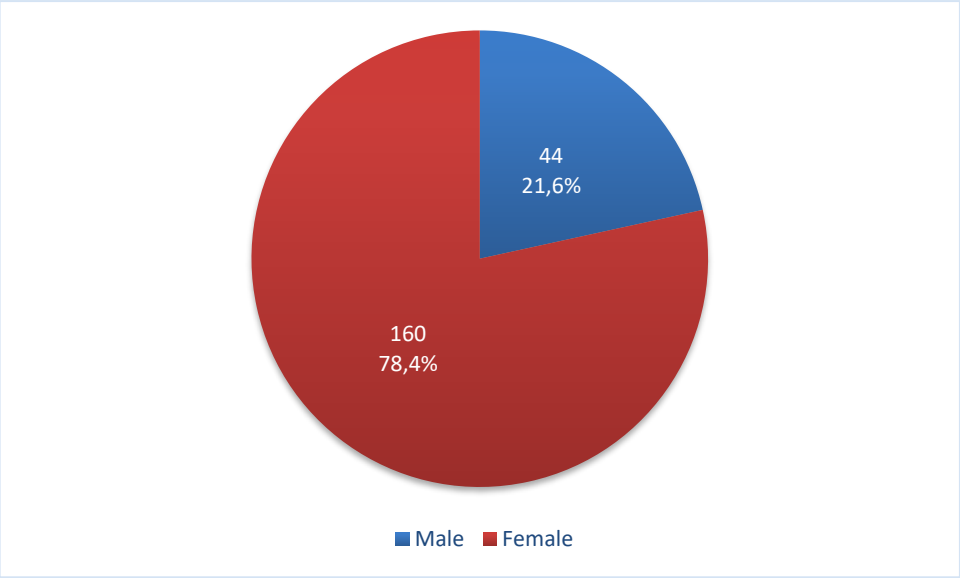
What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	44	21,6	21,6	21,6

	Female	160	78,4	78,4	100,0
	Total	204	100,0	100,0	

Source: Elaborated based on SPSS results

Figure 4: Gender of Respondents



Source: Elaborated based on SPSS results

The sample is mainly composed of female respondents, who represent 78.4% of the total sample compared with 21.6% male respondents. This indicates a clear female predominance in the respondent profile. This distribution is relevant to the context of the study, since influencer marketing content, particularly in domains such as fashion, beauty and lifestyle often attracts higher levels of female attention and engagement (Djafarova & Rushworth, 2017).

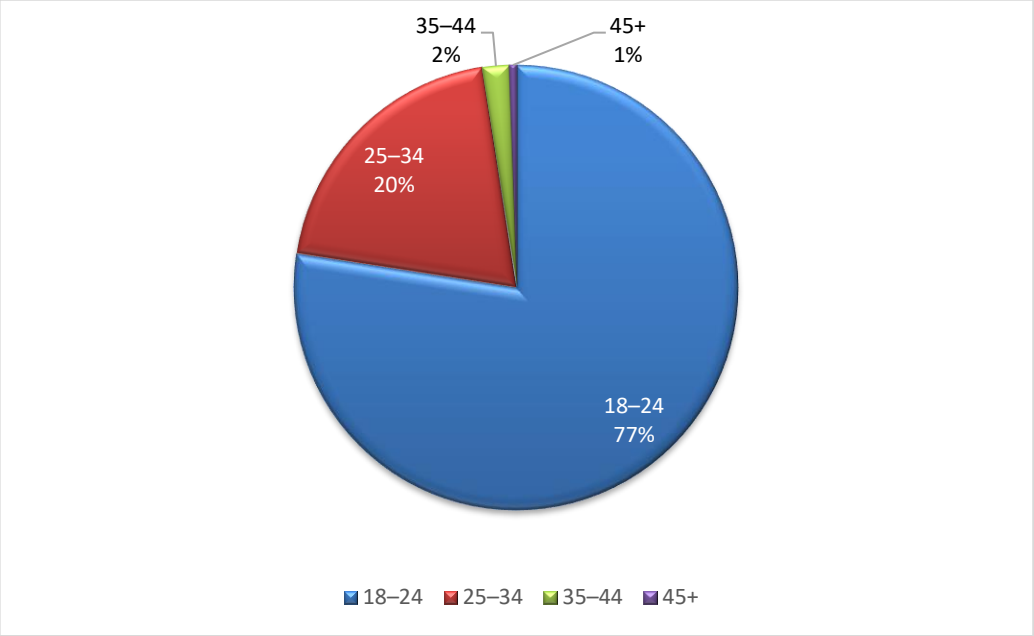
Table 15: Age of Respondents

What is your age?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18–24	158	77,5	77,5	77,5
	25–34	41	20,1	20,1	97,5
	35–44	4	2,0	2,0	99,5
	+45	1	,5	,5	100,0
	Total	204	100,0	100,0	

Source: Elaborated based on SPSS results

Figure 5:Age of Respondents



Source: Elaborated based on SPSS results.

The age distribution shows that the sample is strongly concentrated among young respondents. The largest group consists of participants aged 18–24, representing 77.5% of the total sample. This is followed by respondents aged 25–34, who account for 20.1%. Respondents aged 35–44 represent only 2.0%, while those aged 45 and above account for 0.5%. These results indicate that the study mainly captures the perceptions of young Algerian social media users, which is consistent with the context of influencer marketing, as younger consumers are generally more active on social media platforms and more exposed to influencer content (Lou & Yuan, 2019).

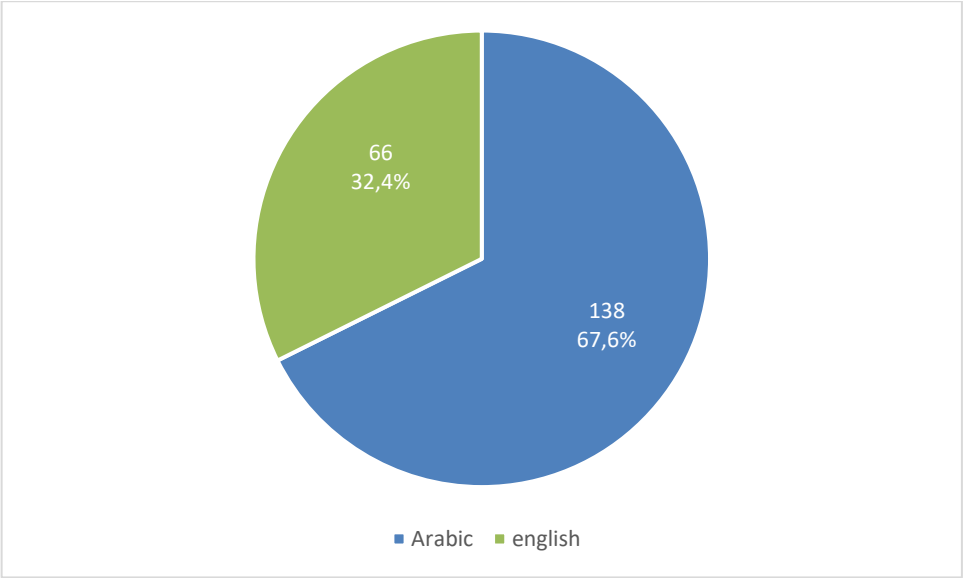
Table 16: Preferred Language of Respondents

Please select your preferred language

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Arabic	138	67,6	67,6	67,6
	English	66	32,4	32,4	100,0
	Total	204	100,0	100,0	

Source: Elaborated based on SPSS results

Figure 6:Preferred Language of Respondents



Source: Elaborated based on SPSS results

The results showed that the majority of respondents completed the questionnaire in Arabic, representing 67.6% of the total sample. In contrast, 32.4% of respondents selected the English version. This indicates that the questionnaire mainly reached Arabic speaking respondents, which is appropriate for the Algerian context of the study. At the same time, the presence of English responses suggests that the bilingual format helped make the questionnaire accessible to a wider group of participants.

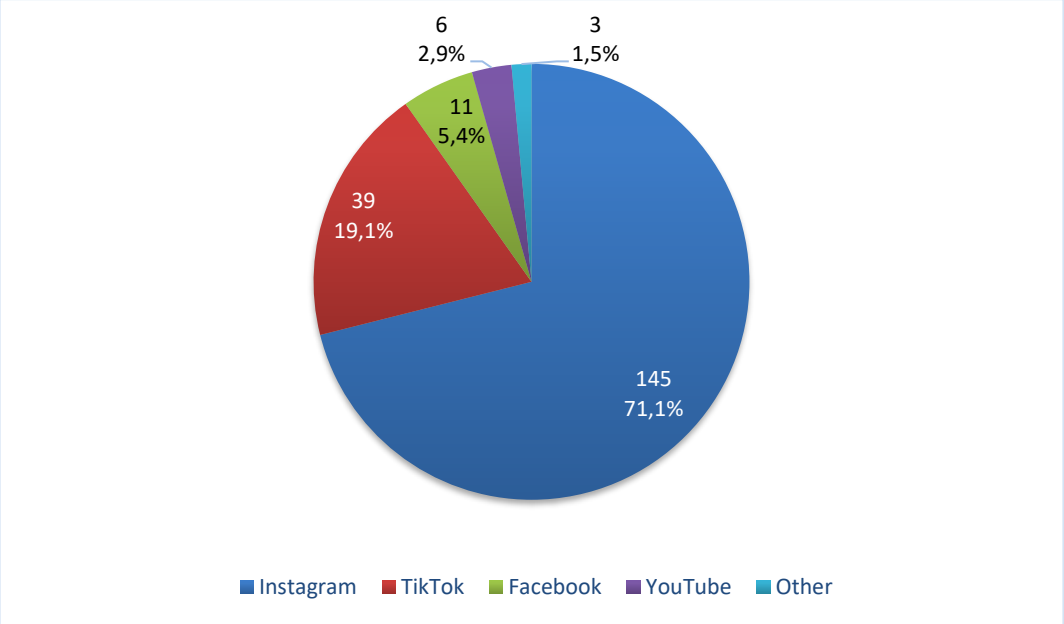
Table 17: Most Frequently Used Social Media Platform

Which social media platform do you use most frequently?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Instagram	145	71,1	71,1	71,1
	TikTok	39	19,1	19,1	90,2
	Facebook	11	5,4	5,4	95,6
	YouTube	6	2,9	2,9	98,5
	Other	3	1,5	1,5	100,0
	Total	204	100,0	100,0	

Source: Elaborated based on SPSS results

Figure 7: Most Frequently Used Social Media Platform



Source: Elaborated based on SPSS results

The results show that Instagram is the dominant platform among respondents, representing 71.1% of the total sample. TikTok comes second with 19.1%, while Facebook represents 5.4%. YouTube represents 2.9%, and other platforms account for only 1.5%.

These findings indicate that the respondents are mainly exposed to influencer content through Instagram, followed by TikTok. This is consistent with the context of influencer marketing. As both platforms are highly visual and widely used for influencer-brand collaborations, sponsored posts, product recommendations, and short form promotional content (Leung et al., 2022).

