

Original Article

From influencer congruence to functional food purchase intention: mediating attitude and moderating health consciousness

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ABSTRACT

Functional foods are among the fastest-growing segments of the global food and pharmaceutical industry, and influencer marketing increasingly shapes consumers' purchase decisions in this category. Yet the congruence mechanism linking the influencer, the product, and the consumer has not been tested in the functional food context within an emerging market. This study develops and tests an integrated model of three congruence types: influencer-product congruence, consumer-influencer congruence, and consumer-product congruence. In this model, attitude serves as both a direct antecedent and a mediator of purchase intention, and health consciousness acts as a moderator. Survey data from 385 Vietnamese social media users who follow health influencers were analyzed using partial least squares structural equation modeling (PLS-SEM). All seven hypotheses were supported. Consumer-product congruence was driven by both source congruences ($\beta = 0.302$ and $\beta = 0.241$); attitude was the strongest antecedent of purchase intention ($\beta = 0.381$) and partially mediated the effect of consumer-product congruence on purchase intention (indirect effect $\beta = 0.127$; variance accounted for = 30.8%); and health consciousness positively moderated the formation of consumer-product congruence from influencer-product congruence ($\beta = 0.107$). The model explained 29.8% of the variance in purchase intention. The findings indicate that the fit among the influencer, the product, and consumers' health identity, rather than influencer popularity alone, underpins marketing effectiveness in the functional food domain, offering practical implications for firms and health professionals.

Keywords: Functional foods, Influencer marketing, Congruence, Purchase intention, Health consciousness

Introduction

Functional foods are products at the intersection of nutrition and pharmacology that deliver health benefits beyond basic nutrition through bioactive compounds such as probiotics, omega-3 fatty

acids, vitamins, and minerals. They have become one of the fastest-growing segments of the global food and pharmaceutical industry [1-3]. Rising health awareness, the shift toward preventive care, and population aging jointly drive demand, particularly after the COVID-19 pandemic [2, 4, 5]. In Vietnam, the functional food market has surpassed one billion USD and continues to grow at double-digit annual rates. Where the regulatory framework remains incomplete, and self-medication with supplements is common, consumer choices are increasingly shaped by social media communication rather than by professional advice [4, 6].

In this context, influencer marketing has emerged as a highly influential communication channel for health-related product categories [7, 8]. Influencers, individuals who build engaged

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follower communities through specialized content, differ fundamentally from traditional celebrities in that their credibility stems from their social media presence itself. In the functional food category, health influencers such as fitness trainers, nutritionists, and pharmacist-bloggers act as opinion leaders who shape attitudes and purchase decisions. Using PLS-SEM, Chou *et al.* [9, 10] showed that both pharmacist professionalism and celebrity attractiveness affect dietary supplement purchase intention through brand trust, underscoring the central role of influencer communication in nutraceutical consumption.

The effectiveness of influencer marketing is nonetheless uneven; it depends on the fit, or congruence, between the influencer and the promoted product [11, 12]. Calvo-Porrall *et al.* [13] found that endorser-product congruence is the principal route through which celebrity endorsement affects food purchase intention, alongside endorser credibility, and the meta-analysis by Ao *et al.* [14, 15] confirmed that influencer-product congruence correlates moderately to highly with purchase intention. Recent food-context evidence reinforces this mechanism: source effects translate into purchase behaviour only after being filtered through congruity-based evaluation [16, 17], and both influencer-product and influencer-consumer congruence jointly drive purchase intention for health-related foods [18, 19]. In the nutraceutical domain, where perceived health risk is high, incongruent endorsement is not only less effective but may also erode consumer trust.

Two foundational studies frame the present research. Belanche *et al.* [11, 20] proposed a three-way congruence model, demonstrating that influencer-product congruence (IPC) activates consumer-product congruence (CPC), which in turn generates favorable attitudes and purchase intention. Koay and Lim [21, 22] extended the model to online impulse buying with wishful identification as a moderator, showing that CPC is the main direct driver, whereas consumer-influencer congruence (CIC) operates only when amplified by aspirational motivation. In Vietnam, recent evidence on influencer marketing has focused on source credibility in the cosmetics category [23, 24] and has not addressed the congruence mechanism for health products. Three gaps, therefore, remain. First, no study has applied the three-way congruence framework to functional foods, a category in which the product's health attributes are central to evaluation. Second, although both foundational studies imply that attitude mediates the link between CPC and behavioral intention, neither has explicitly tested this path using PLS-SEM. Third, health consciousness, a key moderator specific to health products, has not been integrated into the congruence framework.

To address these gaps, the study pursues four objectives: (i) to test the effects of IPC and CIC on CPC in the functional food context; (ii) to determine the role of CPC in shaping attitude and purchase intention; (iii) to test the dual role of attitude as both a direct antecedent of purchase intention and a mediator of the CPC-purchase intention relationship; and (iv) to test the

moderating role of health consciousness in the IPC-CPC relationship.

Literature review and hypothesis development

Functional foods occupy a distinctive position between food and medicine, encompassing fortified foods, probiotics, medical nutrition, and dietary supplements [1, 2, 25]. Unlike hedonic product categories in which aesthetics predominates, the decision to purchase functional foods combines a utilitarian evaluation tied to health benefits with an affective evaluation tied to lifestyle identity [4, 13, 26]. In the social media environment, health influencers have become a primary source of information, heightening the importance of the congruence mechanism among the influencer, the product, and the consumer.

The model draws on three complementary theories. Belanche *et al.* [11, 27] grounded the congruence mechanism in balance theory and cognitive dissonance theory, whereas Koay and Lim [21, 28] applied self-congruity theory to the social media influencer setting. According to self-congruity theory, Sirgy [29, 30] argued that consumers are attracted to products and endorsers whose image matches their actual or ideal self-concept; the motive for self-consistency leads them to prefer choices that reinforce their identity. When a product's image matches the self (CPC) or a consumer's identity matches the influencer's persona (CIC), more favorable evaluations and higher purchase intention follow, particularly for functional foods, where consumers use health products to express a health-related identity.

