



Article

Persuasion Cues and Consumer Engagement in Food Influencer Short-Form Videos: An ELM–COBRA Perspective

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Abstract

Beginning with the notion that short-form video sites represent key digital commerce destinations for food influencers in general, there is very little research explaining how specific persuasion cues lead to varying degrees of consumer engagement. Based upon the Elaboration Likelihood Model (ELM), Social Proof theory and the COBRA framework, this study aims to understand whether argument quality as a central-route cue and perceived emotional appeal as a peripheral-route cue affect consumption, contribution, creation engagement behaviors. Additionally, the study will determine if perceived post popularity, a platform-generated social proof signal, affects these relationships. A survey was conducted of 386 users of short food influencer videos. PLS-SEM analysis was performed on the survey data. Results indicated that both argument quality and perceived emotional appeal positively influence all three engagement levels. Perceived emotional appeal exerts a stronger effect, particularly on higher-engagement behaviors. The moderating effects of perceived post popularity were limited and applied solely to contribution, where it weakened the positive relationship between argument quality and contribution but strengthened the positive relationship between perceived emotional appeal and contribution. This study builds upon existing knowledge of how consumers respond to food influencer content by exploring differences between types of engagement and integrating platform-generated signals within an ELM-based theoretical model.

Keywords: food influencer marketing; short-form video; consumer engagement; elaboration likelihood model; COBRA framework; perceived post popularity



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1. Introduction

In recent years, social media influencers have influenced how consumers access, consider, and respond to brand-related content online, making influencer marketing an important part of digital commerce [1]. Food influencer short-form videos provide a suitable context for examining persuasive cues because they combine informational, social, and sensory elements within highly visual platform environments. Food influencers do not only present product-related information; they also construct lifestyle meanings and visually appealing food experiences while maintaining interaction with followers [2–4]. These characteristics are well matched with short-form video platforms, where concise, visually rich, and easily accessible content can be rapidly consumed and evaluated by consumers [5,6]. More importantly, food content naturally contains both utilitarian and hedonic value. Consumers may evaluate functional attributes such as price, healthfulness, and product information, while also responding to taste, enjoyment, and sensory

pleasure [7]. Sensory food appeals can further attract attention, evoke emotion, and support memory formation [8]. In other food video and live-commerce contexts, research has demonstrated that a variety of consumer response including perceived value and consumption behaviors are influenced by the content, influencer, and channel factors [9]. Meanwhile, consumer reactions to short-form videos from food influencers may therefore not only depend upon to the presented message, but also upon perceived visible signals generated by the platform (e.g., likes, comments, and shares) that indicate the level of popularity of the posted content [10,11]. Therefore, food influencer short-form videos represent an appropriate context to examine how both persuasive cues and perceived post-popularity signals affect consumer engagement in interactive digital commerce [12,13].

This context is particularly relevant in China, where short-form video platforms have become deeply embedded in consumers' everyday digital lives and social commerce practices. By December 2025, China had 1.125 billion internet users, and short-form video users reached 1.074 billion, accounting for 95.4% of all internet users [14]. Platforms such as Douyin, Xiaohongshu, Bilibili, and WeChat Channels integrate algorithmic recommendation, influencer–consumer interaction, visible engagement metrics, and commerce-related functions [13,15]. These features create an interactive environment in which consumers are repeatedly exposed to food influencer content, evaluate social cues such as post popularity, and engage through viewing, liking, commenting, sharing, and content creation. Therefore, China provides an appropriate setting for examining how persuasive cues and perceived post popularity jointly influence consumer engagement. At the same time, the findings should be interpreted as context-dependent because China's short-form video ecosystem is closely connected with its social commerce infrastructure and everyday digital consumption practices [12,16].

Despite the growing relevance of food influencer short-form videos, existing research remains fragmented. Prior studies have examined influencer marketing across different theories, contexts, and outcomes, but food influencers are still relatively underexplored within the broader influencer marketing literature [16,17]. Existing food influencer studies have linked consumer responses to message characteristics, influencer attributes, platform conditions, and heuristic cues, such as follower number, content type, and the presence of online review [12,18]. However, much of this work focuses on purchase intention, imitation, or product-related outcomes, while consumer engagement is often treated as a single overall construct or measured through isolated behaviors such as likes, comments, following, or co-creation [1,19,20]. This limits understanding of how food influencer content stimulates different levels of engagement behavior. Two specific theoretical gaps therefore remain. First, limited research explains how persuasive cues influence different forms of consumer engagement in food influencer short-form videos. Although the elaboration likelihood model (ELM) explains how consumers process central and peripheral persuasion cues [21], it has rarely been integrated with the COBRA framework, which distinguishes consumption, contribution, and creation as different levels of engagement behavior [22]. Second, perceived post popularity has received limited attention as a platform-generated boundary condition. In short-form video environments, visible engagement metrics may signal social approval and influence how users evaluate influencer-generated content [10,23]. Consequently, it remains unclear how argument quality and perceived emotional appeal shape COBRA-based engagement, and whether perceived post popularity strengthens or weakens these cue–engagement relationships.

To address these gaps, this study integrates an ELM-informed cue-processing perspective with the COBRA framework to explain consumer engagement with food influencer short-form video content. ELM explains how consumers respond to persuasive cues, while COBRA classifies the resulting engagement behaviors into consumption, contribution,

and creation. Specifically, the quality of argument is understood as central-related route cue, while perceived emotional appeal is conceptualized as a peripheral-route cue. By linking these cues to different COBRA-based engagement behaviors, this study examines whether persuasive cues influence consumer engagement differently across behavioral levels. It further introduces perceived post popularity as a platform-generated social proof cue that may condition the effects of persuasive cues on engagement [10,11,24]. By doing so, this study moves beyond undifferentiated views of engagement and provides a more precise account of how message-related and platform-related cues jointly shape consumer responses in food influencer short-form video environments.

Accordingly, this study addresses the following research questions:

RQ1: How do argument quality and perceived emotional appeal influence different forms of consumer engagement (consumption, contribution, and creation) in food influencer short-form videos?

RQ2: How does perceived post popularity, as a platform-based social-proof cue, strengthen or weaken the relationships between argument quality, perceived emotional appeal, and different forms of consumer engagement in food influencer short-form videos?

This research contributes to existing literature in three ways. First, it applies an ELM-informed cue-processing perspective to explain how persuasive cues are associated with behavioral engagement in the fast-paced and visually rich context of food influencer short-form video content. Second, it integrates ELM with the COBRA framework, allowing consumer engagement to be examined as a multidimensional behavioral outcome. Third, this study introduces “perceived post-popularity” as a platform-generated social-proof cue in this field. In addition, from an applied perspective, the findings can assist both food brands and social media influencers on designing their own content marketing strategies based on whether they wish to elicit certain types of consumer behavior through their online content.

2. Literature Review

2.1. Food Influencer Short-Form Video

Influencers in today’s digital environment of social media are popularly recognized as well-established producers of online content that has attracted consumer attention and sustained user engagement for some time [25]. Among the many types of influencer content now available on-line, food influencer content is unique and distinctive from other influencer content due to its ability to convey both factual food related information as well as visually appealing representations of food associated with particular lifestyles and identities [2,3]. Consequently, the type of content produced by food influencers will impact how consumers assess the quality of certain products and influence how consumers perceive, experience and respond to food in digital spaces.

The differentiation of these food influencer content become most apparent in environments of short-form videos which are characterized by fast-paced, visually immersive communication and high levels of visibility within platform-based interaction [12,13]. Existing research further suggests that responses to food influencer content are shaped by a combination of informational and non-informational factors, including entertainment value, self-efficacy-related mechanisms, credibility, review-related cues and platform user-friendliness [18,20,26]. Food Influencers can be expected to elicit not only purchase-related responses but can also stimulate more active and participative types of behavior, such as imitation or co-creation, suggesting that their impact extends beyond persuasion in a narrow commercial sense [19,24]. Moreover, consumer responses appear to emerge through both reflective and affective pathways, indicating that food-related influencer content contains both cognitively oriented and emotionally driven persuasive elements [27].