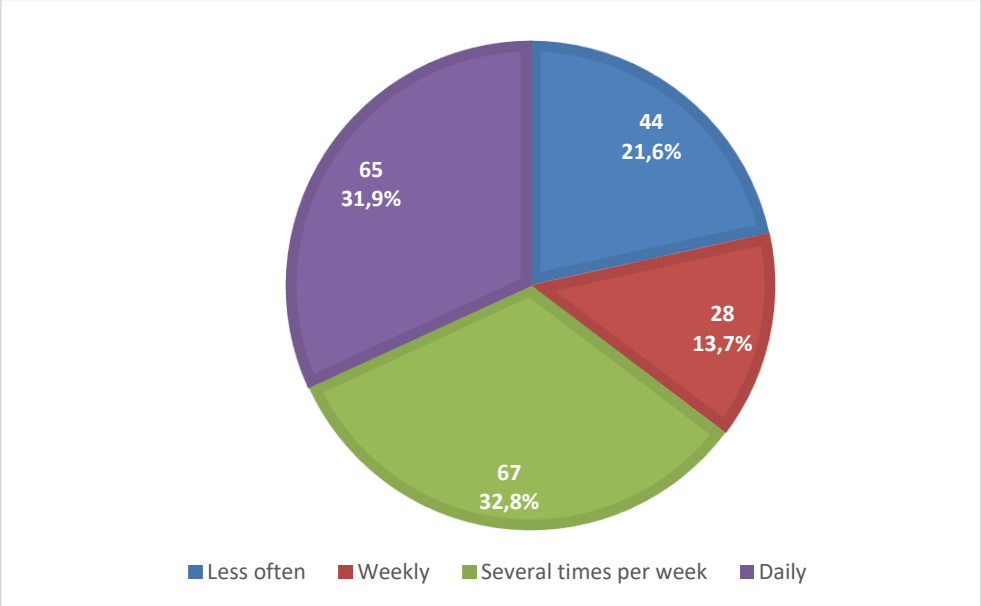
Table 18: Frequency of following influencer content

How often do you follow influencer content?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less often	44	21,6	21,6	21,6
	Weekly	28	13,7	13,7	35,3
	Several times per week	67	32,8	32,8	68,1
	Daily	65	31,9	31,9	100,0
	Total	204	100,0	100,0	

Source: Elaborated based on SPSS results

Figure 8: Frequency of following influencer content



Source: Elaborated based on SPSS results

The results show that most respondents are regularly exposed to influencer content. Specifically, 32.8% of respondents follow influencer content several times per week, while 31.9% follow it daily. Together, these two categories represent 64.7% of the total sample, indicating that nearly 2/3 of respondents are frequently exposed to influencer content.

In contrast, 21.6% of respondents follow influencer content less often, and 13.7% follow it weekly. These findings confirm that the sample is relevant to the study, as most respondents have regular contact with influencer content and are therefore able to evaluate influencer over-endorsement, influencer credibility, engagement, purchase intention, and parasocial relationship.

Table 19: Main domain of the influencer

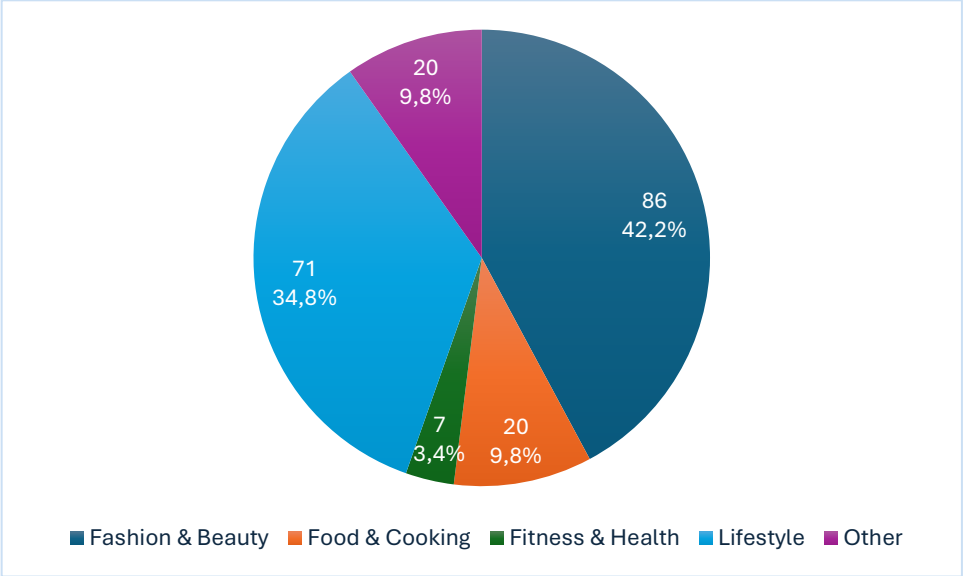
Main Domain of the Influencer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fashion & Beauty	86	42,2	42,2	42,2
	Food & Cooking	20	9,8	9,8	52,0
	Fitness & Health	7	3,4	3,4	55,4
	Lifestyle	71	34,8	34,8	90,2

Other	20	9,8	9,8	100,0
Total	204	100,0	100,0	

Source: Elaborated based on SPSS results

Figure 9: Main domain of the influencer



Source: Elaborated based on SPSS results

The results show that the most represented influencer domain is Fashion & Beauty, accounting for 42.2% of the sample. This is followed by Lifestyle, which represents 34.8% of respondents. Food & Cooking and other domains each account for 9.8%, while Fitness & Health represents only 3.4%.

These findings indicate that most respondents referred to influencers operating in highly visual and commercialized domains, especially fashion, beauty, and lifestyle. This is relevant to the study because these domains are frequently associated with brand collaborations, sponsored content, and product recommendations. Therefore, respondents are likely to be familiar with influencer endorsement practices and able to evaluate the effects of influencer over-endorsement on influencer credibility, engagement, and purchase intention.

4.2 Preliminary Checks

Before examining the relationships between the variables of the research model and estimating the structural model, it is necessary to verify the reliability of the measurement scales. This step ensures that the latent constructs used in this study, namely influencer over-endorsement

influencer credibility, consumer engagement, purchase intention, and parasocial relationship, are measured consistently through questionnaire items.

Following the methodological recommendations commonly applied in quantitative research, the reliability of the measurement scales was assessed using Cronbach's Alpha.

4.2.1 Reliability Test

The reliability of the measurement scales was evaluated through Cronbach's Alpha coefficient, which is widely used to assess the internal consistency of items belonging to the same latent construct. According to Hair et al. (2010), Cronbach's alpha value greater than 0.70 is generally considered acceptable, indicating that the items measure the same underlying concept in a consistent manner.

The following table presents the Cronbach's alpha values obtained for each construct of the study.

Table 20: Cronbach's Alpha Coefficients of the Measurement Scales

Construct	Number of Items	Cronbach's Alpha
Influencer Over-Endorsement	4	0.844
Influencer Credibility	3	0.881
Consumer Engagement	7	0.825
Purchase Intention	3	0.904
Parasocial Relationship	9	0.923

Source: Elaborated based on SPSS results

The results show that all measurement scales present satisfactory internal consistency, as all Cronbach's alpha values exceed the recommended threshold of 0.70. Influencer over-endorsement recorded an alpha value of 0.844 while influencer credibility reached 0.881, indicating good reliability for both constructs. Consumer engagement also demonstrated acceptable reliability with an alpha value of 0.825.

Moreover, purchase intention and parasocial relationship showed particularly strong reliability, with Cronbach's alpha values of 0.904 and 0.923, respectively. These high values indicate that the items used to measure these two constructs are highly consistent. Overall, the results confirm that the measurement scales used in this study are reliable and suitable for further statistical analysis.

4.2.2 Normality Test

The normality test was conducted to examine the distribution of the measurement items used in the study. This test provides descriptive information through indicators such as the mean, variance, standard deviation, minimum and maximum values, skewness, and kurtosis. Skewness indicates whether the distribution of responses is asymmetrical, while kurtosis shows whether the distribution is too peaked or too flat. In general, skewness and kurtosis values between -2 and +2 are considered acceptable for assessing normality in social science research (George & Mallery, 2010).

The following table presents the normality results for all measurement items included in the research model.

Table 21:Normality Test of Measurement Items

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
IOE1	204	1	5	3,46	1,201	1,442	-,502	,170	-,615	,339
IOE2	204	1	5	3,19	1,319	1,739	-,153	,170	-1,126	,339
IOE3	204	1	5	3,42	1,239	1,536	-,391	,170	-,856	,339
IOE4	204	1	5	2,71	1,532	2,347	,273	,170	-1,433	,339
IC1	204	1	5	3,00	1,191	1,419	-,088	,170	-,837	,339
IC2	204	1	5	2,91	1,179	1,391	,027	,170	-,880	,339
IC3	204	1	5	2,92	1,394	1,945	,020	,170	-1,256	,339
CON1	204	1	5	3,10	1,321	1,744	-,234	,170	-1,133	,339
CON2	204	1	5	2,42	1,286	1,654	,519	,170	-,876	,339
CTB1	204	1	5	2,45	1,391	1,934	,385	,170	-1,266	,339
CTB2	204	1	5	1,50	,985	,970	2,108	,170	3,645	,339
CTB3	204	1	5	1,71	1,115	1,243	1,485	,170	1,093	,339
CRE1	204	1	5	1,50	,995	,990	2,075	,170	3,433	,339
CRE2	204	1	5	2,24	1,311	1,718	,696	,170	-,743	,339

PI1	204	1	5	2,36	1,210	1,464	,519	,170	-,692	,339
PI2	204	1	5	2,59	1,218	1,484	,276	,170	-,967	,339
PI3	204	1	5	2,59	1,254	1,573	,354	,170	-,889	,339
PSR1	204	1	5	2,38	1,251	1,566	,564	,170	-,712	,339
PSR2	204	1	5	2,32	1,336	1,785	,614	,170	-,883	,339
PSR3	204	1	5	2,21	1,367	1,869	,767	,170	-,722	,339
PSR4	204	1	5	2,36	1,281	1,640	,598	,170	-,753	,339
PSR5	204	1	5	2,55	1,299	1,687	,382	,170	-,976	,339
PSR6	204	1	5	2,46	1,303	1,698	,431	,170	-,964	,339
PSR7	204	1	5	2,33	1,277	1,631	,510	,170	-,984	,339
PSR8	204	1	5	1,93	1,201	1,444	1,045	,170	-,148	,339
PSR9	204	1	5	2,36	1,326	1,759	,511	,170	-,975	,339
Valid N (listwise)	204									

Source: Elaborated based on SPSS results

The results show that most measurement items have skewness and kurtosis values within the commonly accepted range of -2 to +2, indicating an acceptable distribution for the majority of the data. However, two consumer engagement items, CTB2 and CRE1, present skewness and kurtosis values above this threshold. These two items correspond to highly active engagement behaviors: commenting on the influencer's posts and creating content inspired by the influencer.

This result is understandable because consumer engagement is not expressed at the same level across all behavioral dimensions. Passive engagement behaviors, such as watching videos, stories and reels (CON1) or reading posts and captions (CON2), are easier and more frequent among social media users. In contrast, active contribution and creation behaviors, such as commenting, sharing, recommending, or creating content, require more effort and personal involvement. Therefore, many respondents may have selected lower response options for CTB2 and CRE1, which explains the concentration of responses toward the lower end of the scale.

Although CTB2 and CRE1 present skewness and kurtosis values above the ±2 threshold, this result remains acceptable because these items reflect highly active engagement behaviors that respondents may perform less frequently. Thus, the non-normality observed in these items

reflects the natural distribution of online engagement behavior rather than a measurement problem.

Overall, the data do not present serious normality concerns for the purpose of this study. Moreover, the use of PLS-SEM through SmartPLS is appropriate, as this method does not require strict normality of the data and is suitable for analyzing survey data measured with Likert scales.

4.3 Evaluation of the PLS-SEM Model

To examine the relationships between the variables of the research model, this study used Partial Least Squares Structural Equation Modelling (PLS-SEM) through SmartPLS 4. This method is appropriate for the present research because the model includes several latent constructs, a mediating variable, and a moderating variable. PLS-SEM is also suitable for studies with explanatory and predictive objectives, and it performs well with moderate sample sizes. In this study, the final sample consisted of 204 valid respondents, which is considered appropriate for PLS-SEM analysis.