Heider's [31, 32] balance theory predicts that people seek consistency in triadic relationships: if a consumer (A) holds a positive relationship with an influencer (B), and B is linked to a product (C), then A tends to evaluate C positively to achieve balance, which explains the propagation of congruence from IPC to CPC. Festinger's [33] cognitive dissonance theory adds a motivational basis: when an admired influencer (high CIC) endorses a product congruent with them (high IPC), the consumer is under pressure to form a favorable evaluation to avoid dissonance. The three theories converge on a single prediction: three-way congruence drives attitude and purchase intention through a psychological consistency-seeking mechanism [11, 29].

Integrating these theories, the research model (**Figure 1**) proposes that IPC and CIC affect CPC; that CPC shapes attitude (ATT) and purchase intention (PI); that attitude affects purchase intention and mediates the CPC-PI relationship; and that health consciousness (HC) moderates the IPC-CPC relationship. Seven hypotheses are developed below along three lines: the formation of consumer-product congruence, the translation of congruence into attitude and purchase intention, and the boundary condition imposed by health consciousness.

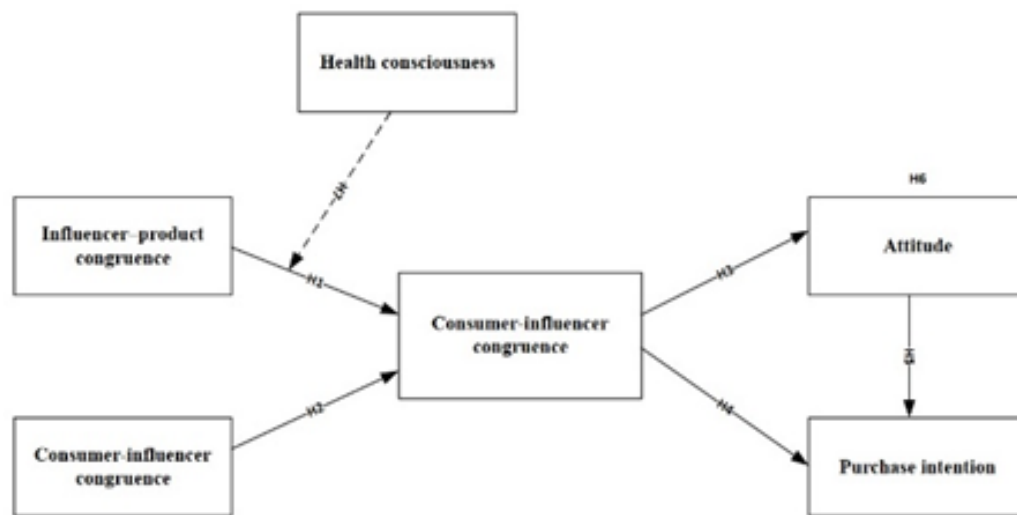


Figure 1. Proposed research model.

Drawing on balance theory [31, 34], when a health influencer's image closely matches the attributes of a functional food (high IPC), followers who are engaged with the influencer come to perceive the product as congruent with themselves, because the influencer serves as an identity bridge between the consumer and the product. Belanche *et al.* [11] confirmed empirically that, when consumer-influencer congruence is held high, high (low) IPC leads to high (low) CPC. Likewise, under the self-consistency motive of self-congruity theory [29], when consumers share values and a lifestyle with an influencer (high CIC), they generalize this fit to the endorsed product, increasing CPC. Liang *et al.* [35] similarly showed that both celebrity-product and celebrity-consumer congruence enhance consumers' confidence in and motivation toward the endorsed product, thereby strengthening purchase intention.

H1. Influencer-product congruence (IPC) positively affects consumer-product congruence (CPC).

H2. Consumer-influencer congruence (CIC) positively affects CPC.

Self-congruity theory [29] predicts that when a product's image matches the self, consumers develop more favorable evaluations. For functional foods, CPC implies that the product's health positioning aligns with the consumer's health identity, generating positive affect. Lee *et al.* [36, 37] showed that product–endorser congruence affects attitude through perceived expertise and credibility, and Belanche *et al.* [11, 38] confirmed that CPC positively affects attitude toward the endorsed product.

H3. CPC positively affects attitude toward the functional food product (ATT).

Beyond its indirect effect through attitude, CPC also directly drives purchase intention. According to self-congruity theory [29, 39], consumers purchase identity-congruent products as an act of self-affirmation, independent of the attitude-evaluation process. Koay and Lim [21, 40] confirmed a direct path from CPC to impulse purchase intention, while Belanche *et al.* [11, 41] found partial mediation, implying the coexistence of a direct path.

H4. CPC positively and directly affects purchase intention (PI).

The theory of planned behavior [42, 43] establishes attitude as the proximal determinant of behavioral intention: when an individual forms an overall favorable evaluation of an object, the tendency to act in line with that evaluation increases. This relationship is especially salient in functional food consumption, where purchase decisions are typically deliberate and tied to perceived health benefits. Several recent empirical studies confirm that attitude is the strongest antecedent of purchase intention in this category: Jia and Liu [44] reported attitude as the dominant predictor of functional food consumption intention in China, with a path coefficient far exceeding the remaining antecedents; Ghaith [45] and Pan *et al.* [46] showed that favorable attitudes translate directly into health food purchase intention; and Al Kurdi *et al.* [47] confirmed that attitude toward functional diet products transmits strongly to purchase intention.

H5. Attitude (ATT) positively affects PI.

