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Source credibility dominates: Risk-mediated adoption in urban digital food recommendation systems

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Abstract

Purpose – This study examines how source credibility, micro-influencer engagement, and parasocial interaction shape information adoption in digital culinary consumption within an urban style center, emphasizing perceived risk as a key mediating mechanism. It addresses whether relational cues or diagnostic credibility signals more strongly drive risk evaluation in highly ambiguous, trend-driven culinary environments.

Design/Methodology/Approach – A quantitative survey of 384 active users of digital culinary platforms in an Indonesian urban style center was conducted. Data were analyzed using multiple regression and mediation analysis (Sobel test) in SPSS.

Findings – Source credibility emerges as the strongest predictor of information adoption, both directly and through reduced perceived risk. In contrast, micro-influencer cues and parasocial interaction were found to increase perceived risk and showed no significant direct effect on information adoption, suggesting that relational closeness and authenticity signals may elicit greater skepticism rather than trust when consumers prioritize diagnostic, objective quality information.

Originality/Value – The study identifies key boundary conditions in influencer effectiveness, showing that in high-stakes lifestyle domains like food, diagnostic credibility outweighs relational appeal. It advances theoretical integration by clarifying how risk mediates signal–behavior linkages in digital consumption.

Practical Implications – Culinary brands should prioritize communicators with verifiable expertise and transparent review practices, while platforms should reinforce credibility-based signals to reduce consumer uncertainty.

Keywords – Source Credibility, Perceived Risk, Micro-Influencer, Parasocial Interaction, Information Adoption

1. Introduction

Digital consumption environments have transformed the ways individuals evaluate information, form judgments, and make information adoption. Within highly dynamic urban lifestyle settings, particularly those characterized by fast-changing culinary trends and visually driven digital cultures, consumers increasingly depend on signals transmitted through

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social media sources to infer product quality and minimize uncertainty (Diao et al., 2025; Filieri et al., 2023). As direct product experience is often limited in online culinary discovery, audiences rely on communicators such as influencers, micro-influencers, and media figures to form beliefs about authenticity, safety, and value (Ahmad et al., 2025; Ghauri et al., 2025). The rapid expansion of urban style centers has intensified this reliance since consumers encounter a high volume of competing information and face substantial ambiguity when choosing dining options (Kirilenko et al., 2024). These conditions position credibility cues and relational signals as essential mechanisms that guide perceptions and shape information adoption.

Existing research has established the central role of source credibility in influencing consumer judgments. Classical and contemporary studies consistently show that expertise, trustworthiness, and attractiveness enhance message persuasiveness and reduce perceived uncertainty in digital settings (AlFarraj et al., 2021; Serman & Sims, 2023). Research also highlights the rising importance of micro-influencers who possess smaller, highly engaged audiences and are perceived as more authentic and relatable than macro influencers). Additionally, parasocial interaction has emerged as a powerful psychological mechanism that fosters emotional closeness and trust, ultimately improving message acceptance (Sheng et al., 2025). While these three constructs are individually well established, their combined role within a unified model of risk reduction and information adoption in an urban lifestyle environment remains largely underexplored. Prior studies have not clearly resolved the tension between diagnostic credibility cues and relational cues, especially in culinary contexts where risk sensitivity is high and trust in information is critical.

Another stream of literature emphasizes the significance of perceived risk in digital consumption. Consumers often experience uncertainty related to product quality, financial outcomes, performance expectations, and social judgment, especially when decisions are based solely on mediated cues (Al-Adwan et al., 2022). Previous studies show that when perceived risk is high, information adoption becomes unlikely regardless of the communicator's credibility (Jiang et al., 2021). However, although research in e commerce, social commerce, and influencer communication recognizes the importance of perceived risk, relatively few studies investigate risk as a mediating mechanism that connects credibility-based signals with actual information adoption (Li, 2021). The limited integration of risk mediation creates a theoretical gap in explaining how signals transmitted by different types of communicators translate into behavioral outcomes in digital urban lifestyle contexts.