In the Chinese short-form video context, food influencer content is shaped by both message features and platform-based social cues. Short-video platforms such as Douyin and Xiaohongshu combine algorithmic recommendation, influencer–consumer interaction, visible engagement indicators, and commerce-related functions, which may influence how consumers evaluate and engage with food-related content [13,15]. This context is also relevant for examining perceived post popularity because group evaluations, interpersonal influence, and visible social validation may affect individual judgments in collectivistic cultural settings [13,28]. Thus, likes, comments, shares, and positive responses may function as social-proof cues that signal collective approval, credibility, and content relevance.

Taken together, food influencer short-form videos in China constitute a distinctive communication environment in which informational, affective, and platform-related elements jointly shape consumer response, making them well suited for the study of differentiated consumer engagement.

2.2. Elaborate Likelihood Model (ELM)

The Elaboration Likelihood Model (ELM) provides the main theoretical basis for explaining how consumers process persuasive cues in food influencer short-form videos and how such processing subsequently shapes different levels of consumer engagement. ELM proposes two persuasive pathways: one is the central route, in which individuals carefully evaluate the quality and relevance of the information; the other is the peripheral route, where judgments are more susceptible to emotions, heuristics, or cue signals [21,29]. Attitudes formed through the central route are typically more stable and enduring, while those formed through the peripheral pathway tend to be more immediate and heavily influenced by cue-related factors [21]. In this study, however, the objective is not to test the complete ELM attitude-change mechanism. Instead, the study adopts an ELM-informed cue-processing perspective to examine how consumers respond to different persuasive cues in food influencer short-form video content.

ELM is particularly applicable in digital media environments, where consumers encounter persuasive content under varying levels of attention, motivation, and cognitive effort. Prior research further suggests that persuasion effects in social media are not uniform across users or settings, but depend on message features, audience characteristics, and situational conditions [30,31]. This logic is particularly applicable to food influencer short-form videos, where consumers are exposed simultaneously to product-related information, emotional stimulation, and socially visible platform cues within a rapid, visually rich environment. Accordingly, the present study operationalize ELM through argument quality as a central-route-related cue and perceived emotional appeal as a peripheral-route-related cue.

Therefore, the integration of ELM and COBRA does not imply that the study tests the full attitude-change process of ELM. Rather, ELM explains the persuasive cue-processing logic, while COBRA classifies the resulting behavioral engagement outcomes. This approach is suitable for short-form video environments, where users often respond to persuasive cues through visible engagement behaviors such as viewing, liking, commenting, sharing, and creating related content.

2.2.1. Argument Quality as a Central-Route-Related Cue

In the original Elaboration Likelihood Model, central-route persuasion occurs when individuals have sufficient motivation and ability to scrutinize message arguments [21]. The argument quality refers to how well the content of the message presents a substantial number of valid, pertinent, and persuasive reasons for a position on the issue presented in the message [10,21,32,33].

Following prior ELM-based research, argument quality is commonly used to represent the informational and cognitive dimension of persuasive messages [34]. In food influencer short-form video formats, this informational cue may be reflected in recommendations, product descriptions, ingredients, preparation methods and/or evaluative claims that invite additional deliberation. However, because short-form videos are often consumed rapidly and casually, argument quality should not be interpreted as evidence that all viewers engage in full systematic elaboration. This study conceptualizes argument quality as a central-route-related informational cue rather than direct evidence of complete central-route processing. This interpretation is also consistent with social media and online persuasion research, where persuasive message features such as argument quality have been linked to liking, sharing, and message diffusion [10].

2.2.2. Perceived Emotional Appeal as a Peripheral-Route-Related Cue

In comparison to prior research, the current study has conceptualized an “perceived emotional appeal” as viewers’ perceived affective cue strength in food influencer short-form videos. A particular cue or factor can be considered to function peripherally if its persuasive force is generated primarily through activation of an individual’s affective response and/or motivation toward processing a message, and does so in a manner which requires little to no cognitive elaboration [35–37]. This perception-based conceptualization is consistent with social media advertising research, where perceived emotional appeal has been examined as a perceived persuasive feature that influences positive user responses [38].

Research has demonstrated that emotional elements of a message will attract consumer’s attention, stimulate feedback from that consumer and increase the likelihood of message shareability [39]. In food-related contexts, sensory appeals can further capture attention, emotion, and memory formation [8]. However, the evidence suggesting that the emotional route of influence can result in greater levels of impact within digital food environments [27]. Therefore, perceived emotional appeal is treated as a peripheral-route-related cue in this study. It reflects the sensory, affective, and experiential side of food persuasion and may encourage consumer engagement even when viewers do not engage in extensive cognitive elaboration.

2.3. Consumer Engagement and the COBRA Framework

In digital marketing, consumer engagement is increasingly seen as an important marketing outcome because it reflects consumers’ behavior toward a brand or company beyond purchasing behavior [40]. A behavioral approach to consumer engagement fits well into social media, consumers engagement with content primarily online through their own actions, rather than always through actual purchases. The current research defines consumer engagement based on consumers’ social media-related brand activity, which is consistent with definitions of digital customer engagement as behaviors indicating brand engagement beyond transactions [41,42]. This definition is particularly useful for short-form videos, as consumers can express how they feel about influencer content through many different forms of visible actions online, not simply through purchasing.

While it is important to consider the level of consumer engagement, such engagement should not be reflected using a single or undifferentiated indicator. Van Doorn et al. (2010) points out the need to consider the similarities in the form, scope, and intensity of engagement from multiple perspectives, thus requiring a more structured conceptual approach than simply summarizing indicators [40]. The COBRA model provides a useful behavioral perspective for examining how consumers engage with brands online by breaking down engagement into three distinct levels: consumption, contribution, and creation [22,43]. All these categories have varying degrees of engagement: Consumption refers to passively

receiving and viewing brand related material; contribution describes the next stage of actively responding to brand content via likes, comments, etc.; and creation is the highest degree of engagement when creating their own unique brand-related content [22,44]. This hierarchical structure of engagement is especially applicable to short-form video formats because consumers are able to respond differently to the same content through multiple behaviors instead of just one.

The COBRA framework has been shown to have applicability for influencer marketing scenarios [45]. Consumers' reactions to influencer-generated communications represent an extension of COBRA's constructs of consumption, contribution to, and creation of content based on influencer messaging [46,47]. Influencer performance should be measured by means beyond basic reach statistics and include various types of engagement-based interactions and evaluations [48]. Research related to food influencers indicates that influencer-generated content can foster consumer co-creation of product brands and support follow intentions [49,50]. Together, this represents several areas where consumers can become engaged with content in ways that go beyond passive exposures or simple interactions. Therefore, the current study will use the COBRA framework to assess how consumers engage with food influencer-generated content in short-form video formats and will evaluate each of the three behaviors of consumption, contribution to, and creation of content separately. Further, there is potential for differing routes to persuasion to have differential effects depending on the level of consumer engagement.

2.4. Social Proof Theory

Social proof theory states that people will typically rely on others' actions or thoughts as a guide for their own behaviors when there is a lack of clear information [51–53]. The application of social proof theory is particularly evident in social media contexts, where consumers interact through shared content and publicly visible displays of group reactions. These social validation mechanisms include likes, comments, shares, and reviews, which may signal the perceived post popularity, credibility, value, and acceptance of online content. They are therefore not only records of past user actions, but also social cues through which consumers communicate the relevance and trustworthiness of products or content to one another. Previous studies have found that popular related cues may increase the diffusion of messages and influence consumers' views of products or services by signaling that they are worth paying attention to and endorsing socially [10,54,55].