Hypotheses H3 (CPC→ATT) and H5 (ATT→PI) together imply a mediating mechanism: CPC is first translated into an affective evaluation (attitude) and only then leads to purchase intention, following the cognition-affect-conation sequence of the theory of planned behavior [43]. Evidence in the health food domain supports this path [45, 46]. However, because H4 posits a direct CPC→PI path reflecting an identity-affirmation motive [48], the study expects partial rather than full mediation, consistent with Belanche *et al.* [11].

H6. ATT mediates the relationship between CPC and PI.

Health consciousness (the degree to which an individual is aware of, concerned with, and integrates health considerations into lifestyle decisions [49]) is a key moderator in health product consumption. Consumers high in health consciousness allocate more cognitive resources to health information and are more sensitive to cues about a product's health fit [50]. Health consciousness can act both as a direct driver of healthy food purchase intention and as a boundary condition. Parashar *et al.* [50], for instance, positioned it as a core driver of organic food purchase intention, with attitude as a moderator. This

moderating role has been demonstrated empirically: Devi *et al.* [51] confirmed that the level of health consciousness strengthens the relationship between perception and purchase intention; Kumar *et al.* [52] showed that it moderates the relationship between health influencer characteristics and functional beverage purchase intention; and Foroughi *et al.* [53] found that influencer-product congruence operates as a boundary condition. Accordingly, when consumers are high in health consciousness, they attend more closely to the fit between the influencer's health positioning and the functional food's attributes, thereby strengthening the translation of IPC into CPC.

H7. Health consciousness (HC) moderates the IPC-CPC relationship; the positive effect of IPC on CPC is stronger when HC is high.

Materials and Methods

The study employed a cross-sectional quantitative survey design. The target population comprised Vietnamese social media users aged 18 or older who followed at least one health or nutrition influencer and had been exposed to functional food promotional content from that influencer. Two screening questions at the start of the questionnaire confirmed these conditions; only respondents meeting both criteria proceeded to the main assessment. Purposive sampling was used, with the online questionnaire distributed through health-related social media groups and channels. After invalid responses were removed, 385 responses were retained for analysis. This sample size exceeded the minimum required by the inverse square root method of Kock and Hadaya [54] and the rule of ten observations per path [55]; because the interaction term in H7 is a small effect, this effect was interpreted cautiously, and replication is recommended.

The questionnaire comprised 24 observed items measuring six constructs on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree), contextualized for functional foods through an independent forward-backward translation by bilingual experts, expert-panel review, and a pilot survey ($n = 30$). The three congruence scales (IPC and CPC with four items each, CIC with three) were adapted directly from Belanche *et al.* [11], in which IPC and CPC derive from the self-congruity scale of Xu and Pratt

[56], and were applied unchanged by Koay and Lim [21] in the same social media influencer context. Attitude was adapted from Silvera and Austad [57]; purchase intention from Belanche *et al.* [11] and Xu and Pratt [56]; and health consciousness was measured with five items drawn from Gould's [49] Health Consciousness Scale. Because the original congruence scale was validated on fashion products, the wording for product style was contextualized to style and lifestyle while preserving the product-self fit content. The item codes, loadings, reliability, convergent validity, and source of each scale are reported in **Table 2**.

The model was tested using PLS-SEM in SmartPLS 4 [58]. This method was appropriate because the model contains a mediating relationship and a moderating interaction, does not require normality assumptions, and is effective for both explanatory and predictive purposes [55]. Following the two-stage procedure, the measurement model was first assessed through internal consistency reliability (Cronbach's alpha and composite reliability ρ_c), convergent validity (AVE), and discriminant validity (the HTMT ratio and the Fornell–Larcker criterion) [55]. Common method variance was assessed using Kock's [59] full collinearity test; all inner-model VIF values were below 3.3, indicating that common method bias was not a serious concern. The structural model was evaluated through path coefficients, R^2 , effect size f^2 , and significance obtained from bootstrapping with 5,000 subsamples and bias-corrected confidence intervals. Mediation (H6) was tested through the specific indirect effect, and moderation (H7) through the two-stage interaction term.

Results and Discussion

Of the 385 valid participants, 63.1% were female, and 36.9% were male. The largest age group was 25–34 (46.0%), followed by 18–24 (26.8%), 35–44 (19.5%), and over 45 (7.8%). In terms of education, 67.5% held a university degree and 18.4% a postgraduate degree. The most-used platforms were TikTok (42.3%) and Instagram (34.5%), reflecting the prevalence of short-form video in health marketing in Vietnam. This profile is consistent with the functional food consumer described in the literature, namely younger to middle-aged and well-educated consumers [4] (**Table 1**).

Table 1. Demographic characteristics of the sample (N = 385).

Characteristic	Category	Frequency	%
Gender	Female	243	63.1
	Male	142	36.9
Age	18–24	103	26.8
	25–34	177	46.0
	35–44	75	19.5
	Over 45	30	7.8
Education	High school or below	54	14.0
	University	260	67.5
	Postgraduate	71	18.4

Main platform	TikTok	163	42.3
	Instagram	133	34.5
	Facebook	89	23.1

Table 2 reports on the measurement model. All outer loadings ranged from 0.748 to 0.858, exceeding the 0.708 threshold [55]. Cronbach's alpha (0.787–0.848) and composite reliability ρ_c

(0.863– 0.890) all exceeded 0.70, confirming internal consistency reliability, and AVE ranged from 0.611 to 0.700, all above 0.50, establishing convergent validity (**Table 2**).

Table 2. Measurement model: loadings, reliability, convergent validity, and scale sources.