A further gap arises from the insufficient attention given to micro-influencers within signaling and uncertainty reduction frameworks. While micro-influencers are widely recognized for authenticity and niche expertise, scholarly findings remain inconsistent regarding their actual capacity to lower risk and drive adoption (Juiher & Ouaddi, 2025). Some studies report strong positive effects, whereas others indicate that followers sometimes perceive micro influencers as commercially motivated or lacking sufficient expertise (Thota et al., 2025). These mixed results indicate that theoretical integration is still incomplete and context-dependent. Research situated in urban style centers, where culinary exploration is strongly shaped by social recommendation, provides an opportunity to clarify the functional impact of micro influencers (Kirilenko et al., 2024).

Similarly, parasocial interaction has been studied extensively in entertainment and livestream commerce, yet its influence in digital culinary recommendation remains understudied (Liao et al., 2021). The emotional closeness typical of parasocial bonds may strongly reduce uncertainty, yet the magnitude and direction of this effect in lifestyle-driven urban environments remain ambiguous. Moreover, the mediating role of perceived risk between parasocial connections and information adoption has received limited empirical

attention, despite strong theoretical justification from both Signaling Theory and Uncertainty Reduction Theory.

Given these gaps, this study offers several contributions. First, it integrates Signaling Theory and Uncertainty Reduction Theory to explain how consumers interpret credibility cues and relational signals when navigating digital culinary information. This dual theoretical perspective clarifies why and how signals such as expertise, authenticity, and psychological closeness influence perceived risk and eventually information adoption. Second, the study empirically examines the joint influence of source credibility, micro-influencer, and parasocial interaction in a single structural framework. Such integration is rare and extends the discussion beyond isolated variable effects. Third, this research provides new evidence on the mediating role of perceived risk, which functions as a key psychological mechanism linking signals with behavioral outcomes (Kim et al., 2022). Finally, by situating the analysis within the context of an urban style center, the study advances understanding of decision making in trend sensitive lifestyle ecosystems where social and symbolic meanings heavily shape consumption (Alotaibi, 2025).

The findings offer meaningful implications for theory and practice. For theoretical development, the integrated model strengthens the explanatory power of signaling and uncertainty reduction mechanisms by demonstrating how audiences interpret and internalize influencer signals in digital culinary environments (Hwang & Youn, 2023). For practitioners, especially digital marketers and culinary businesses, the insights highlight which influencer characteristics most effectively reduce perceived risk and increase information adoption among urban consumers (Guo et al., 2025; Selvakumar et al., 2025). Overall, the study contributes to a more nuanced and contextually grounded understanding of credibility dynamics and risk evaluation in contemporary digital consumption.

2. Literature review

This study integrates Signaling Theory (Spence, 2002) and Uncertainty Reduction Theory (Berger & Calabrese, 1974) to explain how source credibility, micro-influencer, and parasocial interaction shape perceived risk and ultimately influence information adoption within the urban style center context. Signaling Theory asserts that individuals rely on credible cues transmitted by communicators to infer unobservable qualities and reduce ambiguity during decision-making (Connelly et al., 2011). In digital consumption environments, especially within trend-driven urban social spaces, consumers depend heavily on informational cues from social media sources to evaluate the reliability of culinary recommendations (Diao et al., 2025). Signals such as expertise, trustworthiness, attractiveness, personal relevance, and relational closeness serve as indicators that help consumers judge whether a source is reliable and worthy of influence (Filieri et al., 2023).

Uncertainty Reduction Theory complements Signaling Theory by proposing that individuals actively seek information that reduces uncertainty during interactions (Kellermann & Reynolds, 1990). When consumers engage with digital culinary platforms, they face uncertainty concerning quality, safety, authenticity, and value (Al-Adwan et al., 2022). Consequently, they rely on credible information sources and relational cues to diminish perceived risk (Huang, 2021). The interaction between signaling cues and uncertainty reduction mechanisms becomes particularly important in digital recommendation environments where consumers are unable to directly evaluate products (Juiher & Ouaddi, 2025). Source credibility, micro-influencer cues, and parasocial engagement therefore function as central mechanisms that reduce uncertainty, lower perceived risk, and shape subsequent information adoption (Breves et al., 2021).