This perspective can be especially important in the context of food influencer short-form videos because viewers receive not only persuasive cues but also social cues from the platform that they see. This study will use the perceived number of likes, comments, shares, and related responses as indicators of perceived post popularity based on social proof signals generated by the platform [11,54]. Prior studies suggest that such cues can increase perceived usefulness, reduce uncertainty, and strengthen the persuasive power of online content by signaling that it is credible, valuable, and socially endorsed [10,56,57]. Related evidence from food and short-video contexts likewise indicates that users rely on surrounding digital signals, such as review availability and visible engagement, when responding to influencer-promoted content [18,58]. This conditional logic is consistent with the Elaboration Likelihood Model. ELM argues that some variables do not influence persuasiveness by acting as arguments themselves, but rather by affecting the scope and direction of information processing [21]. In the present study, perceived post popularity is treated as a platform-based social proof cue rather than as an engagement outcome. Prior users generate engagement metrics, such as likes, comments, and shares, which become visible signals for later viewers. Thus, perceived post popularity captures how consumers interpret existing popularity indicators as signs of social validation, credibility,

and content popularity, whereas consumer engagement captures the consumers' own behavioral response. In the context of short-form videos, where information spreads rapidly and processing time is limited, visible popularity cues (likes, comments, shares, and positive responses) may serve as readily available heuristic signals [59,60]. Accordingly, the present study conceptualizes perceived post popularity as a perceived platform-generated boundary condition that may selectively condition the effects of persuasive routes on consumer engagement in food influencer short-form videos.

3. Research Model and Hypothesis Development

Based on the ELM and Social Proof Theory, this study investigates how central-related and peripheral-related routes influence consumer engagement as well as the moderate effect of perceived post popularity on consumer behavior (see Figure 1).

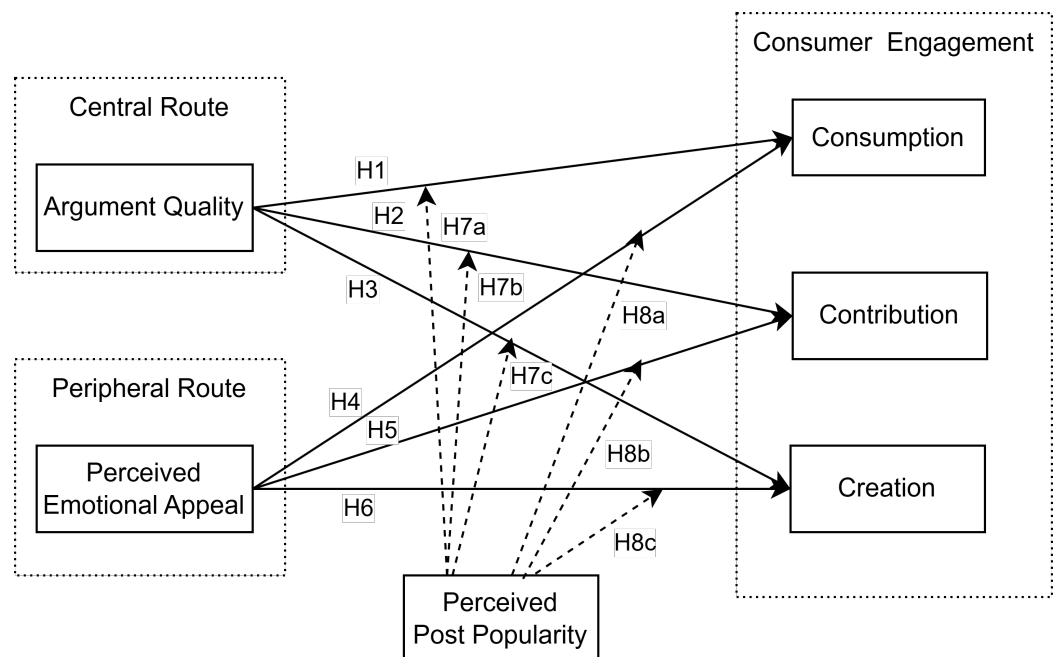


Figure 1. Research Model.

3.1. Argument Quality

According to Elaboration Likelihood Model (ELM), the quality of an argument serves as a cue associated with the central route of information processing, as it reflects the strength, clarity of message content, and supporting evidence when audiences possess both the motivation and cognitive capacity to process messages thoroughly [21,29]. In digital environments, higher-quality information tends to enhance perceived usefulness and value, making users more likely to respond to content they regard as informative, reliable, and worthwhile [61]. Prior research further suggests that informative and relevant message content can stimulate relatively passive forms of engagement, such as viewing and clicking, and may also encourage more interactive responses, including liking and sharing [10,36,62,63]. In food influencer contexts, content quality has also been linked to higher-order participatory outcomes such as brand co-creation, indicating that cognitively oriented message characteristics may foster more active forms of engagement as well [49]. Taken together, these arguments suggest that argument quality, as a central-related-route, should positively influence consumption, contribution, and creation in food influencer short-form videos. Thus,

H1. *Argument quality is positively associated with consumer consumption in food influencer short-form video.*

H2. *Argument quality is positively associated with consumer contribution in food influencer short-form video.*

H3. *Argument quality is positively associated with consumer creation in food influencer short-form video.*

3.2. Perceived Emotional Appeal

From an ELM perspective, perceived emotional appeal serves as a peripheral route cue linked to message characteristics, as it drives persuasion by evoking affective responses and enhancing motivational salience [21,29,35]. In social media environments, emotionally charged content is especially consequential because platforms make such contents more visible and more easily circulated through network-visible channels [64]. Prior research consistently shows that emotional content enhances feedback, shareability, and other engagement [39,65]. Existing research further suggests that emotionally oriented message characteristics may be associated with broader forms of engagement and active brand-related response, implying that affective cues could also support higher-order participation in social media environments [66,67]. This concept is especially relevant to food influencer short-form videos because they typically communicate through affective or expressive cues rather than just information [2,68]. Overall, these arguments suggest that perceived emotional appeal, as an example of a cue associated with the peripheral route, will have a positive effect on consumption, contribution, and creation for food influencer short-form videos. Thus,

H4. *Perceived emotional appeal is positively associated with consumer consumption in food influencer short-form video.*

H5. *Perceived emotional appeal is positively associated with consumer contribution in food influencer short-form video.*

H6. *Perceived emotional appeal is positively associated with consumer creation in food influencer short-form video.*

3.3. Perceived Post Popularity

Drawing on social proof theory, this study asserts that perceived post popularity will moderate the extent to which various message-related persuasive routes impact consumer engagement in food influencer short-form videos. The visibility of platform generated indicators such as number of likes, comments and shares serves as evidence of collective support for content and can affect consumers' perceptions of relevance, credibility, and worthiness of their time [11,24,54]. This aligns with the ELM, which suggests that when time and resources are limited for information processing, the strategy for using cues may influence or cause deviations in information processing [21,59,60]. Additionally, prior studies have shown that popularity-related cues have been found to be effective boost the dissemination of messages, behavioral intentions, and engagement behaviors toward influencer content, suggesting that the perceived endorsement generated through platforms can also affect how users process persuasive messages [10,15,69]. Therefore, within the context of short-form video environment where the pace of video consumption is very rapid, perceived post popularity should serve as a platform-generated boundary condition moderating the effects of various message features on consumer engagement. Since

argument quality depends more on central-related-route processing, whereas perceived emotional appeal relies more heavily on peripheral-route processing, the conditioning role of perceived post popularity may differ across these persuasive cues. Likewise, because consumption, contribution, and creation reflect different levels of behavioral involvement, the moderating effect of perceived post popularity is expected to vary across these engagement dimensions. Accordingly,

H7a. *Perceived post popularity moderates the relationship between argument quality and consumption.*

H7b. *Perceived post popularity moderates the relationship between argument quality and contribution.*

H7c. *Perceived post popularity moderates the relationship between argument quality and creation.*

H8a. *Perceived post popularity moderates the relationship between perceived emotional appeal and consumption.*

H8b. *Perceived post popularity moderates the relationship between perceived emotional appeal and contribution.*

H8c. *Perceived post popularity moderates the relationship between perceived emotional appeal and creation.*

4. Methodology

4.1. Data Collection

Data were collected through an online questionnaire administered via Wenjuanxing from 15 November until 31 December 2025. The survey link was distributed primarily through the researchers' personal, university, and social media networks based in Xi'an, Shaanxi Province, mainly via WeChat and Douyin. Therefore, the sampling process was network-based and geographically centered on Shaanxi Province. All respondents reported residence in Shaanxi Province, although they came from different city-tier backgrounds within the province. Thus, the city-tier distribution reflects respondents' self-reported residential context rather than a stratified national sampling frame. This study used purposive and convenience sampling to recruit respondents with relevant experience in food influencer short-form video consumption and engagement. However, the sample should not be interpreted as statistically representative of all short-form video users or all consumers.