The main objective of this analysis is to test the effect of influencer over-endorsement on influencer credibility, consumer engagement, and purchase intention, while examining the mediating role of influencer credibility and the moderating role of parasocial relationship. The evaluation of the PLS-SEM model was conducted in two main stages. First, the measurement model was assessed in order to verify the reliability and validity of the measurement scales. Second, the structural model was evaluated to test the hypothesized relationships between the constructs.

4.3.1 Evaluation of the Measurement Model

Before testing the structural relationships between the latent variables, it is necessary to assess the quality of the measurement model. This step verifies whether each item correctly measures the construct to which it belongs and whether the constructs are sufficiently reliable and valid. In PLS-SEM, the evaluation of the measurement model generally includes indicator reliability, internal consistency reliability, Convergent validity and discriminant validity.

4.3.1.1 Indicator Reliability

The first step in evaluating the measurement model consists of examining the reliability of the individual indicators. This is assessed through the outer loadings of each item on its corresponding construct. An outer loading represents the strength of the relationship between an item and the latent variable it is intended to measure.

According to Hair et al. (2019), outer loadings above 0.70 are generally considered satisfactory. However, items with loadings between 0.40 and 0.70 may be retained when they are theoretically important and when the overall reliability and convergent validity of the construct remain acceptable. Items with loadings below 0.40. Are usually considered weak and may be removed.

The following table presents the outer loadings of the indicators retained in the measurement model.

Table 22: Outer Loadings of the Measurement Items

Items	CE	IC	IOE	PI	PSR	PSR x IC
CON1	0.643					
CON2	0.666					
CRE1	0.537					
CRE2	0.811					
CTB1	0.806					
CTB2	0.682					
CTB3	0.727					
IC1		0.934				
IC2		0.926				
IC3		0.848				
IOE1			0.835			
IOE2			0.866			
IOE3			0.837			
IOE4			0.774			
PI1				0.899		
PI2				0.943		

PI3				0.907		
PSR1					0.826	
PSR2					0.781	
PSR3					0.839	
PSR4					0.804	
PSR5					0.688	
PSR6					0.798	
PSR7					0.774	
PSR8					0.770	
PSR9					0.788	
PSR x IC						1.000

Source: Elaborated based on SmartPLS results.

The initial outer loading results showed that most indicators presented acceptable values above the recommended threshold of 0.70. Influencer over-endorsement, influencer credibility, purchase intention, and most parasocial relationship items. demonstrated satisfactory indicator reliability.

for influencer over-endorsement, all four indicators exceeded the recommended threshold, with loadings ranging from 0.774 to 0.866. Influencer credibility also showed strong loadings, ranging from 0.848 to 0.934, while purchase intention recorded high loadings ranging from 0.899 to 0.943. These results indicate that the indicators of these constructs strongly represent their respective latent variables.

For parasocial relationship, most items also showed acceptable loadings. Only PSR5 was slightly below the recommended threshold with a loading of 0.688. Since this value is close to 0.70 and the item is theoretically relevant to the parasocial relationship construct, it was retained.

Regarding consumer engagement, several indicators presented loadings below 0.7, namely CON1 = 0.643, CON2 = 0.666, CRE1 = 0.537 and CTB2 = 0.682. Among these indicators

CRE1 recorded the lowest outer loading. This suggests that CRE1 represented the consumer engagement construct less strongly than the other engagement indicators.

At this stage, no item was removed based only on outer loading values, because all indicators remained above the minimum acceptable threshold of 0.40. However, CRE1 was identified as the weakest indicator and was therefore examined further in the next step of the measurement model evaluation, particularly during the assessment of convergent validity.

4.3.1.2 Internal Consistency Reliability

The internal consistency reliability of the constructs was assessed using Cronbach's Alpha, rho_A, and composite reliability rho_C. These indicators are commonly used in PLS-SEM to evaluate whether the items associated with the same construct are consistent with one another. According to Hair et al. (2019) values above 0.70 are considered satisfactory.

Table 23: Internal consistency Reliability of the constructs

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
CE	0.826	0.850	0.870	0.492
IC	0.887	0.897	0.930	0.817
IOE	0.855	0.890	0.898	0.687
PI	0.904	0.907	0.940	0.840
PSR	0.923	0.929	0.936	0.618

Source: Elaborated based on SmartPLS results.

The initial results of construct reliability and validity show that all constructs exceeded the recommended reliability threshold of 0.70. Cronbach's alpha values ranged from 0.826 to 0.923, while composite reliability values ranged from 0.870 to 0.940. These results indicate that all constructs demonstrated satisfactory Internal consistency.

However, the convergent validity results showed that Consumer Engagement recorded an AVE value of 0.492, which is slightly below the recommended threshold of 0.50. In comparison, all other constructs exceeded the required AVE threshold, with values ranging from 0.618 to 0.840.

Since the previous outer loading results showed that CRE1 had the lowest loading among the consumer engagement indicators (0.537), this item was identified as the main source of the

weak convergent validity. Therefore, CRE1 was removed from the model. This decision is methodologically acceptable because indicators with loadings between 0.40 and 0.70 may be removed when their deletion improves construct validity. Moreover, the Consumer Engagement construct remained theoretically covered, as it still included indicators representing consumption, contribution and creation-related behaviors.

4.3.1.3 Final Indicator Reliability After Removing CRE1

Based on the initial measurement model assessment, an item refinement procedure was conducted to improve the quality of the consumer engagement construct. The indicator CRE1 was excluded because it showed the weakest contribution to its construct and prevented consumer engagement from reaching the recommended level of convergent validity. After this adjustment, the PLS-SEM algorithm was run again to verify whether the revised measurement model met the required reliability and validity criteria. The final results are presented in the following tables.

Table 24: Final Outer Loadings After Item Refinement

	CE	IC	IOE	PI	PSR	PSR x IC
CON1	0.678					
CON2	0.666					
CRE2	0.821					
CTB1	0.828					
CTB2	0.641					
CTB3	0.722					
IC1		0.934				
IC2		0.926				
IC3		0.848				
IOE1			0.834			
IOE2			0.865			
IOE3			0.835			

IOE4			0.777			
PI1				0.899		
PI2				0.943		
PI3				0.907		
PSR1					0.827	
PSR2					0.781	
PSR3					0.839	
PSR4					0.803	
PSR5					0.686	
PSR6					0.797	
PSR7					0.774	
PSR8					0.768	
PSR9					0.789	
PSR x IC						1.000

Source: Elaborated based on SmartPLS results.

After removing CRE1, the final outer loading results showed that the measurement model remained satisfactory. Most indicators exceeded the recommended threshold of 0.70. The retained Consumer Engagement indicators continued to represent the multidimensional nature of the construct, including consumption, contribution and creation-related behaviors.

Although CON1, CON2, and CTB2 remained slightly below 0.70, their values were close to the recommended threshold and above the minimum acceptable value of 0.40. These indicators were retained due to their theoretical relevance and because the Consumer Engagement construct achieved satisfactory convergent validity after item refinement.

4.3.1.4 Final Internal Consistency Reliability After Removing CRE1

Table 25: Internal Consistency Reliability of the Constructs

Constructs	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Decision
CE	0.824	0.845	0.871	Accepted
IC	0.887	0.898	0.930	Accepted
IOE	0.855	0.890	0.897	Accepted
PI	0.904	0.907	0.940	Accepted
PSR	0.923	0.929	0.936	Accepted

Source: Elaborated based on smart PLS results.

The internal consistency reliability of the constructs was assessed using Cronbach's alpha rho_A and composite reliability rho_C. The results show that all constructs exceed the recommended threshold of 0.70, confirming satisfactory internal consistency.

Consumer Engagement recorded a Cronbach's Alpha of 0.824, rho_A of 0.845, and composite reliability rho_C of 0.871. Influencer credibility, influencer over-endorsement, purchase intention and parasocial relationship also showed strong reliability values. Therefore, all constructs are considered reliable and suitable for further analysis.

4.3.1.5 Convergent Validity Table

Convergent validity was assessed to verify whether the indicators are associated with the same construct measure that construct consistently. In PLS-SEM, convergent validity is evaluated using the average variance extracted (AVE), which represents the average proportion of variance explained by a construct in its indicators. According to Hair et al. (2019), an AVE value above 0.50 indicates satisfactory convergent validity.

The table below presents the final AVE values obtained after removing CRE1 from the Consumer Engagement construct.

Table 26: Convergent Validity of the Constructs

Construct	Average variance extracted (AVE)	Decision
CE	0.533	Accepted
IC	0.816	Accepted

IOE	0.686	Accepted
PI	0.840	Accepted
PSR	0.618	Accepted

Source: Elaborated based on SmartPLS results.

Convergent validity was assessed using the Average Variance Extracted. The results show that all AVE values are above the recommended threshold of 0.5. Consumer Engagement recorded an AVE of 0.533, after removing the weak items CRE1. This confirms that the construct now meets the required convergent validity criterion.

The remaining constructs also show satisfactory AVE values: influencer credibility 0.816, influencer over-endorsement 0.686, purchase intention 0.840, and parasocial relationship 0.618. These results confirm that the indicators adequately represent their respective constructs.

4.3.1.6 Discriminant Validity: HTMT

Discriminant validity was assessed to verify whether the constructs included in the model are empirically distinct from one another. In this study, discriminant validity was evaluated using the Heterotrait-Monotrait Ratio HTMT. This criterion compares the correlations between indicators of different constructs with the correlations between indicators of the same construct. According to Hair et al. (2019), HTMT values below 0.85 indicate satisfactory discriminant validity.

The table below presents the HTMT values obtained for the constructs of the model.

Table 27: Discriminant Validity Using HTMT

Construct	CE	IC	IOE	PI	PSR	PSR x IC
CE						
IC	0.761					
IOE	0.193	0.217				
PI	0.688	0.608	0.170			
PSR	0.800	0.637	0.162	0.639		
PSR x IC	0.300	0.105	0.173	0.216	0.431	

Source: Elaborated based on SmartPLS results.

All HTMT values are below the recommended threshold of 0.85. The highest value is observed between Parasocial Relationship and Consumer Engagement with HTMT = 0.800, which remains below the critical threshold. Therefore, the results confirm satisfactory discriminant validity. This indicates that the constructs used in the study measure distinct concepts and are sufficiently different from one another.

4.3.1.7 Conclusion on the Measurement Model

The evaluation of the measurement model confirmed that the constructs used in this study are reliable and valid. The results showed acceptable indicator reliability, satisfactory internal consistency reliability, adequate convergent validity, and satisfactory discriminant validity. After the removal of CRE1, all constructs met the recommended Thresholds for reliability and validity. Therefore, the measurement model was considered appropriate, allowing the analysis to proceed to the evaluation of the structural model.

4.3.2 Evaluation of the Structural Model

After validating the measurement model, the next step consists of evaluating the structural model. This stage aims to examine the relationships between the latent constructs included in the conceptual framework and to test the proposed hypotheses. The structural model evaluation makes it possible to assess the strength, direction, and statistical significance of the relationships between influencer over-endorsement, influencer credibility, consumer engagement, purchase intention, and parasocial relationship.

Following the recommendations of Hair et al. (2019), the evaluation of the structural model was based on several indicators: collinearity assessment using VIF, coefficient of determination R^2, effect size f^2, predictive relevance Q^2, and the analysis of path coefficients through bootstrapping.