Integrating both theories provides a coherent explanation for the cognitive and relational mechanisms through which digital audiences interpret influencer signals (Fang & Li, 2025;

Walker et al., 2013). Consumers in the urban style center do not simply respond to information passively but instead evaluate signals, update beliefs, and reduce uncertainty before forming information adoption (Hwang & Youn, 2023). The model proposed in this research is therefore grounded in a dual-theoretical logic: credible signals reduce uncertainty, and reduced uncertainty promotes adoption.

2.1. Source credibility has a negative effect on perceived risk.

Source credibility refers to the degree to which a message recipient perceives a communicator as trustworthy, expert, and reliable (Serman & Sims, 2023). Classic communication literature defines source credibility as a multidimensional construct comprising expertise, trustworthiness, and attractiveness, enabling audiences to judge the quality and accuracy of information (AlFarraj et al., 2021). Within Signaling Theory, source credibility operates as a high-cost signal. Credible sources transmit signals that are difficult to imitate by unqualified actors, making them reliable indicators of message accuracy (Macchione Saes et al., 2025). From the perspective of Uncertainty Reduction Theory, highly credible sources lower cognitive ambiguity and enable audiences to interpret information with reduced perceived risk (Huang, 2021).

Empirical studies consistently demonstrate that credible information sources significantly reduce uncertainty and perceived risk in digital commerce, service evaluation, and online recommendation environments (Jiang et al., 2021). Prior findings show that expertise and trustworthiness alleviate concerns about product quality, reduce fear of misinformation, and make audiences more confident in their evaluation processes. In influencer marketing studies, source credibility has been found to diminish social, financial, and psychological risks associated with consumption (Symbiosis & Gandhi, 2024). Based on this theoretical and empirical foundation, the following hypothesis is proposed:

H_1: Source credibility has a negative effect on perceived risk.

2.2. Micro-influencer and perceived risk.

Micro-influencers are individuals with relatively small but highly engaged follower communities who are often valued for their perceived authenticity and niche expertise (Harrison, 2024). Within Signaling Theory, micro-influencers function as signal senders whose personal style and storytelling are interpreted as credible cues by their audiences (Ahmad et al., 2025). Compared to macro-influencers, they are typically perceived as more approachable, relatable, and trustworthy, which strengthens the persuasive power of their communication (Harrison, 2024; Suhud et al, 2023). Within Uncertainty Reduction Theory, micro-influencers serve as uncertainty-reducing agents by offering socially validated information, personal narratives, or experiential details that help audiences evaluate risks (Bolland, 2025).

However, recent developments in digital marketing have complicated this assumption of authenticity. As commercial collaborations become more prevalent, the interpretability of micro-influencer signals becomes increasingly ambiguous (Juiher & Ouaddi, 2025). Their recommendations often lack formal verification mechanisms or institutional backing, which weakens the diagnosticity of their cues, particularly in high-stakes domains such as food safety and quality (Harrison, 2024). From the perspective of Uncertainty Reduction Theory, instead of reducing uncertainty, ambiguous or weakly verified signals may heighten audiences' awareness of potential risks (Bolland, 2025).

Empirical studies suggest that when audiences perceive a misalignment between an influencer's perceived expertise and the seriousness of the decision context, skepticism intensifies and perceived risk increases (Breves et al., 2021; Mohseni, 2025). Similarly, while similarity and closeness can enhance engagement, they may also trigger risk sensitivity when followers question the influencer's diagnostic competence (Sheng et al., 2024). In this sense,

micro-influencers may paradoxically function as risk-amplifying rather than risk-reducing agents in contexts where credibility, safety, and technical knowledge are critical (Juiher & Ouaddi, 2025). Considering the theoretical propositions and mixed empirical patterns, the hypothesis is formed as follows:

H_2: Micro-influencer has a positive effect on perceived risk.