Construct	Item	Loading	α	ρ_c	AVE	Source
Influencer-product congruence (IPC)	IPC1	0.836	0.823	0.882	0.652	Belanche <i>et al.</i> [11]; Koay & Lim [21]; Xu & Pratt [56]
	IPC2	0.831				
	IPC3	0.792				
	IPC4	0.769				
Consumer-influencer congruence (CIC)	CIC1	0.856	0.787	0.875	0.700	Belanche <i>et al.</i> [11]; Koay & Lim [21]
	CIC2	0.794				
	CIC3	0.858				
Consumer-product congruence (CPC)	CPC1	0.791	0.802	0.871	0.627	Belanche <i>et al.</i> [11]; Koay & Lim [21]; Xu & Pratt [56]
	CPC2	0.774				
	CPC3	0.777				
	CPC4	0.825				
Attitude (ATT)	ATT1	0.765	0.827	0.885	0.658	Silvera & Austad [57]
	ATT2	0.818				
	ATT3	0.836				
	ATT4	0.824				
Purchase intention (PI)	PI1	0.795	0.788	0.863	0.611	Belanche <i>et al.</i> [11]; Xu & Pratt [56]
	PI2	0.775				
	PI3	0.777				
	PI4	0.779				
Health consciousness (HC)	HC1	0.795	0.848	0.890	0.618	Gould [49]
	HC2	0.767				
	HC3	0.748				
	HC4	0.841				
	HC5	0.775				

Note: α = Cronbach's alpha; ρ_c = composite reliability; AVE = average variance extracted.

Discriminant validity was confirmed by the HTMT ratio (**Table 3**); the highest value was 0.587 (between PI and ATT), below

the 0.85 threshold [55]. Inner-model VIF values ranged from 1.00 to 1.12, ruling out multicollinearity.

Table 3. Discriminant validity: HTMT ratios.

	IPC	CIC	CPC	ATT	PI	HC
IPC						
CIC	0.257					
CPC	0.375	0.435				
ATT	0.161	0.168	0.399			
PI	0.201	0.253	0.514	0.587		
HC	0.312	0.156	0.177	0.086	0.084	

Note: All HTMT values were below 0.85, confirming discriminant validity.

Table 4 presents the results of testing the seven hypotheses with 5,000 bootstrap subsamples. All seven hypotheses were supported, with 95% confidence intervals excluding zero. The

model explained 29.8% of the variance in purchase intention, 19.8% in CPC, and 11.1% in attitude. The SRMR of 0.052 (below 0.08) indicated acceptable model fit (**Figure 2**).

Table 4. Structural model results and hypothesis tests.

H	Path	β	SD	t	p	95% CI	F ²	Result
H1	IPC $\rightarrow$ CPC	0.241	0.044	5.423	<0.001	[0.154, 0.326]	0.065	Supported
H2	CIC $\rightarrow$ CPC	0.302	0.046	6.593	<0.001	[0.209, 0.390]	0.108	Supported
H3	CPC $\rightarrow$ ATT	0.333	0.046	7.268	<0.001	[0.235, 0.414]	0.125	Supported
H4	CPC $\rightarrow$ PI	0.285	0.045	6.377	<0.001	[0.194, 0.370]	0.103	Supported
H5	ATT $\rightarrow$ PI	0.381	0.045	8.449	<0.001	[0.288, 0.463]	0.184	Supported
H6	CPC $\rightarrow$ ATT $\rightarrow$ PI	0.127	0.023	5.613	<0.001	[0.084, 0.173]	-	Supported (partial)
H7	IPC $\times$ HC $\rightarrow$ CPC	0.107	0.039	2.774	0.006	[0.032, 0.183]	0.015	Supported

Note: β = standardized path coefficient; SD = bootstrap standard deviation; CI = bias-corrected confidence interval; F² (0.02 small; 0.15 medium; 0.35 large). Total CPC $\rightarrow$ PI effect = 0.412 (t = 9.525; p < 0.001); VAF = 30.8%. R²: CPC = 0.198; ATT = 0.111; PI = 0.298. SRMR = 0.052; NFI = 0.832.

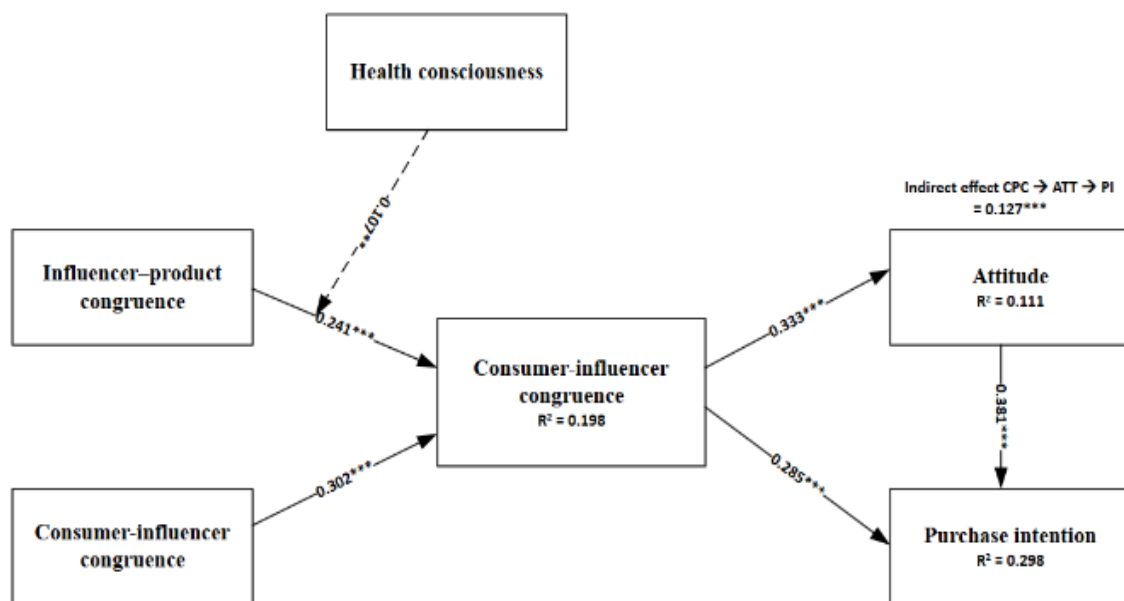


Figure 2. Structural model results with standardized path coefficients and explained variance (R²). ***p < 0.001; **p < 0.01.