4.3.2.1 Collinearity Assessment Using VIF

Prior to testing the structural paths, the model was examined for possible collinearity issues among the predictor constructs. This step is important because excessive overlap between predictors may reduce the precision of the estimated path coefficients and affect the interpretation of the results. Collinearity was assessed using the Variance Inflation Factor (VIF). following Hair et al. (2019), VIF values below 5 are generally considered acceptable, while values below 3 indicate that collinearity is unlikely to represent a concern,

The VIF values obtained for the inner model are presented in the following table.

Table 28: Inner Model Collinearity Statistics VIF

Paths	VIF
IC -> CE	1.640
IC -> PI	1.640
IOE -> CE	1.101
IOE -> IC	1.000
IOE -> PI	1.101
PSR -> CE	1.938
PSR -> PI	1.938
PSR x IC -> CE	1.315
PSR x IC -> PI	1.315

Source: Elaborated based on SmartPLS results

The VIF results show that all values are below the recommended threshold of 5. More specifically, the VIF values range from 1.000 to 1.938, which indicates that there is no serious collinearity problem among the predictor variables.

The lowest VIF value is observed for IOE→ IC with a value of 1.000, while the highest values are recorded for PSR→CE and PSR→PI, both with 1.938. Even these highest values remain below the more conservative threshold of 3, confirming a very low risk of multicollinearity.

Therefore, the structural model does not present collinearity issues. This means that the path coefficients can be interpreted reliably, and the analysis can proceed to the evaluation of the model's explanatory power through R^2.

4.3.2.2 Coefficient of Determination R^2

The coefficient of determination R^2 was used to evaluate the explanatory power of the structural model. It indicates the proportion of variance in each endogenous construct that is explained by its predictor variables. Higher R^2 values reflect stronger explanatory power. According to Hair et al. (2019), R^2 values of approximately 0.25, 0.50, and 0.75 can be interpreted as weak, moderate, and substantial, respectively.

The table below presents the R^2 and adjusted R^2 values obtained for the endogenous constructs of the model.

Table 29: Coefficient of Determination R^2

Endogenous Construct	R-square	R-square adjusted	Interpretation
CE	0.613	0.605	Moderate explanatory power
IC	0.046	0.041	Weak explanatory power
PI	0.415	0.403	Moderate explanatory power

Source: Elaborated based on SmartPLS results.

R^2 values are reported only for the endogenous constructs of the model, namely Influencer Credibility, Consumer Engagement, and Purchase Intention since these constructs are predicted by other variables in the structural model. No R^2 value is reported for Influencer Over-Endorsement or Parasocial Relationship, as they function as predictor variables in the model.

The results show that the model explains 61.3% of the variance in consumer engagement. This indicates moderate to relatively strong explanatory power, suggesting that influencer credibility influencer over-endorsement, parasocial relationship and the interaction term jointly explain a substantial part of consumer engagement.

For Purchase Intention, the R^2 value is 0.415, meaning that 41.5% of its variance is explained by the predictor variables. This reflects moderate explanatory power and indicates that the model explains a meaningful proportion of consumers' intention to purchase products recommended by influencers.

In contrast, Influencer Credibility has an R^2 value of 0.046, which means that influencer over-endorsement explains only 4.6% of its variance. This represents weak explanatory power. Although the effect of over-endorsement on credibility may be statistically significant, other factors not included in the model may also play an important role in shaping influencer credibility.

Overall, the model demonstrates satisfactory explanatory power, especially for consumer engagement and purchase intention.

4.3.2.3 Effect Size F^2

The effect size f^2 was assessed to determine the individual contribution of each predictor variable to the explained variance of the endogenous constructs, while R^2 indicates the overall explanatory power of the model. f^2 shows the specific contribution of each predictor to its corresponding dependent variable.

According to Hair et al. (2019) f^2 values of 0.02, 0.15 and 0.35 indicates small, medium, and large effects, respectively. Values below 0.02 indicate that the predictor has no meaningful effect.

The table below presents the f^2 values obtained for the structural relationships in the model

Table 30: Effect Size f^2

Paths	f^2	Interpretation
IC -> CE	0.222	Medium effect
IC -> PI	0.087	Small effect
IOE -> CE	0.002	No effect
IOE -> IC	0.048	Small effect
IOE -> PI	0.005	No effect
PSR -> CE	0.304	Large effect
PSR -> PI	0.147	Medium effect
PSR x IC -> CE	0.003	No effect
PSR x IC -> PI	0.000	No effect

Source: Elaborated based on SmartPLS results.

The results show that parasocial relationship has the strongest contribution to explaining consumer engagement, with an f^2 value of 0.304, indicating a medium effect. Influencer Credibility also contributes meaningfully to consumer engagement. With an f^2 value of 0.222, which also represents a medium effect.

For purchase intention, the effect of influencer credibility is small ($f^2 = 0.087$), while the effect of parasocial relationship is close to the medium threshold ($f^2 = 0.147$), but still classified as

small. This suggests that both credibility and parasocial relationship contribute to explaining purchase intention, although their individual effects are more limited compared to their contribution to consumer engagement.

In contrast, influencer over-endorsement shows no meaningful direct effect on consumer engagement, ($f^2 = 0.002$) or purchase intention ($f^2 = 0.005$). However, its effect on influencer credibility is small, ($f^2 = 0.048$), which is consistent with the theoretical role of influencer credibility as a mediating mechanism.

Finally, the interaction affects PSR × IC → CE and PSR × IC → PI show no meaningful effect sizes, with f^2 values of 0.003 and 0.000, respectively. This suggests that the moderating effect of parasocial relationship is very limited in practical terms.

4.3.2.4 Predictive Relevance Q^2

The predictive relevance of the model was assessed using the PLSpredict procedure in SmartPLS. This analysis evaluates the model's ability to predict the values of the endogenous constructs. The Q^2 predict value is used to determine whether the model has predictive relevance. According to Hair et al. (2019), Q^2 predict values greater than 0 indicate that the model has predictive relevance for the corresponding endogenous construct.

The table below presents the Q^2 predict values, together with the RMSE and MAE prediction error indicators.

Table 31: Predictive relevance Q^2

Endogenous Construct	Q^2predict	RMSE	MAE	Decision
IC	0.031	0.993	0.824	Predictive relevance
CE	0.458	0.743	0.587	Predictive relevance
PI	0.316	0.833	0.678	Predictive relevance

Source: Elaborated based on SmartPLS results.

The results show that all Q^2 predict values are greater than 0, indicating that the model has predictive relevance for all endogenous constructs. Consumer Engagement records the highest

Q^2 predict value (0.458), suggesting that the model has the strongest predictive ability for this construct. Purchase Intention also shows a positive Q^2 predict value (0.316), indicating acceptable predictive relevance. Influencer Credibility presents a lower but still positive Q^2 predict value (0.031), suggesting limited but existing predictive relevance.

Overall, these results confirm that the model demonstrates predictive relevance, particularly for Consumer Engagement and Purchase Intention.

4.3.2.5 Analysis of Path Coefficients and Hypothesis Testing

The analysis of path coefficients was carried out to evaluate the direct relationships proposed in the structural model. This step makes it possible to determine the direction, strength, and statistical significance of the links between the latent constructs.

In PLS-SEM, the path coefficient β indicates the magnitude and direction of the relationship between two constructs. A positive value reflects a positive effect, while a negative value reflects a negative effect. The statistical significance of each relationship was assessed using the bootstrapping procedure in SmartPLS.

For this study, bootstrapping was performed with 5,000 subsamples as recommended in PLS-SEM to obtain stable estimates of standard errors and significance levels (Hair et al., 2019). The results were interpreted using the t-value and p-value. According to Hair et al. (2019), a relationship is considered statistically significant when the p-value is below 0.05, corresponding to a 95% confidence level.

The table below presents the results of the direct relationships tested in the structural model.

Table 32: Results of Relationships in the Structural Model

Paths	coefficient β	T statistics (|O/STDEV|)	P values	Result
IC -> CE	0.376	6.965	0.000	Significant
IC -> PI	0.289	3.932	0.000	Significant
IOE -> CE	-0.031	0.624	0.533	Not significant
IOE -> IC	-0.215	3.023	0.003	Significant
IOE -> PI	-0.057	0.979	0.327	Not significant

PSR -> CE	0.477	8.996	0.000	Significant
PSR -> PI	0.408	5.496	0.000	Significant
PSR x IC -> CE	0.040	0.649	0.516	Not significant
PSR x IC -> PI	0.018	0.275	0.783	Not significant

Source: Elaborated based on SmartPLS results.

The results of the structural model show that several estimated relationships are statistically significant. Influencer credibility has a positive and significant effect on both consumer engagement (β = 0.376, t = 6.965, p = 0.000) and purchase intention (β = 0.289, t = 3.932, p = 0.000). This indicates that perceived credibility plays an important role in explaining consumer responses to influencer content.

Influencer over-endorsement has a negative and significant effect on influencer credibility (β = -0.215, t = 3.023, p = 0.003), suggesting that excessive endorsement practices reduce followers' perception of influencer credibility. However, its direct effects on consumer engagement (β = -0.031, p = 0.533) and purchase intention (β = -0.057, p = 0.327) are not significant. This suggests that over endorsement does not directly influence these outcomes but may affect them indirectly through influencer credibility.

The results also show that parasocial relationship has positive and significant effects on consumer engagement (β = 0.477, t = 8.996, p = 0.000) and purchase intention (β = 0.408, t = 5.496, p = 0.000). These results indicate that followers who develop a stronger emotional connection with influencers are more likely to engage with their content and express purchase intention.

Finally, the interaction effects between parasocial relationship and influencer credibility are not significant for consumer engagement (β = 0.040, p = 0.516) or purchase intention (β = 0.018, p = 0.783). This indicates that parasocial relationship does not significantly change the strength of the effect of influencer credibility on these two outcomes.

4.3.2.5.1 Direct Hypothesis Testing

Table 33: Direct Hypotheses Testing Results

Hypothesis	Relationship	β	t-value	p-value	Significance	Result
H1	IOE → IC	-0.215	3.023	0.003	Significant	Supported
H2	IC → CE	0.376	6.965	0.000	Significant	Supported
H3	IC → PI	0.289	3.932	0.000	Significant	Supported

Source: Elaborated based on SmartPLS results.

The results support the three direct hypotheses of the study. First, H1 is supported, as influencer over-endorsement has a negative and significant effect on influencer credibility (β = -0.215, t = 3.023, p = 0.003). This means that when influencers are perceived as promoting too many products or brands, their credibility decreases.

In practical terms this result suggests that followers do not evaluate endorsement volume as a neutral behavior. When an influencer repeatedly promotes many products or brands, especially when these endorsements appear excessive or unrelated to the influencer's usual content, followers may begin to interpret the influencer's recommendations as financially motivated rather than sincere. As a result, the influencer may appear less authentic, less trustworthy, and less expert. Therefore, over-endorsement weakens the symbolic value that makes influencers persuasive in the first place: their perceived credibility.

Second, H2 is supported, since influencer credibility has a positive and significant effect on consumer engagement (β = 0.376, t = 6.965, p = 0.000). This indicates that followers are more likely to engage with content when they perceive the influencer as trustworthy and credible.

This finding means that credibility functions as a motivational factor for engagement when followers believe that an influencer is honest, trustworthy and knowledgeable, they are more willing to pay attention to the content, interact with it, and respond positively to the influencer's communication. In the context of social media, engagement does not happen only because content is visible, it also depends on whether followers consider the source reliable. Therefore, credibility helps transform passive exposure into active interaction.

Third, H3 is supported, as influencer credibility has a positive and significant effect on purchase intention (β = 0.289, t = 3.932, p = 0.000). This suggests that credible influencers are more likely to encourage consumers' intention to purchase the products they recommend.