2.3. Parasocial interaction and perceived risk.

Parasocial interaction refers to one-sided psychological relationships in which individuals develop perceived intimacy and emotional closeness with media figures (Sheng et al., 2025). Such relationships foster feelings of familiarity and perceived friendship, leading audiences to experience a sense of relational proximity to digital communicators (Gao et al., 2025). Within Signaling Theory, parasocial cues operate as relational signals that communicate authenticity, benevolence, and alignment of values, thereby shaping audience interpretations of the communicator's intent (Zhao et al., 2024). These signals enhance perceived connection and reduce doubts about the communicator's motives (Garg & Bakshi, 2024). Although parasocial interaction is traditionally associated with enhanced trust and reduced skepticism, emerging evidence suggests that its effects are highly context-dependent. In environments with high perceived consequences such as food safety, health, or ethically sensitive consumption, emotional closeness does not always lead to reassurance. Instead, it may generate cognitive tension (Sheng et al., 2025; Moldovan et al., 2024). From the perspective of Uncertainty Reduction Theory, closeness may heighten information sensitivity, encouraging audiences to scrutinize message credibility more intensely rather than relying on emotional reassurance (Zhao et al., 2024).

Empirical research indicates that strong parasocial bonds can increase perceived vulnerability when followers recognize that their emotional trust is not matched by the communicator's formal expertise (Farivar et al., 2024; Lee & Lee, 2022). In digital endorsement contexts, followers have been found to experience heightened risk awareness when relational closeness exposes the subjective and non-institutional nature of the information source (Frölander & Gullbrandsson, 2022). Thus, instead of consistently functioning as a buffer against uncertainty, parasocial interaction may intensify perceived risk by amplifying awareness of the communicator's limitations and potential bias (Sheng et al., 2025; Moldovan et al., 2024). Based on theoretical reasoning and existing evidence, the following hypothesis is proposed:

H_3: Parasocial interaction has a positive effect on perceived risk.

2.4. Source credibility and information adoption.

Information adoption refers to the degree to which individuals accept and use information to guide their behavior (Sussman & Siegal, 2003). Source credibility greatly influences information adoption because audiences interpret credible communicators as trustworthy and knowledgeable (Qureshi et al., 2021). According to Signaling Theory, credible signals enhance message diagnosticity, making the information more persuasive and influential (Baier et al., 2022). Through Uncertainty Reduction Theory, individuals adopt information more readily when credibility reduces doubts and provides confidence in the message (Al-Adwan et al., 2022).

Prior research consistently finds that credibility is a strong predictor of information acceptance across digital recommendation systems, e-commerce, and influencer studies (Daowd et al., 2021; Mainolfi et al., 2022). Users are more willing to rely on recommendations from expert and trustworthy sources and tend to adopt information that comes from reliable communicators (Rahaman et al., 2022). Grounded in theoretical and empirical arguments, the study proposes the following hypothesis:

H_4: Source credibility has a positive effect on information adoption.

2.5. Micro-influencer and information adoption.

Micro-influencers often drive information adoption due to their perceived authenticity, relatability, and engaged communities (Richter et al., 2025). Signaling Theory explains that audiences interpret micro-influencer cues as trustworthy signals that reflect genuine opinions rather than commercial persuasion (Tian, 2023). Through the lens of Uncertainty Reduction Theory, micro-influencers lower ambiguity by providing contextualized, experience-based insights that encourage audiences to rely on their recommendations (Kilumile et al., 2025).

Empirical studies indicate that micro-influencers significantly affect information adoption because followers perceive them as credible peers (Peres & Silva, 2021). Research in social commerce and digital recommendations shows that micro-influencer increases message acceptance, strengthens persuasive outcomes, and shapes consumer intentions. Based on these insights, the following hypothesis is proposed:

H_5: Micro-influencer has a positive effect on information adoption.