A key finding is the dual role of CPC and attitude in the causal chain. Across the model, attitude had the largest path coefficient to purchase intention (H5; β = 0.381; t = 8.449; f^2 = 0.184, a medium effect), exceeding the direct CPC $\rightarrow$ PI effect (β = 0.285). This result aligns closely with Belanche *et al.* [11], in which attitude was also the strongest antecedent of purchase intention (β = 0.799) within the same congruence framework, and confirms the theory of planned behavior's [13] position that attitude is the proximal determinant of intention. This role is not invariant across contexts, however: Escobar-Farfán *et al.* [48] found that the weight of attitude can diminish when it competes with strong antecedents such as perceived behavioral control and self-identity, indicating that attitude's weight depends on the product category and the accompanying set of antecedents.

On the congruence-formation side, both IPC (H1; β = 0.241; f^2 = 0.065) and CIC (H2; β = 0.302; f^2 = 0.108) significantly increased CPC, supporting the logic of balance theory [31]. CIC had the higher coefficient, but the confidence intervals of the two estimates overlapped (CIC [0.209, 0.390]; IPC [0.154, 0.326]), so the two are drivers of comparable magnitude, with consumer-influencer identity attachment somewhat more prominent. This finding helps reconcile an unresolved point in the literature. In

the experiment of Belanche *et al.* [11], the IPC $\rightarrow$ CPC effect emerged only when CIC was held high (that is, when the triad was in balance), whereas Koay and Lim [21] found that neither CIC nor IPC directly drove impulse purchase; only CPC did. The present model reconciles the two: CIC and IPC do not drive intention directly but operate indirectly through the formation of CPC, converting the perception of fit between the consumer and the influencer and between the influencer and the product into the perception of fit between the consumer and the product. This is consistent with Koay and Lim's [21] emphasis on the consumer-product axis and with the Vietnamese context, in which source credibility strongly shapes purchase behavior [23]. On the evaluation side, CPC shaped attitude (H3; β = 0.333; f^2 = 0.125) and directly drove purchase intention (H4; β = 0.285; f^2 = 0.103). The CPC $\rightarrow$ ATT coefficient here was substantially lower than the γ = 0.873 reported by Belanche *et al.* [11]; the difference reflects the nature of the methods, as Belanche manipulated congruence in an experimental design with strong contrasting stimuli, whereas the present study measured naturally occurring perceptions across a broad range of functional foods, where many factors beyond congruence are at work. The fact that attitude (H5) had a stronger effect than the direct path

confirms the cognition-affect-conation sequence: congruence is first converted into an affective evaluation and only then into purchase intention [36, 43].

The test of H6 confirmed that attitude partially mediates the CPC-purchase intention relationship. The specific indirect effect was significant ($\beta = 0.127$; $t = 5.613$; CI [0.084, 0.173]) alongside a significant, same-signed direct effect (H4), indicating complementary partial mediation, with a total CPC-purchase intention effect of 0.412 and a variance accounted for (VAF) of 30.8%. This precisely replicates Belanche *et al.* [11], who used a chi-square difference test to show that attitude only partially, not fully, mediates the CPC-purchase intention relationship. The coexistence of the direct path implies that, in the nutraceutical context, part of the purchase motivation stems from a motive to affirm a health-related and preventive identity, beyond the purely affective evaluation route [29, 48].

The result of H7 showed that health consciousness positively moderates the IPC-CPC relationship ($\beta = 0.107$; $t = 2.774$; $p = 0.006$); that is, influencer-product fit translates into CPC more strongly among consumers high in health consciousness. This moderating role of health consciousness is consistent with Devi *et al.* [51], who reported that the level of health consciousness strengthens the perception-purchase intention relationship. The small interaction effect size ($f^2 = 0.015$) accords with Kumar *et al.* [52], who found that health consciousness moderates only some, not all, relationships between influencer characteristics and purchase intention, and with the observation of Müller-Pérez *et al.* [60] that health consciousness often plays a marginal role; this effect therefore warrants replication before generalization. Overall, the model explained 29.8% of the variance in purchase intention, a moderate level that is reasonable for a parsimonious congruence model centered on a single endorsement and not controlling for price, prior use experience, or nutritional knowledge. This R^2 is comparable to that of health food behavior studies using PLS-SEM within an extended theory of planned behavior framework [60], and the unexplained variance points to the value of adding further antecedents to the model.

This study makes three theoretical contributions. First, it extends the three-way congruence framework of Belanche *et al.* [11] from an experimental design on fashion products to a nutraceutical category in an emerging market, demonstrating that the core causal structure (congruence translating into attitude, then into intention, with partial mediation) is preserved across contexts and methods. Second, by positioning CPC as the central construct through which IPC and CIC exert their influence, the study reconciles the conflicting evidence on the direct roles of CIC and IPC between Belanche *et al.* [11] and Koay and Lim [21], clarifying that the two source congruences operate mainly through an indirect mechanism. Third, establishing health consciousness as a pure boundary condition that amplifies the IPC→CPC path without directly raising CPC adds nuance to theory on the role of health consciousness in health product consumption, shifting the emphasis from an antecedent role to a context-amplifying role [60].