In reality, purchase intention involves a higher level of risk than simple engagement because it requires consumers to consider spending money on a recommended product. The positive effect of influencer credibility on purchase intention indicates that followers are more willing

to consider buying when they believe that the influencer's recommendation is sincere and based on knowledge or real experience. Thus, credibility reduces uncertainty and increases confidence in the promoted product.

Overall, the direct hypothesis results confirm that influencer credibility plays a central role in the model. Over-endorsement weakens credibility. While credibility positively influences consumer engagement and purchase intention.

4.3.3 Mediation Analysis of Influencer Credibility

After examining the direct relationships in the structural model, the mediation effects were assessed in order to determine whether Influencer Credibility explains the relationship between Influencer Over-Endorsement and the two outcome variables: Consumer Engagement and Purchase Intention.

Before interpreting the indirect effects, the direct effects of Influencer Over-Endorsement on Consumer Engagement and Purchase Intention were examined. These paths are important because they help identify the type of mediation.

Table 34: Direct Effects Related to Mediation

Direct path	Coefficient β	T statistics	P values	Result
IOE → CE	-0.031	0.624	0.533	Not significant
IOE → PI	-0.057	0.979	0.327	Not significant

Source: Elaborated based on SmartPLS results

The results show that the direct effect of Influencer Over-Endorsement on Consumer Engagement is not statistically significant ($\beta = -0.031$, $t = 0.624$, $p = 0.533$). Similarly, the direct effect of Influencer Over-Endorsement on Purchase Intention is also not significant ($\beta = -0.057$, $t = 0.979$, $p = 0.327$). These findings suggest that influencer over-endorsement does not directly influence consumer engagement or purchase intention. Therefore, the indirect effects through influencer credibility were examined.

The mediation analysis was conducted using the bootstrapping procedure in SmartPLS with 5,000 subsamples. The results of the specific indirect effects are presented in the following table.

Table 35: Mediation Analysis Results

Hypothesis	Indirect Relationship	B	t-value	p-value	Significance	Result
H4	IOE → IC → CE	-0.081	2.687	0.007	Significant	Supported
H5	IOE → IC → PI	-0.062	2.371	0.018	Significant	Supported

Source: Elaborated based on SmartPLS results

The mediation analysis was conducted using the bootstrapping procedure in SmartPLS with 5,000 subsamples. The results show that the indirect effect of Influencer Over-Endorsement on Consumer Engagement through Influencer Credibility is negative and statistically significant ($\beta = -0.081$, $t = 2.687$, $p = 0.007$). Therefore, H4 is supported.

This means that influencer over endorsement reduces influencer credibility, which in turn decreases consumer engagement. In other words, followers may not directly disengage because of over-endorsement itself, but because over-endorsement weakens their perception of the influencer's credibility.

The results also show that the indirect effect of Influencer Over-Endorsement on Purchase Intention through Influencer Credibility is negative and statistically significant ($\beta = -0.062$, $t = 2.371$, $p = 0.018$). Therefore, H5 is supported.

This indicates that influencer over-endorsement reduces purchase intention indirectly by lowering influencer credibility. When followers perceive the influencer as less credible, they become less willing to purchase the products recommended by that influencer.

Since the direct effects of IOE → CE and IOE → PI were not significant, while the indirect effects through influencer credibility were significant, the results indicate full mediation. This confirms that influencer credibility is the main mechanism through which influencer over-endorsement affects both consumer engagement and purchase intention.

This mediation result is particularly important because it explains how the effect occurs. The findings show that over-endorsement does not directly reduce engagement or purchase intention by itself. Instead, followers first reinterpret the influencer as less credible, and this loss of credibility then reduces their willingness to engage or purchase. In other words, credibility acts as the psychological bridge between the influencer's endorsement behavior and consumer responses. This means that the real problem of over-endorsement is not only the number of promoted products, but the damage this behavior creates in followers trust toward the influencer. From a managerial perspective, this suggests that brands should not evaluate influencers only by follower count, visibility, or engagement rate. They should also consider whether the influencer's endorsement history may have weakened audience trust. If credibility

is already damaged, the campaign may be less effective even if the influencer has a large audience.

4.3.4 Moderation Analysis

The moderation analysis was conducted to examine whether Parasocial Relationship changes the effect of Influencer Credibility on Consumer Engagement and Purchase Intention. In this study, Parasocial Relationship was tested as a moderator between Influencer Credibility and the two outcome variables.

The moderation effects were assessed through the interaction term PSR × IC using the bootstrapping procedure. In SmartPLS with 5,000 subsamples, A moderation effect is considered statistically significant when the p-value is below 0.05.

The results of the moderation analysis are presented in the following table.

Table 36: Moderation analysis results

Hypothesis	Interaction Relationship	B	t-value	p-value	Significance	Result
H6	PSR × IC → CE	0.040	0.649	0.516	Not Significant	Not supported
H7	PSR × IC → PI	0.018	0.275	0.783	Not Significant	Not supported

Source: Elaborated based on SmartPLS results

The results show that the interaction effect between Parasocial Relationship and Influencer Credibility on Consumer Engagement is positive but not statistically significant ($\beta = 0.040$, $t = 0.649$, $p = 0.516$). Since the p-value is higher than 0.05, H6 is not supported. This means that Parasocial Relationship does not significantly strengthen or weaken the relationship between influencer Credibility and Consumer Engagement.

This result suggests that emotional closeness to the influencer does not necessarily make followers more sensitive to credibility when deciding whether to engage with content. one possible explanation is that consumer engagement may be influenced by two separate mechanisms: Credibility encourages engagement through trust and rational evaluation, while parasocial relationship encourages engagement through emotional attachment and familiarity. Therefore, even if followers feel close to an influencer, this emotional bond does not automatically increase the effect of credibility on engagement.

Similarly, the interaction effect between Parasocial Relationship and Influencer Credibility on Purchase Intention is also positive but not statistically significant ($\beta = 0.018$, $t = 0.275$, $p = 0.783$). Therefore, H7 is not supported. This indicates that Parasocial Relationship does not significantly moderate the relationship between Influencer Credibility and Purchase Intention.

This finding may be explained by the fact that purchase intention is a more deliberate consumer response than engagement. Even when followers feel emotionally connected to an influencer, they may still evaluate product recommendations based on other factors such as price, product need, brand trust, perceived quality, or personal budget. Therefore, a strong parasocial relationship may increase general attachment to the influencer, but it does not necessarily make credibility more influential in shaping purchase intention.

Although Parasocial Relationship had significant direct effects on Consumer Engagement and Purchase Intention in the structural model, its interaction with Influencer Credibility was not significant. This distinction is important. The results do not mean that parasocial relationship is unimportant. On the contrary, PSR directly influences both consumer engagement and purchase intention. However, it does not operate as a moderator in this model. This means that PSR affects consumer responses independently, rather than by changing the strength of the relationship between credibility and consumer outcomes. In simple terms, followers who feel close to an influencer may engage more and show stronger purchase intention. But this emotional closeness does not significantly change the way credibility influences these responses.

Overall, the moderation results indicate that Parasocial Relationship does not act as a significant moderator in the proposed model. Therefore, H6 and H7 are not supported. However, this does not mean that PSR is irrelevant. Rather, it appears to influence consumer engagement and purchase intention directly, instead of changing the strength of the relationship between influencer credibility and these outcomes.

4.4 Synthesis of the Results

This study aimed to examine the effect of influencer over-endorsement on consumer engagement and purchase intention, while considering the mediating role of influencer credibility and the moderating role of parasocial relationship. the PLS-SEM analysis was conducted in several stages, including the evaluation of the measurement model, the assessment of the structural model, and the testing of direct, mediating, and moderating effects.

The results of the measurement model confirmed that the constructs used in this study were reliable and valid. After the refinement of the measurement model through the removal of CRE1, the constructs met the required thresholds for indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Therefore, the structural model analysis was considered appropriate.

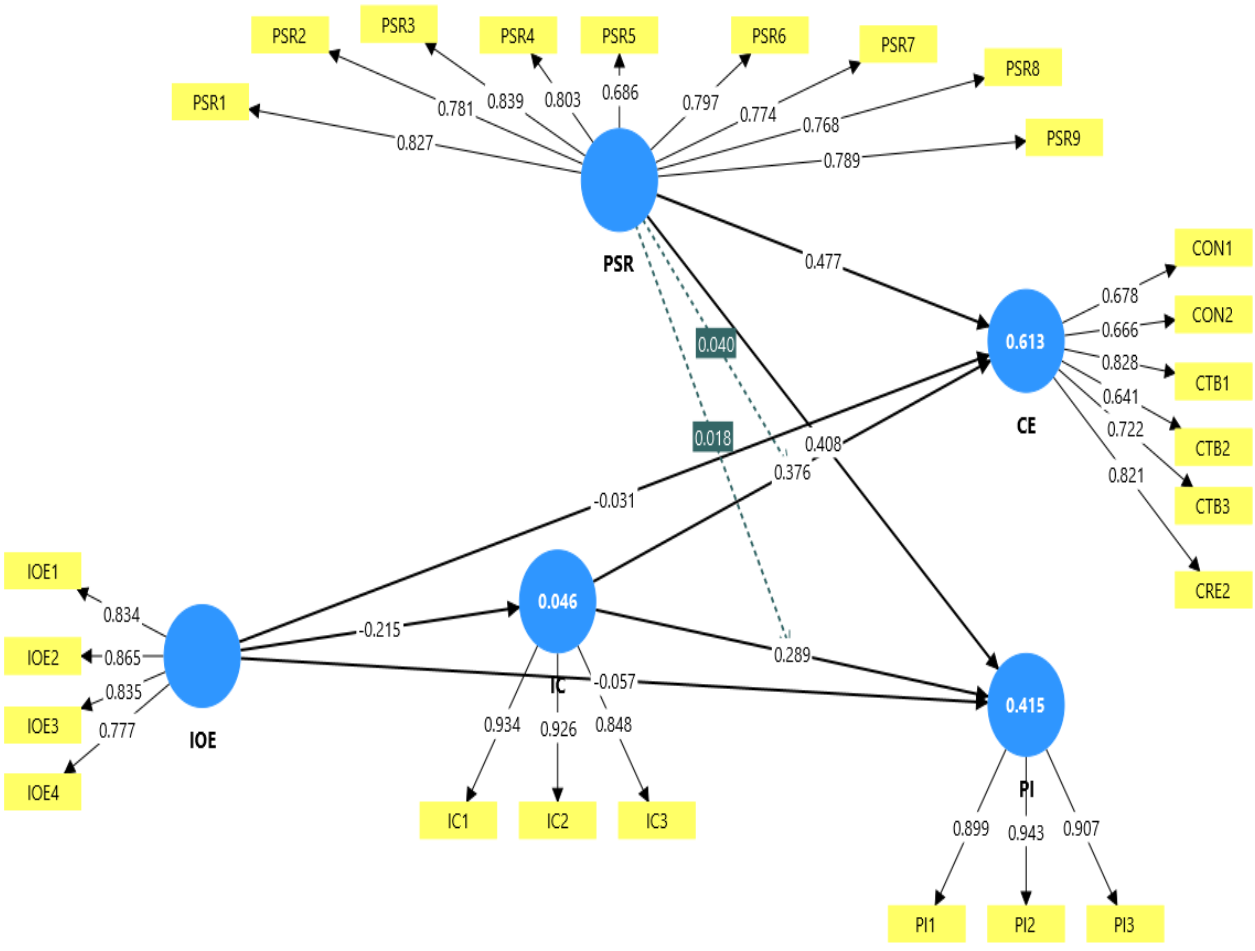
The structural model estimated through SmartPLS provides a visual representation of the relationships tested in the study. It highlights:

the outer loadings of the retained indicators.

the R^2 values of the endogenous constructs.

the direct, indirect, and interaction effects included in the research model.