2.6. Parasocial interaction and information adoption.

Parasocial interaction enhances followers' engagement and trust, making them more susceptible to adopting information from influencers with whom they feel a psychological connection (Wei et al., 2022). Signaling Theory interprets parasocial cues as signals of relational authenticity (Hao et al., 2025), while Uncertainty Reduction Theory views such relationships as mechanisms that reduce uncertainty by fostering emotional closeness, perceived benevolence, and confidence in the communicator (Bhatti & Shodiyev, 2025).

Empirical evidence shows that parasocial relationships increase message acceptance, recommendation adoption, and consumer willingness to follow influencers' suggestions (Garg & Bakshi, 2024). When audiences perceive influencers as friends, they display higher openness to adopting the information provided. Therefore, the hypothesis is formulated as:

H_6: Parasocial interaction has a positive effect on information adoption.

2.7. Perceived risk as a mediator between source credibility and information adoption.

Perceived risk represents the degree of uncertainty and potential negative outcomes associated with using or relying on information (Kenesei et al., 2022). Signaling Theory suggests that credible sources lower perceived risk, which enhances message acceptance (Al-Adwan et al., 2022). Uncertainty Reduction Theory proposes that individuals adopt information only after uncertainty is sufficiently lowered (Oldeweme et al., 2021). Therefore, perceived risk becomes a cognitive mediator that links credibility signals with the adoption process (Kenesei et al., 2025).

Empirical studies demonstrate that perceived risk frequently mediates the relationship between credibility and adoption behaviors (Kenesei et al., 2025; Li, 2021). Findings show that credibility decreases risk perceptions, which in turn increases information acceptance and behavioral intentions. Drawing from these perspectives, the following hypothesis is proposed:

H_7: Perceived risk mediates the relationship between source credibility and information adoption.

2.8. Perceived risk as a mediator between micro-influencer and information adoption

Micro-influencers are expected to reduce perceived risk through authentic communication and peer-like credibility (Ghauri et al., 2025). When followers perceive micro-influencers as genuine and relatable, perceived risk decreases, which should lead to greater information adoption (Mohseni, 2025). Within Signaling Theory, micro-influencers generate low-cost yet authentic signals that shape risk evaluation. Uncertainty Reduction

Theory asserts that when risk is minimized, individuals are more willing to adopt information (Grace & Tham, 2021).

Although empirical findings show mixed results, several studies report that perceived risk partially mediates influencer effects on adoption in digital platforms, particularly when the influencer's authenticity is salient (Lakho & Rashid, 2025; Wang & Wang, 2025). Based on theoretical logic, the following hypothesis is proposed.

H_8: Perceived risk mediates the relationship between Micro-influencer and information adoption.

2.9. Perceived risk as a mediator between parasocial interaction and information adoption.

Parasocial interaction reduces perceived risk by fostering emotional closeness, perceived intimacy, and trust (Farivar et al., 2024). Signaling Theory explains that relational cues serve as authentic signals that reduce doubts about the intentions of the communicator (Breves et al., 2021). Uncertainty Reduction Theory further suggests that when followers perceive psychological closeness with the communicator, uncertainty decreases, enabling smoother information adoption (Yang et al., 2024).

Empirical research consistently demonstrates that parasocial bonds lower perceived risk, which then increases information acceptance, especially in contexts such as livestream commerce, influencer endorsement, and digital product recommendations (Walter et al., 2022). This risk-reducing role supports the mediating mechanism proposed in this study. Based on these arguments, the following hypothesis is proposed:

H_9: Perceived risk mediates the relationship between parasocial interaction and information adoption.

The hypotheses of this study are presented visually in Figure 1.