A Shaanxi/Xi'an-centered sampling frame was theoretically appropriate because food influencer short-form video engagement is often embedded in geographically situated consumption contexts. Restaurant exploration, local dining recommendations, and food-destination narratives are closely tied to specific places, local food culture, offline dining accessibility, and regional consumption scenes [70,71]. Focusing on Shaanxi Province therefore helped maintain contextual consistency and reduce cross-regional variation when testing the relationships among argument quality, perceived emotional appeal, perceived post popularity, and COBRA-based engagement behaviors. Xi'an further provides a meaningful short-video cultural tourism context because prior studies have examined it as a wanghong (influencer) city shaped by tourists, media practices, and urban consumption [72], and have shown that visitor-initiated short videos shaped tourism flow and digital attention around Yongxing Square, a food-related place, in Xi'an [73]. In addition, the Tsinghua University and National Image Research Center white paper identifies Xi'an as an early adopter of short-video city-image communication and highlights local food as an important symbolic element in short-video-based cultural-tourism communication [74]. Therefore, the

Shaanxi/Xi'an-centered sample provides a contextually coherent regional setting, although it should not be interpreted as nationally representative of all Chinese consumers or all short-form video users.

To qualify for participation, Respondents were asked to meet the criteria: (1) have used short-form video platforms at least once per month, (2) be aged between 18 and 35 years, and (3) have previously watched food influencer short-form videos. In this study, active users were defined as respondents who had used short-form video platforms at least once per month and had experience with short-form video engagement behaviors, such as viewing, liking, commenting, sharing, or creating content. The high proportion of respondents who used short-form video apps daily or almost daily indicates that the sample mainly reflects highly active users. Screening questions were placed at the beginning of the questionnaire. Respondents that failed to answer the screening questions correctly were removed from eligibility.

Eligible respondents were provided with an electronic informed consent document prior to participating in the survey. This consent form described the purposes of the study as well as explained that participation in this survey was strictly voluntary and all of their responses would remain anonymous. A total of 450 survey links were sent out, and 420 surveys were completed. After removing 29 incomplete responses and 5 invalid responses due to straight-lining or outlier issues, the final sample comprised 386 valid cases for analysis.

The final sample size was considered sufficient for PLS-SEM analysis. First, it exceeded the minimum sample size recommendations commonly suggested for variance-based structural equation modeling and scale-based survey research [75]. Second, based on Tabachnick and Fidell's Regression-Based Guidelines, $N \geq 50 + 8m$, when m represents the number of predictor variables, the minimum required sample size is 90. Even under the stricter criterion of $N \geq 104 + m$, the required sample size was 109 [76]. Third, using G*Power to test linear multiple regression analysis with a medium effect size ($f^2 = 0.15$, $\alpha = 0.05$, and statistical power = 0.95), a minimum required sample size is 138. Accordingly, the final sample size of 386 is more than sufficient to test the proposed model. All responses in this study were anonymous, so no personally identifiable information was collected or stored by the research team.

Since the model also includes moderation hypotheses, an additional sensitivity analysis was conducted using G*Power 3.1.9.7. The analysis used an F-test for linear multiple regression, fixed model, R^2 increase, with one tested predictor, five total predictors, $\alpha = 0.05$, statistical power = 0.80, and a total sample size of 386. The result showed that the sample could detect a minimum effect size of approximately $f^2 = 0.020$. This suggests that the sample size was adequate for detecting small-to-moderate interaction effects. However, because the observed moderation effect size was very small, approximately $f^2 = 0.009$, the moderation findings should be interpreted cautiously.

4.2. Measures Instrument

Measures for this study are based on well-established, previously tested, and validated scales found in previous research. Minor changes in wording were made to match the content of food influencer short-form video contexts; however, the original construct meanings remained intact. The survey was administered in China. Therefore, the instrument was prepared in both English and Chinese. Brislin's (1970) translation/back-translation method is used as a guideline [77]. A bilingual expert first translated the English items into Chinese. Then, an independent bilingual reviewer back-translated the Chinese items into English. Both translators reviewed each item to determine whether there were any inconsistencies.

If inconsistencies existed, they would have been discussed and resolved to verify that the Chinese version represented semantic equivalence with the English version.

Argument quality was measured using four items adapted from McLean and Osei-Frimpong [78]. Perceived emotional appeal was measured using four items adapted from Abu Bakar et al. [79]. Perceived post popularity was measured using items adapted from Chang et al. [10], originally derived from He et al. [80], with minor wording modifications to suit the present context. Consumer engagement was measured across three dimensions—consumption, contribution, and creation—using items adapted from Schivinski et al. and Simon and Tossan [44,81]. All items were assessed using a five-point Likert scale, with scores ranging from 1 (strongly disagree) to 5 (strongly agree). A complete list of measurement items is provided in Appendix A.

To enhance instrument clarity and content validity, the questionnaire was pretested with three marketing academics and five experienced consumers of food influencer short-form videos. Pilot testing was performed using 30 survey respondents to test the validity of the items in the survey. Results from the pilot study indicated that all constructs had a Composite Reliability value greater than 0.70 which is considered to be an acceptable level [75]. Meanwhile, this study introduced a theoretically unrelated indicator variable, the respondents' attitude towards the color blue ("Blue is a very beautiful color"), to reduce potential common method bias and ensure the anonymity of the respondents [82,83].

4.3. Data Analysis Technique

Data were analyzed using a two-step procedure. SPSS 31 was used for data screening, data cleansing, and descriptive analysis, while SmartPLS 4.0 was employed to assess common method bias, the measurement model and the structural model.

PLS-SEM was selected because the proposed model includes multiple latent constructs, several endogenous variables, and moderating effects, making it suitable for testing complex and prediction-oriented models [84]. Common Method Bias was examined by assessing bias in SmartPLS via use of a Marker Variable Approach [82,83]. The Measurement Model was assessed via evaluation of outer loadings, reliability, convergent validity, and discriminant validity; while the Structural Model was evaluated via assessment of path coefficients, VIF, f^2 , R^2 , Q^2 , and interaction effects.

The significance of the structural paths was tested through bootstrapping with 10,000 resamples. The direct-effect hypotheses were tested using one-tailed tests at the 5% level because their positive directions were theoretically specified before analysis. In social media marketing, persuasive message features such as argument quality have been associated with liking, sharing, and message diffusion [10], while emotional appeal has been shown to encourage positive responses to social media advertising [38]. Therefore, the hypothesized direct effects of argument quality and perceived emotional appeal on consumer engagement were specified as positive rather than non-directional. In contrast, two-tailed tests were used for the moderation hypotheses because the strength and conditional pattern of the interaction effects were less certain in the food influencer short-form video context. For the moderation results, $p < 0.10$ was interpreted as marginal significance and was discussed cautiously.

5. Result

5.1. Participants' Characteristics

A total of 386 respondents provided valid responses for analysis (Table 1). The demographics indicated that approximately 168 were male (or 43.5% of the group) and 218 were female (or 56.5% of the group), therefore demonstrating a relatively balanced gender distribution with a slight bias toward female participants. The educational backgrounds of

the respondents showed that the majority of respondents ($n = 329$, 85.2%) had completed their bachelors. Junior colleges were represented in the next largest number of respondents ($n = 38$, 9.8%), then those who completed their masters ($n = 12$, 3.1%), and finally those who completed their senior high school or less ($n = 7$, 1.8%). As it relates to the location where they reside, more than half of all respondents were from either a Tier 1 or tier 1 new city ($n = 219$; 56.7%), and approximately 18.7% ($n = 72$) of the respondents resided in Tier 2 cities. Approximately 24.4% ($n = 94$) of the respondents lived in third-tier or lower-tier cities, county-level regions, and rural areas.