For functional food firms, CPC is the focal construct that drives purchase intention, jointly formed by identity attachment to the influencer (CIC) and influencer-product fit (IPC). Influencer selection should therefore balance all three criteria: the influencer's content should align with the product's health claims (IPC); the follower community's profile and values should align with the target segment (CIC); and the product's positioning should align with the customer's health identity (CPC). Because attitude is the proximal determinant of purchase intention, communication should focus on creating positive product experiences rather than merely emphasizing influencer popularity. Because health consciousness amplifies the IPC→CPC path, brands should prioritize segments with high health consciousness and select influencers who share evidence-based health content. For pharmacists and health managers, influencer communication can be used responsibly to improve nutraceutical literacy, but it should be accompanied by professional advice to ensure safe use [9, 52].

Conclusion

This study developed and tested a PLS-SEM model of functional food purchase intention through influencer marketing, integrating the three-way congruence framework with attitude as both a direct antecedent and a mediator, and health consciousness as a moderator. Data from 385 Vietnamese social media users supported all seven hypotheses. The principal finding is the central role of CPC combined with attitude as the proximal and strongest antecedent of purchase intention: IPC and CIC drive CPC with comparable magnitude, with CIC slightly higher; CPC both shapes attitude and directly affects purchase intention; attitude is the strongest antecedent of purchase intention and partially mediates the CPC-purchase intention relationship; and health consciousness acts purely as a boundary condition, amplifying the effect of IPC on CPC. The key implication is that the fit among the influencer, the product, and consumers' health identity, not influencer popularity alone, is the foundation of marketing effectiveness in the nutraceutical domain.

The study has several limitations. The cross-sectional design limits causal inference over time; the sample, drawn from urban Vietnam, calls for caution in generalizing to other cultural and health-system contexts; the model explained a moderate share of the variance in purchase intention and did not control for price, nutritional knowledge, or prior use experience; and the moderating effect of health consciousness, although significant, was small. Future research should adopt longitudinal designs, broaden the geographic scope, add further antecedents and moderators, and measure actual purchase behavior through e-commerce data to confirm the model's predictive validity.

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Conflict of interest: None

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Ethics statement: The study was conducted in accordance with the principles of the Declaration of Helsinki. Participation was voluntary; all respondents provided written informed consent prior to the survey, and all data were collected anonymously. The study was approved by the Research Ethics Committee of the Industrial University of Ho Chi Minh City under Decision No. 296/QD-DHCN dated 24 February 2023.

References

- Puri V, Nagpal M, Singh I, Singh M, Dhingra GA, Huanbutta K, et al. A comprehensive review on nutraceuticals: therapy support and formulation challenges. *Nutrients*. 2022;14(21):4637. doi:10.3390/nu14214637
- Chopra AS, Lordan R, Horbańczuk OK, Atanasov AG, Chopra I, Horbańczuk JO, et al. The current use and evolving landscape of nutraceuticals. *Pharmacol Res*. 2022;175:106001. doi:10.1016/j.phrs.2021.106001
- Kunie K, Kawakami N, Shimazu A, Yonekura Y, Miyamoto Y. Examining the impact of managerial communication on the link between nurses' job performance and psychological empowerment. *Ann Organ Cult Leadersh Extern Engagem J*. 2025;6:1-7. doi:10.51847/SF5ZX3J4OT
- Topolska K, Florkiewicz A, Filipiak-Florkiewicz A. Functional food-consumer motivations and expectations. *Int J Environ Res Public Health*. 2021;18(10):5327. doi:10.3390/ijerph18105327
- Morgan AL, Foster DK, Collins IJ. Disparities in HER2-targeted therapy adoption and survival impact in metastatic HR-/HER2+ breast cancer: NCDB cohort study. *Asian J Curr Res Clin Cancer*. 2025;5(2):1-11. doi:10.51847/AZI4JURGIQ
- Wierzejska RE. Dietary supplements-for whom? The current state of knowledge about the health effects of selected supplement use. *Int J Environ Res Public Health*. 2021;18(17):8897. doi:10.3390/ijerph18178897
- Sardar S, Vijay TS. Social media influencers and purchase intention: a review and research agenda. *Int J Consum Stud*. 2025;49(3):e70046. doi:10.1111/ijcs.70046
- Hao C, Fang L, Lin Z. Autonomous AI agent for QSAR modeling with dataset curation, descriptor selection, and domain assessment. *Pharmacophore*. 2025;16(4):11-21. doi:10.51847/Bhyi6RjARa
- Chou S, Chen CW, Shen ZL. Examining the impact of pharmacist professionalism and celebrity endorsers on dietary supplement purchase intention: the moderating role of product knowledge. *Int J Pharm Healthc Mark*. 2024;18(4):603-20. doi:10.1108/IJPHM-08-2023-0076
- Guillen J, Pereira R. Institutional influence on gender entrepreneurship in Latin America. *Ann Organ Cult Leadersh Extern Engagem J*. 2024;5:28-38. doi:10.51847/RaQltcyzXu
- Belanche D, Casaló LV, Flavián M, Ibáñez-Sánchez S. Understanding influencer marketing: the role of congruence between influencers, products and consumers. *J Bus Res*. 2021;132:186-95. doi:10.1016/j.jbusres.2021.03.067
- Mishra N, Dadhich A, Vande AV, Saluja H, Shah S, Mishra M. A comparative assessment of topical 5-fluorouracil and modified carnoy's solution for the treatment of odontogenic keratocyst. *J Curr Res Oral Surg*. 2025;5(1):11-6. doi:10.51847/OrVjImrxW
- Calvo-Porrá C, Rivaroli S, Orosa-González J. The influence of celebrity endorsement on food consumption behavior. *Foods*. 2021;10(9):2224. doi:10.3390/foods10092224
- Ao L, Bansal R, Pruthi N, Khaskheli MB. Impact of social media influencers on customer engagement and purchase intention: a meta-analysis. *Sustainability*. 2023;15(3):2744. doi:10.3390/su15032744
- Di Fiore A, Stellini E, Savio G, Rosso S, Graiff L, Granata S, et al. A Review of Recent Literature on the Handling of Anterior Resin-Bonded Cantilever Restorations. *J Curr Res Oral Surg*. 2024;4(1):1-8. doi:10.51847/JcU1FD46Qw
- V I De Araujo S, Dhaigude AS, Kamath GB, Pai RR, Nayak S, Ganesh S. Influencer credibility and consumer behavior: the mediating role of self-brand congruity and the moderating role of involvement. *Cogent Bus Manag*. 2025;12(1):2541040. doi:10.1080/23311975.2025.2541040
- Kowalski TW, Reis LB, Andreis TF, Ashton-Prolla P, Rosset C. Rare Co-occurrence of Two Mutational Variants in NF1: Molecular Testing Reveals Diagnostic Surprises. *J Med Sci Interdiscip Res*. 2024;4(2):20-9. doi:10.51847/H2qQIZTYO7
- Nguyen DM, Nguyen HTH. Understanding the power of social media influencers in promoting organic food consumption. *J Trade Sci*. 2025;13(4):279-98. doi:10.1108/JTS-06-2025-0024
- Novak TJ, Dvorak PM. A Spatiotemporal Neural Network Framework for EEG-Based Emotion Recognition in Depression Assessment. *J Med Sci Interdiscip Res*. 2025;5(2):24-38. doi:10.51847/A2pBOYHJW1
- Huber MA, Bauer LS, Gruber FK, Müller EW. Outcomes of Everolimus Combined with Exemestane in HR-Positive Metastatic Breast Cancer after CDK4/6 Inhibitor Exposure. *Arch Int J Cancer Allied Sci*. 2025;5(2):44-50. doi:10.51847/sJNxERZXn
- Koay KY, Lim WM. Congruence effects in social media influencer marketing: the moderating role of wishful identification in online impulse buying intentions. *J Prod Brand Manag*. 2025;34(3):265-78. doi:10.1108/JPBM-09-2023-4709
- Novak H, Jelic P. Comparing Self-Learning Skill Stations and Instructor-Led Courses for Cardiopulmonary Resuscitation Skill Retention Among Hospital Nurses: A Randomized Controlled Trial. *J Integr Nurs Palliat Care*. 2025;6(2):185-91. doi:10.51847/MFRNxbMHX7