Figure 10: Estimated structural model using SmartPLS



Source: Elaborated based on SmartPLS results

The table below summarizes the results of the hypotheses tested in the model, including the path coefficient, t-values, p-values, and final decisions.

Table 37: Summary of Hypothesis Testing Results

Hypothesis	Relationship	Coefficient β	t-value	p-value	Result
H1	IOE → IC	-0.215	3.023	0.003	Supported
H2	IC → CE	0.376	6.965	0.000	Supported
H3	IC → PI	0.289	3.932	0.000	Supported
H4	IOE → IC → CE	-0.081	2.687	0.007	Supported
H5	IOE → IC → PI	-0.062	2.371	0.018	Supported
H6	PSR × IC → CE	0.040	0.649	0.516	Not supported
H7	PSR × IC → PI	0.018	0.275	0.783	Not supported

Source: Elaborated based on SmartPLS results

The results show that influencer over-endorsement has a negative and significant effect on influencer credibility (H1: β = -0.215; t = 3.023; p = 0.003). This means that when followers perceive an influencer as promoting too many products or brands, their perception of that influencer's credibility decreases. Thus, excessive endorsement activity can weaken the trustworthiness and authenticity associated with the influencer.

In contrast, influencer credibility has a positive and significant effect on consumer engagement (H2: β = 0.376; t = 6.965; p = 0.000). This indicates that followers are more likely to interact with an influencer's content when they perceive the influencer as credible. Credibility therefore appears to be an important driver of engagement behaviors such as liking, commenting, sharing and paying attention to influencer content.

Similarly, influencer credibility has a positive and significant effect on purchase intention (H3: β = 0.289; t = 3.932; p = 0.000). This result suggests that credible influencers are more likely to encourage consumers to consider purchasing products or brands they recommend. In other words, credibility strengthens the persuasive power of influencer recommendations.

The mediation results also confirm the important role of influencer credibility. The indirect effect of influencer over-endorsement on consumer engagement through influencer credibility is negative and significant (H4: $\beta = -0.081$; $t = 2.687$; $p = 0.007$). This means that over-endorsement reduces credibility, which then decreases consumer engagement. Since the direct effect of influencer over-endorsement on consumer engagement was not significant, this result indicates a full mediation effect.

Likewise, the indirect effect of influencer over-endorsement on purchase intention through influencer credibility is negative and significant (H5: $\beta = -0.062$; $t = 2.371$; $p = 0.018$). This shows that over-endorsement does not directly reduce purchase intention, but it does so indirectly by weakening influencer credibility. Therefore, influencer credibility represents the key mechanism through which over-endorsement affects consumers behavioral responses.

Regarding moderation, the interaction effect between parasocial relationship and influencer credibility on consumer engagement is not significant (H6: $\beta = 0.040$; $t = 0.649$; $p = 0.516$). This means that parasocial relationship does not significantly strengthen or weaken the effect of influencer credibility on consumer engagement.

Similarly, the interaction effect between parasocial relationship and influencer credibility on purchase intention is also not significant (H7: $\beta = 0.018$; $t = 0.275$; $p = 0.783$). Therefore, parasocial relationship does not significantly moderate the relationship between influencer credibility and purchase intention.

The non-supported moderation hypotheses also provide useful insight. Although the interaction effects were not significant, this does not mean that parasocial relationship has no role in influencer marketing. Rather, the results suggest that PSR may function more as an independent emotional driver than as a condition that strengthens or weakens credibility effects. This means that credibility and parasocial relationship may influence consumer behavior through different psychological routes. Credibility relates more to trust, expertise, and the perceived reliability of recommendations, while PSR relates more to emotional closeness, familiarity, and attachment to the influencer.

Overall, the findings show that influencer credibility is the central variable in the model. Influencer over-endorsement reduces credibility, while credibility positively affects both consumer engagement and purchase intention. The results also show that parasocial relationship has significant direct effects on consumer engagement and purchase intention, but it does not significantly moderate the effect of influencer credibility, therefore. The main contribution of

the model lies in confirming the mediating role of influencer credibility and explaining how influencer over-endorsement influences consumer responses.

In practical terms, the findings suggest that influencer marketing effectiveness depends on protecting credibility. Excessive endorsement may not directly stop followers from engaging or purchasing, but it weakens the credibility that makes influencer recommendations persuasive. Therefore, influencers and brands should treat credibility as a strategic asset. At the same time, the results show that parasocial relationship remains valuable because it directly supports engagement and purchase intention, even though it does not significantly moderate credibility effects.

Based on the significant relationships found in the model, the following equations summarize the main supported effects.

Influencer Credibility as a function of Influencer Over-Endorsement:

$$\text{Influencer Credibility} = -0.215 \times \text{Influencer Over-Endorsement} + \varepsilon_1$$

Consumer Engagement as a Function of Influencer Credibility:

$$\text{Consumer Engagement} = 0.376 \times \text{Influencer Credibility} + \varepsilon_2$$

Purchase Intention as a Function of Influencer Credibility:

$$\text{Purchase Intention} = 0.289 \times \text{Influencer Credibility} + \varepsilon_3$$

These equations indicate that influencer over-endorsement negatively contributes to influencer credibility, while influencer credibility positively contributes to consumer engagement and purchase intention.

Chapter 5: Conclusion

Chapter 5: Conclusion

Introduction

This chapter summarizes the study's main findings, discusses theoretical contributions, derives managerial implications, acknowledges limitations, and proposes directions for future research.

5.1 Overview of the Study

This dissertation examined the effect of influencer over-endorsement on consumer engagement and purchase intention among Algerian social media users, with influencer credibility as a mediating variable and parasocial relationship as a moderating variable. The study was motivated by the growing prevalence of over-endorsement in the Algerian social media environment and its potential consequences for influencer credibility and consumer behavior.

Seven hypotheses were formulated and tested using a quantitative survey administered to 204 Algerian social media users. Data were analyzed using SPSS version 26 for preliminary checks and SmartPLS version 4.0 for PLS-SEM analysis, with 5,000 bootstrapping subsamples. The results indicate that influencer over-endorsement is negatively associated with influencer credibility, and that this credibility reduction fully explains the suppression of consumer engagement and purchase intention. Five of the seven hypotheses were supported. The model demonstrated moderate explanatory power for consumer engagement ($R^2 = 0.613$) and purchase intention ($R^2 = 0.415$).

5.2 Summary of Major Findings

5.2.1 Influencer Over Endorsement Reduces Influencer Credibility (H1)

H1 was supported. Influencer over-endorsement has a significant negative effect on influencer credibility ($\beta = -0.215$, $t = 3.023$, $p = 0.003$). When Algerian followers perceive an influencer as promoting too many brands, their trust in that influencer is reduced. This finding is consistent with the core result of Cheah et al. (2024) and confirms that the credibility-damaging effect of over-endorsement is not limited to a single cultural context but also operates in an Algerian market setting.

5.2.2 Credibility Positively Predicts Both Consumer Outcomes (H2 and H3)

H2 and H3 were both supported. Influencer credibility has a significant positive effect on consumer engagement ($\beta = 0.376$, $t = 6.965$, $p < 0.001$) and on purchase intention ($\beta = 0.289$, $t = 3.932$, $p < 0.001$). A credible influencer reduces follower skepticism and motivates active interaction with content, as well as a greater willingness to consider purchasing recommended

products. The effect of credibility on engagement is slightly stronger than its effect on purchase intention. This may be because engagement behaviors, such as watching, liking, commenting, or sharing content, are more immediate and less risky than purchase decisions. By contrast, purchase intention involves a higher level of evaluation because it requires consumers to consider product relevance, price, need, and trust in the recommendation.

5.2.3 Influencer Credibility Fully Mediates the Influencer Over-Endorsement Effect (H4 and H5)

H4 and H5 were both supported. Influencer credibility fully mediates the relationship between influencer over-endorsement and consumer engagement ($\beta = -0.081$, $t = 2.687$, $p = 0.007$) and between influencer over-endorsement and purchase intention ($\beta = -0.062$, $t = 2.371$, $p = 0.018$). Since the direct effects of influencer over-endorsement on both outcomes were not significant (IOE → CE: $\beta = -0.031$, $p = 0.533$; IOE → PI: $\beta = -0.057$, $p = 0.327$), full mediation is confirmed. This means that over-endorsement does not directly reduce engagement or purchase intention. Instead, its effect operates through the loss of influencer credibility. In other words, followers do not necessarily disengage or lose purchase interest simply because an influencer promotes many products. Rather, they respond negatively when this behavior makes the influencer appear less credible. This is one of the most important findings of the study because it identifies credibility as the key mechanism linking endorsement behavior to consumer responses.

5.2.4 Parasocial Relationship as a Direct Predictor, not a Moderator (H6 and H7)

H6 and H7 were not supported. The interaction effects between parasocial relationship and influencer credibility were not statistically significant for consumer engagement ($\beta = 0.040$, $p = 0.516$), or purchase intention ($\beta = 0.018$, $p = 0.783$). Therefore, parasocial relationship does not significantly strengthen or weaken the effect of influencer credibility on these two outcomes.

However, parasocial relationship showed significant direct effects on both consumer engagement ($\beta = 0.477$, $t = 8.996$, $p < 0.001$) and purchase intention ($\beta = 0.408$, $t = 5.496$, $p < 0.001$). This means that followers who feel emotionally close to an influencer are more likely to engage with their content and express purchase intention, even though this emotional bond does not significantly change the role of credibility.

The rejection of the moderation hypotheses provides an important theoretical insight. It suggests that followers may separate emotional attachment from credibility-based evaluation.

In other words, followers may like an influencer and feel close to them but still evaluate the credibility of product recommendations independently when deciding whether to engage or purchase.

Thus, in the present study, parasocial relationship appears to operate as a direct emotional driver of consumer outcomes rather than as a moderator. Credibility and parasocial relationship therefore seem to work through parallel mechanisms: Credibility influences how followers judge the reliability of recommendations, while parasocial relationship influences their emotional connection with the influencer.

Table 38: Summary of Hypothesis Testing Results

Hypothesis	Relationship	β	T	P	Result
H1	IOE → IC (negative)	−0.215	3.023	0.003	Supported
H2	IC → CE (positive)	0.376	6.965	< 0.001	Supported
H3	IC → PI (positive)	0.289	3.932	< 0.001	Supported
H4	IOE → IC → CE (mediation)	−0.081	2.687	0.007	Supported
H5	IOE → IC → PI (mediation)	−0.062	2.371	0.018	Supported
H6	PSR × IC → CE (moderation)	0.040	0.649	0.516	Not Supported
H7	PSR × IC → PI (moderation)	0.018	0.275	0.783	Not Supported

Source: Elaborated based on SmartPLS results

5.3 Theoretical Contributions

This study makes three primary contributions to the academic literature on influencer marketing.

First, it extends the over-endorsement framework to a new cultural context. Prior empirical work on influencer over-endorsement was concentrated in Southeast Asian and Western markets. By replicating and confirming the over-endorsement→credibility→outcomes chain in Algeria, this study demonstrates that these dynamics are not culturally specific but apply to an emerging North African market with a distinct digital culture and consumer profile.

Second, the study clarifies the mechanism through which over-endorsement operates. The confirmation of full mediation establishes that credibility is not simply associated with consumer outcomes but is the explanatory pathway through which endorsement behavior produces its effects. This structural precision advances understanding beyond prior studies that documented associations without establishing mediating mechanisms.