Additionally, Douyin was the dominant platform for watching food influencer short-form videos ($n = 302$, 78.2%), followed by Xiaohongshu ($n = 30$, 7.8%), Bilibili ($n = 29$, 7.5%), Kuaishou ($n = 19$, 4.9%), and WeChat Channels ($n = 6$, 1.6%). In terms of content preference, restaurant exploration videos were the most commonly watched type ($n = 170$, 44.0%), followed by mukbang display videos ($n = 85$, 22.0%) and cooking tutorial videos ($n = 72$, 18.7%). Other content types accounted for the smallest proportion of responses ($n = 59$, 15.3%). Finally, most respondents were highly active users of short-form video applications, with 365 participants (94.6%) reporting that they used such apps every day or almost every day. Overall, these characteristics indicate that the sample was appropriate for studying consumer engagement in food influencer short-form videos context.

Table 1. Profile of respondents.

Variable	Category	Frequency	Percentage
Gender	Male	168	43.5%
	Female	218	56.5%
Education Level	Bachelor's degree	329	85.2%
	Junior college	38	9.8%
	Master's degree	12	3.1%
	Senior high school or below	7	1.8%
Residential Location	Tier 1 or new Tier 1 cities	219	56.7%
	Tier 2 cities	72	18.7%
	Tier 3 or lower-tier cities/county/rural areas	94	24.4%
	Other/not specified	1	0.3%
Primary Platform	Douyin	302	78.2%
	Xiaohongshu	30	7.8%
	Bilibili	29	7.5%
	Kuaishou	19	4.9%
	WeChat Channels	6	1.6%
Content Preference	Restaurant exploration videos	170	44.0%
	Mukbang display videos	85	22.0%
	Cooking tutorial videos	72	18.7%
	Other content types	59	15.3%
Usage Frequency	Every day or almost every day	365	94.6%
	Less than every day or almost every day	21	5.4%

5.2. Data Screening and Preparation

The dataset was screened prior to hypothesis testing. Responses were examined for completeness, careless responses, and coding accuracy. After data screening and

purification, 386 valid responses were retained for analysis. Descriptive analyses were conducted using SPSS 31, while SmartPLS 4.1.1.4 was employed to assess common method bias and evaluate the measurement model and structural model.

5.3. Common Method Bias

To avoid potential issues with common-method bias (CMB) in this study due to the use of a cross-sectional, self-reporting questionnaire, we employed both procedural and statistical remedial actions. Procedurally, respondent anonymity was assured to reduce evaluation apprehension and social desirability bias. Statistically, employing a theoretically unrelated marker variable (respondents' attitudes towards blue) [82,83,85]. Although China-specific validation remains limited, recent studies using Chinese samples have also adopted attitude toward the color blue as a marker variable and reported weak or insignificant associations with substantive constructs [86]. The marker variable was not part of the substantive model and was presented as a simple general preference item to avoid making its methodological purpose salient. It was also translated and back-translated together with the full questionnaire. After taking this marker variable, the R^2 values changed only marginally, from 0.381 to 0.387 for consumption engagement, from 0.411 to 0.418 for contribution engagement, and from 0.352 to 0.353 for creation engagement (Appendix B). In addition, the direction and significance of the key structural paths remained stable (Appendix C). These results suggest that CMB did not have a substantial impact on the model's estimation results. However, because the cultural applicability of attitude toward the color blue as a marker variable has not been fully established in Chinese consumer samples, the marker-variable result is interpreted as an auxiliary diagnostic rather than conclusive evidence. In addition, full collinearity VIF values were examined as a supplementary diagnostic, and the results did not indicate serious CMB concerns. Taken together, these procedural and statistical checks suggest that common method bias was unlikely to substantially distort the model estimation.

5.4. Measurement Model Assessment

As shown in Table 2, the measurement model has acceptable reliability and convergent validity. The outer loadings ranged from 0.592 to 0.915. Although five indicators (ARQ1, EMA4, CON1, CTR5, CTR6) had loadings between 0.50–0.70, they were retained because the corresponding constructs met the recommended reliability and validity criteria and the items remained theoretically meaningful.

Specifically, AVE values ranging from 0.535 to 0.825, indicating adequate convergent validity. Cronbach's alpha values ranged from 0.708 to 0.894, and composite reliability values ranged from 0.711 to 0.894, exceeding the 0.70 threshold and remaining below 0.95 [87], suggesting satisfactory internal consistency without item redundancy. According to Hair et al. (2022), it is permissible to retain indicators with factor loadings between 0.40 and 0.70 if AVE and composite reliability meet the recommended criteria and the items contribute to content validity [75]. Although EMA4 showed the lowest loading (0.592), it was retained because it captures the perceived emotional tie between the viewer and the food influencer short-form video, complementing EMA1–EMA3, which reflect emotional intensity, emotional engagement, and emotional appreciation. Removing EMA4 would narrow the conceptual coverage of perceived emotional appeal. Therefore, the measurement model was considered acceptable for structural model evaluation. Thus, the adequacy of the measurement model was determined to be acceptable for structural model evaluation.

Table 2. Measurement model assessment.

Construct	Items	Loadings	AVE	Cronbach's Alpha	CR
ARQ	ARQ1	0.695	0.633	0.806	0.822
	ARQ2	0.851			
	ARQ3	0.829			
	ARQ4	0.798			
EMA	EMA1	0.836	0.573	0.744	0.754
	EMA2	0.811			
	EMA3	0.767			
	EMA4	0.592			
POP	POP1	0.812	0.659	0.742	0.745
	POP2	0.834			
	POP3	0.790			
CON	CON1	0.659	0.535	0.708	0.711
	CON2	0.752			
	CON3	0.785			
	CON4	0.723			
CTR	CTR1	0.723	0.562	0.842	0.847
	CTR2	0.834			
	CTR3	0.824			
	CTR4	0.760			
	CTR5	0.679			
	CTR6	0.660			
CRE	CRE1	0.897	0.825	0.894	0.894
	CRE2	0.912			
	CRE3	0.915			

Note: ARQ = argument quality; EMA = perceived emotional appeal; POP = perceived post popularity; CON = consumption; CTR = contribution; CRE = creation; AVE = average variance extracted; CR = composite reliability.

The discriminant validity Table 3 of all constructs was validated using the heterotrait–monotrait ratio (HTMT). All HTMT values were less than 0.9, thus supporting discriminant validity [88].

Table 3. Discriminant validity HTMT.

	ARQ	CON	CRE	CTR	EMA	POP
ARQ						
CON	0.753					
CRE	0.567	0.624				
CTR	0.640	0.889	0.892			
EMA	0.823	0.730	0.696	0.765		
POP	0.884	0.681	0.470	0.634	0.878	

5.5. Structural Model Assessment

5.5.1. Main Effects

As shown in Table 4, all inner VIF values were less than the recommended threshold of three, indicating no multicollinearity concerns. The results supported all six main-effect hypotheses. Argument quality significantly predicted consumption engagement ($\beta = 0.330$, $p < 0.001$), contribution engagement ($\beta = 0.192$, $p < 0.05$), and creation engagement ($\beta = 0.253$, $p < 0.001$). Perceived emotional appeal also had significant positive effects on consumption engagement ($\beta = 0.269$, $p < 0.001$), contribution engagement ($\beta = 0.420$,

$p < 0.001$), and creation engagement ($\beta = 0.453$, $p < 0.001$). Among these effects, perceived emotional appeal showed the strongest influence on creation engagement ($\beta = 0.453$, $f^2 = 0.152$), followed by contribution engagement ($\beta = 0.420$, $f^2 = 0.144$), suggesting that perceived emotional appeal is particularly important in driving higher levels of consumer engagement in food influencer short-form videos.

The direct effects of perceived post popularity on consumption, contribution, and creation engagement were included to properly estimate the interaction effects. The results showed that these effects were not significant at the conventional 5% level; however, the effects on consumption ($p = 0.085$) and contribution ($p = 0.090$) were marginally significant at the 10% level. Its direct effect on creation engagement was not significant. Suggesting that perceived post popularity is better understood as a conditional cue rather than an independent predictor of engagement. As these paths were not the primary focus of the hypotheses, they were interpreted only as auxiliary effects.