23. An GK, Ngo TTA, Tran TT, Nguyen PT. Investigating the influence of social media influencer credibility on beauty product purchase behaviors: a case study from Vietnam. *Innov Mark.* 2024;20(3):261-76. doi:10.21511/im.20(3).2024.21
24. Parveen M, Ghosh S. Taxonomic diversity, functional guilds, and spatial distribution of endophytic fungi in healthy spinach via amplicon sequencing. *World J Environ Biosci.* 2025;14(2):29-40. doi:10.51847/sYWKFR1HvM
25. Nagesh D, Lam Ip CYT, Li K, Wong HSL, Chai JYH. Navigating support networks: a Somali woman's experience of social alignment to overcome isolation during pregnancy and early motherhood. *Int J Soc Psychol Asp Healthc.* 2025;5:35-48. doi:10.51847/iJoPhqpXaV
26. Damaševičius R, Maskeliūnas R, Blažauskas T. Enhancing virtual medical history taking: effects of customized guidelines in two serious games for medical education. *Ann Pharm Educ Saf Public Health Advocacy.* 2025;5:39-49. doi:10.51847/kNshKQSf5t
27. Salem HM, Watanabe S, Chang AH. Ethical concerns in managing anorexia nervosa: a content analysis of ethics consultation records. *Asian J Ethics Health Med.* 2025;5:25-35. doi:10.51847/oHEI6FgL3V
28. Kajanova J, Badrov A. Medical students' perspectives on trust in medical AI: A quantitative comparative study. *Asian J Ethics Health Med.* 2024;4:44-57. doi:10.51847/36mpdZ9AZ8
29. Sirgy MJ. Using self-congruity and ideal congruity to predict purchase motivation. *J Bus Res.* 1985;13(3):195-206. doi:10.1016/0148-2963(85)90026-8
30. Kwatra D, Venugopal A, Anant S. Studying the efficacy of tolmetin radiosensitizing effect in radiotherapy treatment on human clonal cancer cells. *Bull Pioneer Res Med Clin Sci.* 2024;4(2):22-8. doi:10.51847/Uuhjk0fMC8
31. Heider, F. Attitudes and cognitive organization. *J Psychol.* 1946;21(1):107-12. doi:10.1080/00223980.1946.9917275
32. Altowijri A. Femoral neck fracture with contralateral hip dislocation in a pediatric patient: a case report. *World J Environ Biosci.* 2024;13(4):34-8. doi:10.51847/ayYys3AeII
33. Festinger L. A theory of cognitive dissonance. Evanston (IL): Row, Peterson; 1957.
34. Dobrzynski W, Szymonowicz M, Wigłusz RJ, Rybak Z, Zawadzka-Knefel A, Janecki M, et al. Nanotechnology in orthodontics: current applications and future perspectives. *Asian J Periodontics Orthod.* 2024;4:24-33. doi:10.51847/pRV7a8ayHa
35. Liang S-Z, Hsu M-H, Chou T-H. Effects of celebrity-product/consumer congruence on consumer confidence, desire, and motivation in purchase intention. *Sustainability.* 2022;14(14):8786. doi:10.3390/su14148786
36. Lee JS, Chang H, Zhang L. An integrated model of congruence and credibility in celebrity endorsement. *Int J Advert.* 2022;41(7):1358-81. doi:10.1080/02650487.2021.2020563
37. Nguyen TT, Dinh VT, Vu LH. An Integrated FAHP–TOPSIS approach for evaluating and prioritizing medical tourism service types in Vietnam. *J Organ Behav Res.* 2025;10(2):20-31. doi:10.51847/InWweTmy0d
38. Aksoy C, Akaydin A. The impact of strategic leadership on employee performance: a study of the aviation industry. *J Organ Behav Res.* 2024;9(2):42-53. doi:10.51847/3xix5orUCJ
39. Elango R, Govindaraju L. In vitro evaluation of kedo sdf gel effect on the micro-hardness of natural carious dentin. *Ann Dent Spec.* 2025;13(2):12-4. doi:10.51847/fQknFGnize
40. Jannath A, Sivapragasam S, Viswanathan K, Sundaram R. Intentional replantation with simultaneous periapical surgery- a case report with one year of follow-up. *Ann Dent Spec.* 2024;12(3):23-7. doi:10.51847/JIs54FRstW
41. Chandrasekhar K, Nastro RA, Narayana AV, Rao AR, Singh M, Chennaiah A. Microbial cell factory engineering for scalable production of bio-commodities: emphasis on robustness. *J Biochem Technol.* 2025;16(3):19-29. doi:10.51847/6z0mtOiyy
42. Benhmida S, Trabelsi H. Fatty acid composition in bone fluid from knee osteoarthritis patients. *J Biochem Technol.* 2024;15(2):23-6. doi:10.51847/UNhuTqup51
43. Ajzen I. The theory of planned behavior. *Organ Behav Hum Decis Process.* 1991;50(2):179-211. doi:10.1016/0749-5978(91)90020-T
44. Jia H, Liu S. Sociopsychological determinants of functional foods consumption in China: based on the theory of the planned behavior expansion model. *Front Nutr.* 2025;12:1624390. doi:10.3389/fnut.2025.1624390
45. Ghaith A. Exploring consumer intention for functional food products in Hungary: the role of health consciousness, nutritional knowledge and attitudes. *Appl Stud Agribus Commer.* 2024;18(2). doi:10.19041/APSTRACT/2024/2/1
46. Pan J, Wu K-S, Huang D-M, Sun S-W. Role of health-consciousness on purchase intention of health and wellness food: the serial mediating effect of attitude and desire. *Nutrients.* 2025;17(5):746. doi:10.3390/nu17050746
47. Al Kurdi B, Alshurideh M, Akour I, Tariq E, Alhamad A, Alzoubi HM. The effect of social media influencers' characteristics on consumer intention and attitude toward Keto product purchase intention. *Int J Data Netw Sci.* 2022;6(4):1135-46. doi:10.5267/j.ijdns.2022.7.006
48. Escobar-Farfán M, García-Salirrosas EE, Guerra-Velásquez M, Veas-González I, Gómez-Bayona L, Gallardo-Canales R. Psychological determinants of healthy food purchase intention: an integrative model based on health consciousness. *Nutrients.* 2025;17(7):1140. doi:10.3390/nu17071140
49. Gould SJ. Health consciousness and health behavior: the application of a new health consciousness scale. *Am J Prev Med.* 1990;6(4):228-37. doi:10.1016/S0749-3797(18)31009-2
50. Parashar S, Singh S, Sood G. Examining the role of health consciousness, environmental awareness and intention on