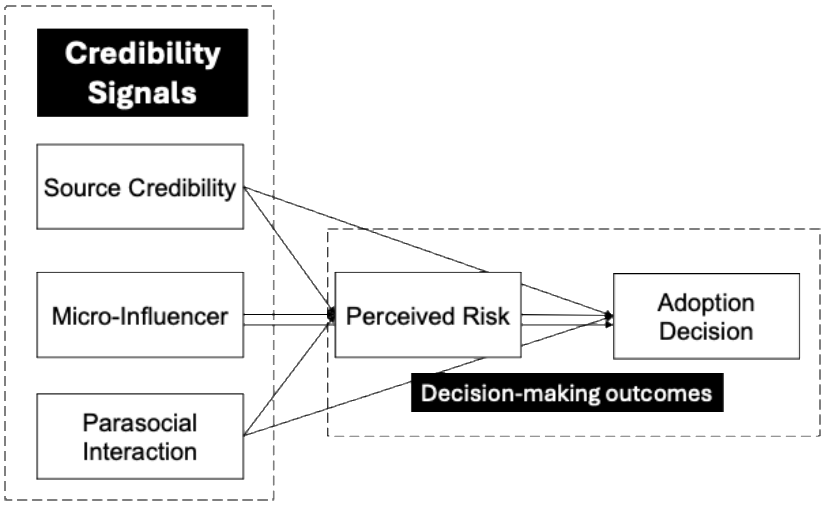

Figure 1. Research Framework

3. Methodology

This study adopts a quantitative research approach using primary data obtained directly from respondents who use digital culinary services in the Urban Style Center, particularly those who access information through social media or digital platforms. Data were collected over one month, from early October to early November 2025, using a closed-ended questionnaire designed based on the study's variables: source credibility, Micro-influencer credibility, and parasocial interaction as independent variables, perceived risk as a mediating variable, and information adoption as the dependent variable. Measurement items were adapted from established scales: source credibility and perceived risk (González-Rodríguez, 2022),

parasocial interaction (Rudeloff & Damms, 2022), Micro-influencers (Hu et a., 2024), and information adoption (Jiang et al., 2021). Specifically, source credibility was assessed with 4 items (e.g., "The influencer is knowledgeable about food"), micro-influencer credibility with 4 items (e.g., "This influencer provides honest opinions"), parasocial interaction with 4 items (e.g., "I feel like I know this influencer personally"), perceived risk with 4 items (e.g., "I worry the recommended food may not be safe"), and information adoption with 4 items (e.g., "I would follow this recommendation").

The questionnaire used a 1–6 Likert scale, ranging from "strongly disagree" to "strongly agree," to capture the intensity of respondents' perceptions. A six-point Likert scale was employed to avoid neutral midpoint bias and to encourage respondents to make a directional judgment, which is recommended in consumer perception research. In this study, a micro-influencer is operationally defined as a social media content creator with a follower range between 1,000 and 100,000 active followers on Instagram or TikTok, who demonstrates high audience engagement (e.g., likes and comments) (Chen et al., 2024). This study focuses on micro-influencer credibility rather than mere engagement, measuring perceived expertise, authenticity, and trustworthiness of the influencer.

The data analysis process was carried out using SPSS and Microsoft Excel to organize, tabulate, and visualize statistical outputs. The analytical stages included validity and reliability tests, descriptive analysis, classical assumption tests, multiple linear regression, and mediation analysis to examine both direct and indirect effects among variables through Perceived Risk. Descriptive statistics were used to explain respondents' demographic characteristics, including gender, age, education level, and experience using digital culinary services, to ensure sample representativeness.

The total number of valid respondents was 384 individuals, selected using a purposive sampling technique with criteria of being active users of digital culinary platforms and within the productive age range (18–45 years). This methodological design aims to provide a comprehensive understanding of how source credibility, Micro-influencer credibility, and parasocial interaction factors influence information adoption through the mediating role of perceived risk in the context of digital culinary engagement in Urban Style Center.