Table 4. Main effects and moderator direct effects.

Hypothesis	β	STDEV	<i>t</i> Values	<i>p</i> Values	95% CI	VIF	f^2
ARQ → CON	0.330	0.069	4.789	0.000	[0.215, 0.441]	2.219	0.079
ARQ → CTR	0.192	0.067	2.862	0.002	[0.084, 0.303]	2.219	0.028
ARQ → CRE	0.253	0.073	3.474	0.000	[0.135, 0.373]	2.219	0.044
EMA → CON	0.269	0.075	3.563	0.000	[0.145, 0.394]	2.081	0.056
EMA → CTR	0.420	0.064	6.590	0.000	[0.316, 0.525]	2.081	0.144
EMA → CRE	0.453	0.065	6.996	0.000	[0.347, 0.560]	2.081	0.152
POP → CON	0.088	0.064	1.374	0.085	[−0.016, 0.194]	2.262	0.006
POP → CRE	−0.090	0.074	1.221	0.111	[−0.214, 0.030]	2.262	0.006
POP → CTR	0.089	0.066	1.339	0.090	[−0.020, 0.196]	2.262	0.006

Note: One-tailed; STDEV = bootstrapped standard deviation; CI = confidence interval; VIF = variance inflation factor; f^2 = effect size.

5.5.2. Moderating Effects

The moderating effect of perceived post popularity was studied by estimating interaction terms using the two-stage approach in SmartPLS. Based on 10,000 bootstrap resamples and two-tailed testing, the results provide limited support for perceived post popularity as a boundary condition (Table 5). Of the six hypothesized interaction effects, only two reached marginal significance at the relaxed 10% level, and none were significant at the conventional 5% level. Specifically, perceived post popularity moderated the relationship between argument quality and contribution engagement negatively ($\beta = -0.090$; $t = 1.827$; $p = 0.068$) and positively moderated the relationship between perceived emotional appeal and contribution engagement ($\beta = 0.095$; $t = 1.757$; $p = 0.079$). All of the other interaction effects for both consumption and creation engagement were not statistically significant.

The data suggests that perceived post popularity does not work as an overall multiplier for consumers' level of engagement. Instead, it acts as a selective and somewhat weak boundary condition, specifically affecting the levels of contribution engagement. While the f^2 measures of the moderating effects were relatively low (i.e., 0.009), moderator effects in studies focused on behavior tend to be relatively moderate [75,89]. Therefore, its practical significance is limited. The construct is retained in the model because it is theoretically relevant to social proof theory and platform-based persuasion, but the moderation findings should be interpreted as preliminary and theoretically suggestive rather than as strong evidence of a robust moderating effect.

Table 5. Results of the Moderation Analysis.

Hypothesis	β	STDEV	t Values	p Values	95% CI	VIF	f^2
POP $\times$ ARQ $\rightarrow$ CON	−0.060	−0.056	1.201	0.230	[−0.134, 0.029]	2.385	0.004
POP $\times$ ARQ $\rightarrow$ CRE	−0.046	−0.042	0.891	0.373	[−0.126, 0.042]	2.385	0.002
POP $\times$ ARQ $\rightarrow$ CTR	−0.090	−0.087	1.827	0.068	[−0.166, −0.005]	2.385	0.009
POP $\times$ EMA $\rightarrow$ CON	0.008	0.002	0.126	0.900	[−0.095, 0.102]	2.365	<0.001
POP $\times$ EMA $\rightarrow$ CRE	0.082	0.079	1.485	0.138	[−0.012, 0.170]	2.365	0.006
POP $\times$ EMA $\rightarrow$ CTR	0.095	0.092	1.757	0.079	[0.002, 0.182]	2.365	0.009

Note: Two-tailed; STDEV = bootstrapped standard deviation; CI = bias-corrected confidence interval; VIF = variance inflation factor; f^2 = effect size.

5.5.3. Explanatory and Predictive Power

The model provided an acceptable amount of explanatory power and predictive relevance as shown in Table 6. There was a moderate level of explanatory power indicated by the R^2 values, 0.381, 0.411, and 0.352, indicating that the model explained a meaningful but not strong proportion of variance in consumer engagement.

The f^2 values ranged from 0.009 to 0.152, suggesting small to medium effects. Argument quality had small effects on contribution and creation engagement, suggesting that informational cues are relevant but not the dominant driver of more active engagement behaviors. In contrast, perceived emotional appeal showed stronger effects, particularly on contribution and creation engagement, indicating that sensory, affective, and emotionally engaging content may have greater practical importance for stimulating active consumer responses in food influencer short-form videos. In addition, the Q^2 values ranged from 0.331 to 0.390, all exceeding zero, confirming the predictive relevance of the model. Overall, the proposed model demonstrates acceptable explanatory and predictive relevance in explaining consumer engagement behavior in food influencer short-form video contexts. The results of the structural model assessment are presented in Figure 2.

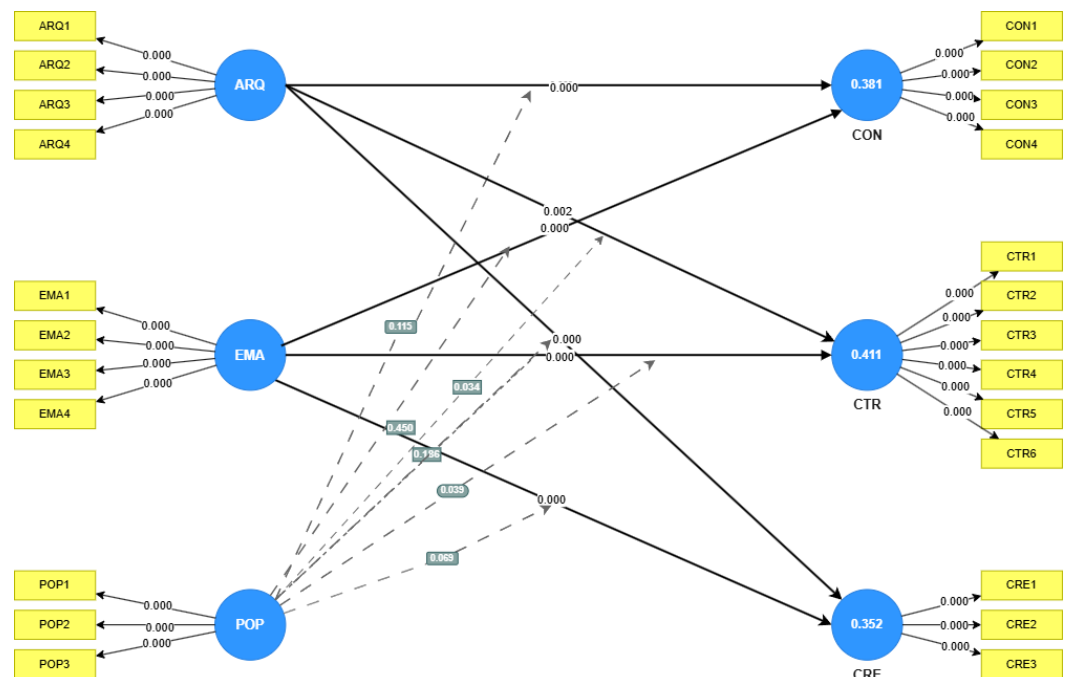


Figure 2. Structural model. Note: one-tailed test with a significance level of 0.05 and 10,000 subsamples.

Table 6. Explanatory and predictive power of the structural model.

Construct	Q^2	R^2
CON	0.350	0.381
CTR	0.390	0.411
CRE	0.331	0.352

Note: Q^2 values greater than zero indicate predictive relevance, whereas R^2 values represent the explanatory power of the structural model.