Third, the study provides evidence that PSR functions as a strong and independent direct predictor of consumer outcomes rather than as a moderating boundary condition on the credibility pathways. This distinction has implications for how PSR and credibility are theorized and modelled in future influencer marketing research.

5.4 Managerial Implications

5.4.1 For Brands

The full mediation result carries a clear practical message: by the time a campaign is launched with an over endorsing influencer, the credibility that makes that influencer persuasive may already be weakened. Brands should assess not only follower count and engagement rate during influencer selection, but also the volume and category consistency of an influencer's existing sponsorships. An influencer who maintains a selective and niche-consistent endorsement portfolio is likely to be a more effective brand partner than one who accepts a high volume of unrelated collaborations.

The strong direct effect of PSR on both engagement and purchase intention also suggests that brands benefit from long-term influencer partnerships that allow the creator time to build a genuine emotional connection with their audience. Short-term, one-off collaborations with influencers who have not yet developed a deep audience relationship are likely to underperform compared to sustained partnerships with creators who have cultivated strong follower loyalty.

5.4.2 For Influencer Marketing Agencies

Influencer marketing agencies are positioned to address over-endorsement at a structural level. The findings support the implementation of partnership monitoring systems that track the volume and diversity of each influencer's active sponsorships. Category exclusivity clauses in influencer contracts which ensure that a creator does not simultaneously represent competing or unrelated brands, would protect both influencer credibility and campaign effectiveness. Agencies can also use the findings of this study to advise their clients on the long-term commercial cost of over-endorsement, positioning credibility management as a core component of their strategic offering.

5.4.3 For Content Creators

For influencers, the full mediation finding carries a direct practical implication: credibility is the mechanism through which engagement and purchase decisions are generated. Over-endorsement that reduces credibility effectively undermines the asset that makes an influencer commercially attractive. The short-term revenue gains from accepting multiple simultaneous brand deals may therefore be outweighed by the long-term erosion of follower trust that over-endorsement produces. A strategy of selective, authentic, and domain-consistent partnerships is both more credible to audiences and more sustainable as a commercial model.

5.5 Study Limitations

- Cross-Sectional Design: Data were collected at a single point in time, which limits the ability to observe how perceptions of influencer over-endorsement evolve over time and prevents strong causal claims. A longitudinal design would be more appropriate for examining whether credibility loss is caused by repeated over-endorsement accumulates, stabilizes, or decreases over time.
- Sample Composition: The sample was predominantly composed of female respondents aged 18 to 24, with Instagram and TikTok being the most represented platforms. Although this profile is consistent with the target population of active social media users, it limits the generalizability of the findings to older consumers, male respondents, and users of other platforms.
- Self-reported Data: All constructs were measured using self-reported Likert scale items. Therefore, the results may be affected by social desirability bias, recall limitations, or differences between stated intentions and actual behavior.
- Non-Probability Sampling: The study relied on convenience and snowball sampling, which limits the statistical representativeness of the sample. As a result, the findings

cannot be generalized to the entire population of Algerian social media users with full statistical confidence.

- Single-influencer Anchoring: Each respondent evaluated one self-selected influencer. While this approach allowed respondents to answer based on a familiar and personally relevant influencer, it also introduced variability across different types of creators, content domains, and audience sizes, which may limit comparability across responses.
- Moderation Hypotheses: The non-significant moderation effects may partly reflect the difficulty of detecting interaction effects in survey-based research, particularly with a moderate sample size. Future studies using larger samples or experimental designs could provide a more conclusive test of the moderating role of parasocial relationship.

5.6 Future Research Directions

- **Longitudinal studies:** Future research could examine how perceptions of influencer over-endorsement and their effects on credibility evolve over time. This would help determine whether credibility damage is temporary, cumulative, or reversible, and whether influencers can recover credibility after reducing excessive endorsement behavior.
- **Experimental designs:** Future studies could use controlled experiments to manipulate levels of over-endorsement and parasocial relationship intensity. This would allow stronger causal inference and provide a more powerful test of moderation effects.
- **Sector-specific analysis:** Future research could examine whether over-endorsement is more damaging in high-involvement product categories, such as healthcare, financial services, or technology, where credibility and trust are especially important in purchase decisions.
- **Additional moderation tests:** Future studies could test whether parasocial relationship buffers the negative effect of influencer over-endorsement on influencer credibility. In other words, future research could examine whether followers with strong emotional bonds are more forgiving of commercial excess and therefore experience less credibility erosion. Other possible boundary conditions such as perceived authenticity and sponsorship disclosure transparency could also be examined.
- **Cross-cultural comparison:** Future research could compare the findings of this study with results from other North African or Middle Eastern markets, such as Morocco, Tunisia or Egypt. This would allow researchers to assess whether cultural and market-specific factors influence the relationships identified in the present study.

- **Platform-specific research:** Future studies could examine whether over-endorsement and credibility dynamics operate differently across platforms. This is relevant because Instagram, TikTok, Facebook and YouTube differ in terms of content format, algorithmic visibility, influencer-audience interaction, and audience expectations regarding sponsored content.

5.7 Final Remarks

This study sets out to understand what happens when influencers move from selective endorsement to commercial excess. Evidence from 204 Algerian social media users provides a consistent answer: Influencer over-endorsement weakens the trust that followers place in an influencer's recommendations. This loss of credibility, rather than commercial activity itself, explains why followers may become less engaged and less willing to purchase recommended products.

The study also highlights an important distinction. Parasocial relationship showed strong direct effects on both consumer engagement and purchase intention, suggesting that emotional attachment to influencers remains an important driver of consumer responses. However, PSR did not significantly moderate the relationship between influencer credibility and consumer outcomes. In other words, credibility shapes what followers believe about an influencer's recommendations, while PSR reflects the emotional connection they feel toward the influencer. Both matter, but they operate through different mechanisms.

For the Algerian influencer marketing industry, which is still developing, these findings arrive at a relevant moment. Brands, agencies and content creators who treat credibility as a manageable asset and make deliberate choices to protect it are better positioned to build lasting and effective relationships with their audiences. In a market where consumer skepticism is growing, credibility is not simply desirable, it is a practical requirement for sustainable influence.

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Appendices

Appendix 1: Questionnaire

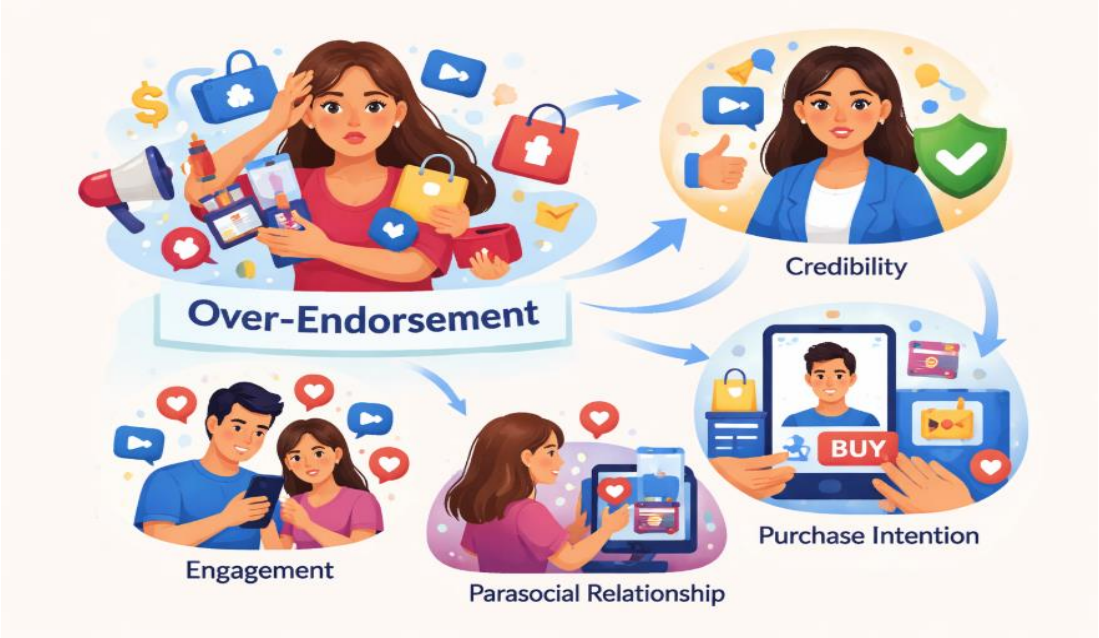
The Impact of Influencer Over-Endorsement on Algerian Consumers / تأثير المبالغة في الترويج لدى المؤثرين على المستهلكين الجزائريين

Thank you for taking the time to participate in this research study. This survey is part of a master's dissertation on social media influencer marketing and consumer behavior in Algeria.

Your participation is voluntary and anonymous.

Data will be used for academic purposes only.

Time Required: 2 minutes.



Please select your preferred language *
يرجى اختيار لغتك المفضلة

- ○ العربية
- ◉ english

Have you ever seen sponsored ads from any influencer? *

- ◯ yes
- ◯ No

Identifying the Influencer

Please write the name of the first influencer that comes to your mind who frequently shares promotional content

Votre réponse

What is the main domain of this influencer?

- ◯ Fashion & Beauty
- ◯ Fitness & Health
- ◯ Food & Cooking
- ◯ Lifestyle
- ◯ Other

IMPORTANT INSTRUCTION

You will answer all subsequent questions with reference to this specific influencer.

Over-Endorsement

The following questions ask about how often this influencer promotes products and brands in their content.

For each of the following statements, please indicate your level of agreement on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), keeping in mind the influencer you identified above.

	1	2	3	4	5
This influencer promotes too many brands.	○	○	○	○	○
This influencer endorses an excessive number of products.	○	○	○	○	○
This influencer collaborates with too many different companies.	○	○	○	○	○
This influencer partners with brands that are unrelated to their content.	○	○	○	○	○

INFLUENCER CREDIBILITY

The following questions ask about your overall perception of this influencer as a person.

For each of the following statements, please indicate your level of agreement on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), keeping in mind the influencer you identified above.

	1	2	3	4	5
This influencer is trustworthy	○	○	○	○	○
This influencer is honest.	○	○	○	○	○
This influencer is an expert on the topic.	○	○	○	○	○

CONSUMER ENGAGEMENT

The following questions ask about how you interact with this influencer's content on social media.

For each of the following statements, please indicate your level of agreement on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), keeping in mind the influencer you identified above.

	1	2	3	4	5
I watch this influencer's content (videos, stories, and reels).	○	○	○	○	○
I read this influencer's posts and captions.	○	○	○	○	○

For each of the following statements, please indicate your level of agreement on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), keeping in mind the influencer you identified above.

	1	2	3	4	5
I "like" this influencer's posts	○	○	○	○	○
I "comment" on this influencer's posts.	○	○	○	○	○
I "share" this influencer's posts with others.	○	○	○	○	○

For each of the following statements, please indicate your level of agreement on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), keeping in mind the influencer you identified above.

	1	2	3	4	5
I create content (posts, stories) inspired by this influencer.	○	○	○	○	○
I recommend this influencer or their content to my friends	○	○	○	○	○

PURCHASE INTENTION

The following questions ask about your intentions regarding products this influencer recommends.

For each of the following statements, please indicate your level of agreement on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), keeping in mind the influencer you identified above.

	1	2	3	4	5
I intend to purchase products recommended by this influencer.	○	○	○	○	○
I would consider buying products recommended by this influencer.	○	○	○	○	○
It is likely that I will purchase products recommended by this influencer.	○	○	○	○	○

PARASOCIAL RELATIONSHIP

The following questions ask about the personal connection you feel toward this influencer.

For each of the following statements, please indicate your level of agreement on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), keeping in mind the influencer you identified above.