- purchase of organic food: a moderated model of attitude. *J Clean Prod.* 2023;386:135553. doi:10.1016/j.jclepro.2022.135553
51. Devi K, Singh G, Roy SK, Cúg J. Determinants of organic food purchase intention: the moderating role of health consciousness. *Br Food J.* 2023;125(11):4092-122. doi:10.1108/BFJ-03-2023-0220
 52. Kumar S, Kaur B, Goyal S. Role of social media health influencers on purchase intention of functional beverages: moderating impact of health consciousness. *Inf Media.* 2024;99:63-84. doi:10.15388/Im.2024.99.4
 53. Foroughi B, Iranmanesh M, Nilashi M, Ghobakhloo M, Asadi S, Khoshkam M. Determinants of followers' purchase intentions toward brands endorsed by social media influencers: findings from PLS and fsQCA. *J Consum Behav.* 2024;23(2):888-914. doi:10.1002/cb.2252
 54. Kock N, Hadaya P. Minimum sample size estimation in PLS-SEM: the inverse square root and gamma-exponential methods. *Inf Syst J.* 2018;28(1):227-61. doi:10.1111/isj.12131
 55. Hair JF, Risher JJ, Sarstedt M, Ringle CM. When to use and how to report the results of PLS-SEM. *Eur Bus Rev.* 2019;31(1):2-24. doi:10.1108/EBR-11-2018-0203
 56. Xu X, Pratt S. Social media influencers as endorsers to promote travel destinations: an application of self-congruence theory to the Chinese Generation Y. *J Travel Tour Mark.* 2018;35(7):958-72. doi:10.1080/10548408.2018.1468851
 57. Silvera DH, Austad B. Factors predicting the effectiveness of celebrity endorsement advertisements. *Eur J Mark.* 2004;38(11/12):1509-26. doi:10.1108/03090560410560218
 58. Sarstedt M, Ringle CM, Hair JF. Partial least squares structural equation modeling. In: Homburg C, Klarmann M, Vomberg A, editors. *Handbook of market research.* Cham: Springer; 2022. p. 587-632. doi:10.1007/978-3-319-57413-4_15
 59. Kock N. Common method bias in PLS-SEM: a full collinearity assessment approach. *Int J e-Collab.* 2015;11(4):1-10. doi:10.4018/ijec.2015100101
 60. Müller-Pérez J, Acevedo-Duque Á, García-Salirrosas EE, Escobar-Farfán M, Esponda-Pérez JA, Cachicatari-Vargas E, et al. Factors influencing healthy product consumer behavior: an integrated model of purchase intention. *Front Public Health.* 2025;13:1576427. doi:10.3389/fpubh.2025.1576427