6. Discussion

6.1. Direct Effects of Elaboration Routes on Consumer Engagement

This study extends the elaboration likelihood model (ELM) to the context of short videos posted by food influencers, the results show that persuasive route from both the central and peripheral paths can promote consumer engagement. Specifically, the quality of the arguments and the perceived emotional appeal significantly enhanced all three dimensions of consumer engagement, indicating that in this context, participation is not a simple reaction, but a multi-layered process from passive observation to interaction and creative engagement. This finding is broadly consistent with ELM-based social media research showing that persuasive effects may vary across engagement processes and under contextual conditions, such as perceived risk [30]. The findings of this study confirm that persuasive cues influence different levels of consumer engagement in the context of food influencer short-form videos.

Argument quality had positive effects on all three engagement dimensions, which indicates that quality, credible and useful food-related content will continue to be highly relevant in food influencer short-form videos. The findings are also consistent with more recent studies examining how quality content from food influencers can lead to greater levels of consumer involvement and collaboration for brand co-creation [49]. The high quality of arguments may provide consumers with higher certainty about the value proposition, perceived usefulness of products or services, and increased engagement with the content as well. Therefore, even though short-form video platforms are typically visually oriented and focused on entertainment, they remain an appropriate environment for applying central route processing principles to influence consumer engagement behavior.

Perceived emotional appeal was shown to be a significantly stronger motivator of high-level engagement behaviors, such as contribution/creation engagement. This interpretation should be considered in light of the sample characteristics, as nearly 95% of respondents reported using short-form video applications daily or almost daily. Highly active users may be more accustomed to affective, sensory, and high-arousal content, which prior research suggests can stimulate positive social media responses and content sharing [38,39]. Highly active users may be more familiar with platform norms, algorithmic content flows, visible engagement metrics, and the sensory–affective style of short-form video content. Prior research suggests that TikTok use can generate flow-related states such as enjoyment, concentration, and time distortion [90]. Emotionally arousing online content is also more likely to be shared [39], and entertainment-related features of short-form videos can positively influence engagement behaviors such as likes and comments [91]. Therefore, the active-user profile of the sample may partly explain why perceived emotional appeal showed relatively strong effects on contribution and creation engagement. However, these relationships should be generalized cautiously to more casual short-form video consumer, who may be less familiar with platform norms, affective content styles, and engagement practices.

6.2. Moderating Effect of Perceived Post Popularity on Consumer Engagement

Rather than exerting a uniform moderating effect across all engagement dimensions, perceived post popularity showed only a limited and selective role in contribution engagement. Given that only two of the six moderation hypotheses were marginally supported at ($p < 0.10$), and none were supported at ($p < 0.05$), the moderating role of perceived post popularity should be interpreted cautiously. Specifically, perceived post popularity marginally weakened the relationship between argument quality and contribution engagement, while marginally strengthening the relationship between perceived emotional appeal and contribution engagement. These findings suggest that visible popularity cues may condition how viewers respond to different persuasive cues when deciding whether to like, comment, or share food influencer short-form videos.

One possible interpretation is that when perceived post popularity is salient, viewers may place slightly less emphasis on informational evaluation, thereby weakening the effect of argument quality on contribution engagement. This interpretation aligns with evidence that heuristic cues shape the depth of systematic information processing when message content remains ambiguous [59]. In high cognitive-load social media environments, users may depend more on visible social cues such as likes, comments, and shares rather than thoroughly evaluating their content [60]. Conversely, the positive moderation of the post popularity on the perceived emotional appeal and contribution relationship indicates that these visible social cues amplify affective responses, thereby encouraging reliance on the peripheral processing route [65].

However, these explanations should be interpreted cautiously. Although the moderation effects were statistically tested, the psychological processes behind them—such as reduced informational evaluation or reinforced affective response—were not directly measured in this study. Therefore, these interpretations are suggestive rather than conclusive. This pattern in the way to supports the view that platform-generated social cues act as contextual conditions that shape engagement with brand-related content, but that their effects vary across message characteristics and levels of COBRA engagement [69]. It is also consistent with the findings of Ampornklinkaew, consumer engagement in food influencer short-form video is influenced not only by persuasive cues but also by platform-generated conditions [26].

Meanwhile, China's short-form video and social commerce ecosystem may shape the ELM-COBRA relationships examined in this study. Platforms such as Douyin and Xiaohongshu are characterized by algorithmic recommendation, influencer-viewer interaction, visible engagement metrics, and increasingly integrated commerce or life-service functions [70,71,74]. Algorithmic recommendation may intensify users' exposure to food influencer content and make informational and affective cues more salient, while integrated commerce and life-service functions may reduce the distance between content evaluation and consumption-related action [70,71]. Visible likes, comments, shares, and positive responses may also strengthen perceived post popularity as a platform-based social-proof cue [10,24]. Therefore, the observed effects of argument quality, perceived emotional appeal, and perceived post popularity on COBRA-based engagement should be understood as context-dependent and may differ in platform environments where recommendation systems, influencer interaction, and commerce functions are less integrated.

Overall, the study extends ELM to an environment with the type of food influencer short-form video content, which is about how both central and peripheral cues are used for engagement but act differentially based on level of engagement. The findings extend Sarkis et al. by moving beyond an overall engagement construct and distinguishing consumption, contribution, and creation behaviors [1]. While argument quality has been shown to be a strong predictor of all three types of engagement (consumption, contribution and creation)

within this study, perceived emotional appeal has been found to play a limited and selective boundary role within the ELM–COBRA framework. Although prior influencer advertising research suggests that social proof can enhance consumer engagement, evidence also indicates that engagement metrics may bias user judgment and that high-engagement environments can generate negative consumer outcomes [15,92,93]. This interpretation is also consistent with de Vries et al. (2012), who showed that different brand-post characteristics influence likes and comments in distinct ways [54]. Accordingly, the effect of perceived post popularity may depend on both the type of persuasive cue and the specific form of engagement behavior.

7. Implications

7.1. Theoretical Implications

This study makes three theoretical contributions. First, this study applies an ELM-informed cue-processing perspective to explain how persuasive cues are associated with behavioral engagement in a fast-paced and visually rich food influencer environment. By examining argument quality, perceived emotional appeal, and perceived post popularity together, the study responds to the need for more persuasion-oriented research on rational, emotional, and popularity-related cues in digital food influencer contexts. In doing so, it addresses the relative scarcity of persuasion-oriented research in food influencer contexts, particularly regarding the roles of rational, emotional, and popularity-related cues [27].

Second, this study contributes by integrating ELM with the COBRA framework. This integration allows consumer engagement to be examined as a multidimensional behavioral outcome rather than as a single aggregate response. The findings show that argument quality has positive but relatively modest effects across consumption, contribution, and creation, whereas perceived emotional appeal is more influential, particularly for contribution and creation engagement. This pattern suggests that persuasive routes do not operate uniformly across engagement behaviors and supports the value of distinguishing among different levels of online brand-related activity, including consumption, contribution, and creation [44,69].

Third, this study contributes to social proof and influencer marketing research by showing that perceived post popularity functions as a selective boundary condition rather than as a universal amplifier. Prior research suggests that visible social cues, such as likes, comments, and shares, can shape brand-perceived post popularity and online engagement [54], while recent influencer advertising research further shows that social proof can enhance consumer engagement with sponsored influencer content [15]. However, this study expands upon these ideas by demonstrating that the moderating effect of perceived post popularity is both modest and specific to behavior, which indicates that the endorsement generated by the platform will enhance some but not all persuasive influence equally. The study's findings are also supported by the literature suggesting that visible metrics of engagement may lead users to make biased judgments as well as that environments characterized by high levels of engagement can have negative consequences for consumers [92,93]. Additionally, the study incorporates the growing body of work focused on short-form video environment, thus responding to calls from scholars for more integrated, industry-specific, and behavior-focused influencer research [12,16,17].

Meanwhile, the theoretical contribution of this study should be understood within the boundary of an ELM-informed cue-processing perspective. Since attitude was not directly measured, the study does not provide a complete test of the original ELM attitude-change process. Instead, it contributes by linking central-route-related and peripheral-route-related persuasive cues to COBRA-based behavioral engagement outcomes. In this framework, ELM explains how consumers respond to argument quality and perceived emotional appeal, while COBRA classifies the resulting engagement behaviors into consumption, contribution, and creation. This integration helps explain why persuasive cues may not influence all forms of engagement in the same way.