	1	2	3	4	5
This influencer makes me feel comfortable, as if I am with a friend.	○	○	○	○	○
I would like to have a friendly chat with this influencer.	○	○	○	○	○
If this influencer were not famous, we would have been good friends.	○	○	○	○	○

For each of the following statements, please indicate your level of agreement on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), keeping in mind the influencer you identified above**.**

	1	2	3	4	5
I think I understand this influencer quite well.	○	○	○	○	○
I know why this influencer behaves the way they do.	○	○	○	○	○
I can feel this influencer's emotions in certain situations.	○	○	○	○	○

For each of the following statements, please indicate your level of agreement on

a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), keeping in mind the influencer you identified above.

	1	2	3	4	5
This influencer seems to understand the kinds of things I want to know.	○	○	○	○	○
This influencer reminds me of myself.	○	○	○	○	○
I can identify with this influencer.	○	○	○	○	○

Demographic information

What is your age?

- ○ 18–24
- ○ 25–34
- ○ 35–44
- ○ 45+

What is your gender?

- ○ Male
- ○ Female

Which social media platform do you use most frequently?

- ○ Instagram
- ○ TikTok
- ○ Facebook
- ○ YouTube
- ○ Autre : _____

How often do you follow influencer content?

- ◯ Daily
- ◯ Several times per week
- ◯ Weekly
- ◯ Less often

THANK YOU

Your responses are extremely valuable to this research. This study aims to better understand how social media influencers affect consumer behavior in Algeria, which has important implications for brands, influencers, and consumers.

Your data will be kept strictly confidential and will be used only for academic research purposes. No individual responses will be reported or identified.

If you have any questions about this research or would like to receive a summary of the findings, please feel free to contact us. Your participation is greatly appreciated!

Appendix 2: Output of the Structural Model Generated in SPSS

Variable: Influencer Over-Endorsement

Reliability Statistics

Cronbach's Alpha	N of Items
,844	4

Variable: Influencer Credibility

Reliability Statistics

Cronbach's Alpha	N of Items
,881	3

Variable: Consumer Engagement

Reliability Statistics

Cronbach's Alpha	N of Items
,825	7

Variable: Purchase Intention

Reliability Statistics

Cronbach's Alpha	N of Items
,904	3

Variable: Parasocial Relationship

Reliability Statistics

Cronbach's Alpha	N of Items
,923	9

Appendix 3: Output of the Structural Model Generated in SmartPLS

Outer Loadings of the Measurement Items

Outer loadings - Matrix

	CE	IC	IOE	PI	PSR	PSR x IC
CON1	0.643					
CON2	0.666					
CRE1	0.537					
CRE2	0.811					
CTB1	0.806					
CTB2	0.682					
CTB3	0.727					
IC1		0.934				
IC2		0.926				
IC3		0.848				
IOE1			0.835			
IOE2			0.866			
IOE3			0.837			
IOE4			0.774			
PI1				0.899		
PI2				0.943		
PI3				0.907		
PSR1					0.826	
PSR2					0.781	
PSR3					0.839	
PSR4					0.804	
PSR5					0.688	
PSR6					0.798	
PSR7					0.774	
PSR8					0.770	
PSR9					0.788	
PSR x IC						1.000

Internal Consistency Reliability

Construct reliability and validity - Overview

	Cronbach's alpha	Composite reliability (r...	Composite reliability (r...	Average variance extrac...
CE	0.826	0.850	0.870	0.492
IC	0.887	0.897	0.930	0.817
IOE	0.855	0.890	0.898	0.687
PI	0.904	0.907	0.940	0.840
PSR	0.923	0.929	0.936	0.618

Final Outer Loadings After Item Refinement

Outer loadings - Matrix

	CE	IC	IOE	PI	PSR	PSR x IC
CON1	0.678					
CON2	0.666					
CRE2	0.821					
CTB1	0.828					
CTB2	0.641					
CTB3	0.722					
IC1		0.934				
IC2		0.926				
IC3		0.848				
IOE1			0.834			
IOE2			0.865			
IOE3			0.835			
IOE4			0.777			
PI1				0.899		
PI2				0.943		
PI3				0.907		
PSR1					0.827	
PSR2					0.781	
PSR3					0.839	
PSR4					0.803	
PSR5					0.686	
PSR6					0.797	
PSR7					0.774	
PSR8					0.768	
PSR9					0.789	
PSR x IC						1.000

Final Internal Consistency Reliability After Removing CRE1

Construct reliability and validity - Overview

	Cronbach's alpha	Composite reliability (r...	Composite reliability (r...	Average variance extrac...
CE	0.824	0.845	0.871	0.533
IC	0.887	0.898	0.930	0.816
IOE	0.855	0.890	0.897	0.686
PI	0.904	0.907	0.940	0.840
PSR	0.923	0.929	0.936	0.618

Discriminant Validity Using HTMT

Discriminant validity - Heterotrait-monotrait ratio (HTMT) - Matrix

	CE	IC	IOE	PI	PSR	PSR x IC
CE						
IC	0.761					
IOE	0.193	0.217				
PI	0.688	0.608	0.170			
PSR	0.800	0.637	0.162	0.639		
PSR x IC	0.300	0.105	0.173	0.216	0.431	

Inner Model Collinearity Statistics VIF

Collinearity statistics (VIF) - Inner model - List

	VIF
IC -> CE	1.640
IC -> PI	1.640
IOE -> CE	1.101
IOE -> IC	1.000
IOE -> PI	1.101
PSR -> CE	1.938
PSR -> PI	1.938
PSR x IC -> CE	1.315
PSR x IC -> PI	1.315

Collinearity statistics (VIF) - Inner model - Matrix

	CE	IC	IOE	PI	PSR	PSR x IC
CE						
IC	1.640			1.640		
IOE	1.101	1.000		1.101		
PI						
PSR	1.938			1.938		
PSR x IC	1.315			1.315		

Coefficient of Determination R^2

R-square - Overview

	R-square	R-square adjusted
CE	0.613	0.605
IC	0.046	0.041
PI	0.415	0.403

Effect Size f^2

f-square - List

	f-square
IC -> CE	0.222
IC -> PI	0.087
IOE -> CE	0.002
IOE -> IC	0.048
IOE -> PI	0.005
PSR -> CE	0.304
PSR -> PI	0.147
PSR x IC -> CE	0.003
PSR x IC -> PI	0.000

Predictive Relevance Q^2

PLSpredict LV summary - PLS-SEM

	Q^2predict	RMSE	MAE
IC	0.031	0.993	0.824
CE	0.458	0.743	0.587
PI	0.316	0.833	0.678

Results of Relationships in the Structural Model

Path coefficients - Mean, STDEV, T values, p values

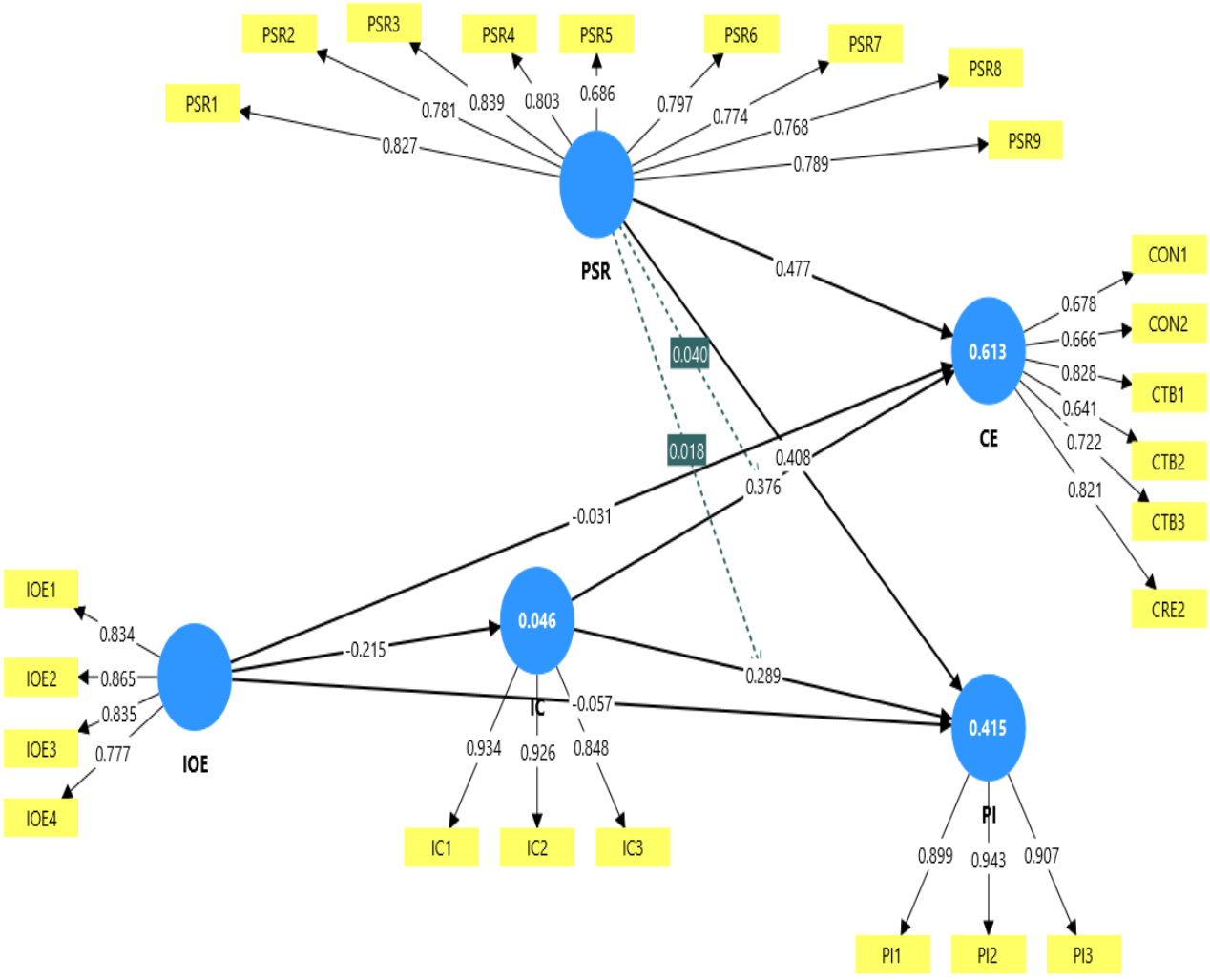
	Original sample (O)	Sample mean (M)	Standard deviation (ST...	T statistics (|O/STDEV|)	P values
IC -> CE	0.376	0.375	0.054	6.965	0.000
IC -> PI	0.289	0.286	0.074	3.932	0.000
IOE -> CE	-0.031	-0.036	0.050	0.624	0.533
IOE -> IC	-0.215	-0.228	0.071	3.023	0.003
IOE -> PI	-0.057	-0.060	0.058	0.979	0.327
PSR -> CE	0.477	0.479	0.053	8.996	0.000
PSR -> PI	0.408	0.412	0.074	5.496	0.000
PSR x IC -> CE	0.040	0.041	0.062	0.649	0.516
PSR x IC -> PI	0.018	0.015	0.064	0.275	0.783

Mediation Analysis Results

Specific indirect effects - Mean, STDEV, T values, p values

	Original sample (O)	Sample mean (M)	Standard deviation (ST...	T statistics (|O/STDEV|)	P values
IOE -> IC -> CE	-0.081	-0.086	0.030	2.687	0.007
IOE -> IC -> PI	-0.062	-0.065	0.026	2.371	0.018

Estimated structural model using SmartPLS



Appendix 4: Organizational Structure of Spotlight Agency