7.2. Practical Implication

Practically, the results of this study indicate that food influencers, food brands, and short-form video content managers should tailor their communication strategies based on the desired form of engagement. If the goal is to encourage basic consumption engagement, such as viewing or information seeking, improving argument quality remains important. Influencers should provide clear food information, ingredient details, cooking procedures, product quality evaluations, and practical consumption guidance. However, if the goal is to stimulate more active engagement, such as liking, commenting, sharing, or creating related content, perceived emotional appeal appears more practically influential. Therefore, food influencers should use sensory presentation, emotional storytelling, humor, personal experience, and visually appealing food scenes to encourage higher-effort engagement behaviors.

Additionally, the results of this research indicate that merely relying upon popularity of posts does not guarantee that a message will effectively influence consumers' engagement. While visible measures of engagement (such as "likes", "comments" and "shares") may be used by marketers as social signals indicating how well a message has been received; these measures do not necessarily represent a complete picture of message effectiveness. Specifically, there are times when engagement metrics may reflect desirable outcomes for the marketer and other times when they may signal undesirable outcomes. Ultimately, since consumer engagement represents value in addition to providing potential pathways to additional objectives (e.g., loyalty, purchase intention, repurchase intentions), it is recommended that marketers utilize engagement metrics in conjunction with message characteristics and objectives associated with the marketing campaign and communications strategy.

8. Limitations and Future Research

A few limitations have to be noted. To begin with, the findings should be interpreted within the specific context of food influencer short-form video content. The study used purposive and convenience sampling through WeChat and Douyin, and the sample mainly consisted of highly active users with relevant viewing and engagement experience. Therefore, the findings should not be viewed as statistically representative of all short-form video consumers, and the strong effects of perceived emotional appeal may partly reflect the highly active-user nature of the sample. In addition, because the data were collected in Shaanxi Province and most respondents mainly used Douyin, the findings may not be directly generalizable to platforms such as TikTok, Instagram Reels, or YouTube Shorts in Western contexts. Future research should test the model across different user groups, cultural contexts, technological and media environments [13,23].

Second, although the model showed reasonable explanatory capacity, the modest R^2 values suggest that other factors may also influence consumer engagement. The moderation results should also be interpreted cautiously because the observed interaction effects were

very small. Although the sample size was sufficient for estimating the main PLS-SEM model [75], detecting very small moderation effects may require larger samples. Future studies could use larger samples, experimental designs, or objective platform data to examine whether perceived post popularity functions as a meaningful boundary condition. Additional factors, such as user demographics, cultural background, situational usage context, involvement, social media usage patterns, and influencer characteristics, could also be included.

Third, this study adopts an ELM-informed cue-processing perspective and focuses on COBRA-based behavioral engagement outcomes rather than attitude change. Therefore, the findings should not be interpreted as a complete test of the original ELM attitude-change process. Future research could include attitude as a mediating variable between persuasive cues and engagement behaviors to examine whether argument quality and perceived emotional appeal influence engagement directly or indirectly through attitude formation.

Fourth, although attitude toward the color blue was used as a marker variable, its cultural applicability in Chinese consumer samples requires further validation. Future studies could use multiple common method bias assessment methods or culturally validated marker variables [83,85].

Finally, the measurement of consumer engagement should be further developed for short-form video and emerging social media contexts. Although this study used the COBRA dimensions of consumption, contribution, and creation, platform affordances now involve more diverse behaviors, such as saving, replaying, sharing to private groups, mentioning others, joining challenges, remixing, duet/stitch videos, and AI-assisted content creation. Future research could develop more platform-sensitive instruments that distinguish engagement not only by COBRA level, but also by communication form.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data collected from the questionnaire cannot be shared for ethical, privacy, or security concerns. Data will be made available from the corresponding author (liurulan1206@gmail.com) upon reasonable request.

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Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A. List of Measurement Items

Item No.	Item
Argument Quality [78]	
ARQ1	The food influencer short-form video provided current information.
ARQ2	The food influencer short-form video provided complete and comprehensive information.
ARQ3	The food influencer short-form video provided accurate information for my needs.
ARQ4	The food influencer short-form video provided easily understandable information.
Perceived Emotional Appeal [79]	
EMA1	After seeing food influencer short-form video content, I had intense feelings.
EMA2	I found that food influencer short-form video content made me easily emotionally engaged.
EMA3	The emotional aspect of food influencer short-form video content led me to appreciate the video.
EMA4	There was a strong emotional tie between me and the food influencer short-form video.
Consumer Engagement [44,81]	
Consumption	
CON1	I watch food influencer short-form videos.
CON2	I visit the main page of food influencer short-form video accounts.
CON3	I follow food influencer short-form video accounts.
CON4	I read other users' comments on food influencer short-form video platforms.
Contribution	
CTR1	I save food influencer short-form videos to my favorites.
CTR2	I comment on food influencer short-form videos.
CTR3	I comment on other users' comments on food influencer short-form video platforms.
CTR4	I join specific groups related to food influencer short-form videos.
CTR5	I "Like" food influencer short-form videos.
CTR6	I share food influencer short-form videos.
Creation	
CRE1	I create hashtags, such as "#", related to food influencers on short-form video platforms.
CRE2	I post food influencer-related pictures or graphics on short-form video platforms.
CRE3	I post food influencer videos on short-form video platforms.
Perceived Post Popularity [10,80]	
POP1	I think food influencer short-form video content with more people pressing like, sharing, and responding positively is trustworthy.
POP2	I think food influencer short-form video content with more people pressing like, sharing, and responding positively is reliable.
POP3	I think food influencer short-form video content with more people pressing like, sharing, and responding positively is believable.

Item No.	Item
Attitude Toward the Color Blue [85]	
ATCB1	Blue is a beautiful color.
ATCB2	Blue is a lovely color.
ATCB3	Blue is a pleasant color.
ATCB4	The color blue is wonderful.
ATCB5	Blue is a nice color.
ATCB6	I think blue is a pretty color.
ATCB7	I like the color blue.

Appendix B. R^2 Values of the Baseline and Marker Adjusted Models

Table A1. R^2 values of the baseline and marker adjusted models.

Endogenous Construct	R^2 Value	
	Baseline Model	Adjusted Model
CON	0.381	0.387
CTR	0.411	0.418
CRE	0.352	0.353

Appendix C. Path Coefficient and Significance of the Baseline and Method Factor Model

Table A2. Path coefficient and significance of the baseline and method factor model.

Relationship	Baseline Model			Marker Adjusted Model		
	β	p -Value	Remarks	β	p -Value	Remarks
ARQ $\rightarrow$ CON	0.330	<0.001	Support	0.309	<0.001	Support
ARQ $\rightarrow$ CTR	0.192	0.002	Support	0.172	0.005	Support
ARQ $\rightarrow$ CRE	0.253	<0.001	Support	0.247	<0.001	Support
EMA $\rightarrow$ CON	0.269	<0.001	Support	0.265	0.000	Support
EMA $\rightarrow$ CTR	0.420	<0.001	Support	0.415	<0.001	Support
EMA $\rightarrow$ CRE	0.453	<0.001	Support	0.452	<0.001	Support
POP $\times$ ARQ $\rightarrow$ CON	−0.060	0.115	Not Support	−0.071	0.081	Not Support
POP $\times$ ARQ $\rightarrow$ CRE	−0.046	0.186	Not Support	−0.049	0.171	Not Support
POP $\times$ ARQ $\rightarrow$ CTR	−0.090	0.034	Support	−0.101	0.021	Support
POP $\times$ EMA $\rightarrow$ CON	0.008	0.450	Not Support	0.013	0.414	Not Support
POP $\times$ EMA $\rightarrow$ CRE	0.082	0.069	Not Support	0.084	0.065	Not Support
POP $\times$ EMA $\rightarrow$ CTR	0.095	0.039	Support	0.100	0.031	Support

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