4. Results

4.1. Validity and reliability test

The results presented in Table 1 demonstrate that all measurement items in this study meet the required psychometric standards for validity and reliability based on the responses of 384 participants. The corrected item total correlation values for every indicator exceed the r table threshold of 0.098, which indicates that each item has a strong and meaningful correlation with its respective construct. According to O'Leary-Kelly & Vokurka (1998), items with corrected item total correlations above 0.30 are considered acceptable indicators that contribute to convergent validity. Since all indicators in this study are far above that minimum threshold, the measurement model can be considered empirically sound and capable of capturing the intended constructs effectively.

In addition to validity, Table 1 shows that each construct demonstrates high internal consistency reliability. The Cronbach's Alpha values range from 0.799 to 0.853, surpassing the recommended minimum level of 0.70 as suggested by Tavakol and Dennick (2011). This indicates that the items within each variable measure the same underlying concept consistently and that the scales used in this study are reliable for statistical analysis. Specifically, source credibility, micro-influencer, parasocial interaction, perceived risk, and information adoption all achieve reliability coefficients that fall within the acceptable to excellent category. The consistency of these values suggests that respondents interpreted the items in a coherent manner, which strengthens the credibility of the subsequent hypothesis testing.

Given the relatively large sample size of 384 respondents, these validity and reliability results gain additional statistical robustness. Larger samples generally lead to more stable item correlations and more accurate reliability estimates, as noted by DeVellis and Thorpe (2021). The strong corrected item total correlations reflect that respondents understood the constructs clearly and differentiated effectively between items, while the high reliability coefficients confirm that the scales used in this study are well structured and theoretically aligned with prior literature.

Table 1. Validity and reliability test results

Variable	Indicator	Corrected Item–Total Correlation	r-table	Description	Cronbach's Alpha	Description
Source credibility	CRE1	0.828	0.098	Valid	0.824	Reliable
	CRE2	0.829	0.098	Valid		
	CRE3	0.844	0.098	Valid		
	CRE4	0.734	0.098	Valid		
Micro-influencer	MIC1	0.800	0.098	Valid	0.844	Reliable
	MIC2	0.804	0.098	Valid		
	MIC3	0.858	0.098	Valid		
	MIC4	0.842	0.098	Valid		
Parasocial interaction	SOC1	0.749	0.098	Valid	0.799	Reliable
	SOC2	0.810	0.098	Valid		
	SOC3	0.804	0.098	Valid		
	SOC4	0.807	0.098	Valid		
Perceived Risk	RISK1	0.801	0.098	Valid	0.853	Reliable
	RISK2	0.858	0.098	Valid		
	RISK3	0.852	0.098	Valid		
	RISK4	0.822	0.098	Valid		
Information adoption	ADP1	0.812	0.098	Valid	0.831	Reliable
	ADP2	0.827	0.098	Valid		
	ADP3	0.851	0.098	Valid		
	ADP4	0.794	0.098	Valid		

Source: Processed Data 2025

4.2. Classical assumption test

The results in Table 2 indicate that the regression model meets the statistical assumptions required for reliable estimation in SPSS, thereby supporting the robustness of the subsequent hypothesis testing. Although the Kolmogorov Smirnov test shows a significance value below 0.05, which formally suggests that the data are not normally distributed, this outcome does not threaten the validity of the regression analysis given the large sample size of 384 respondents. According to Hair et al. (2019), normality becomes less critical in samples above 200 because the central limit theorem ensures that parameter estimates remain stable and unbiased even when the distribution deviates from normality. Therefore, the non-normality observed here is acceptable and does not violate essential assumptions for the regression model.

The multicollinearity diagnostics further demonstrate that the independent variables do not exhibit harmful intercorrelations. All Variance Inflation Factor values fall between 1.007 and 2.259, well below the commonly accepted threshold of 10 recommended by Kutner et al. (2004). All tolerance values exceed 0.1, which reinforces the conclusion that multicollinearity is not present. These results confirm that each predictor contributes unique information to the regression model and that no variable inflates the standard errors of the coefficients. This strengthens the interpretability of the regression outcomes and suggests that the model structure is appropriate for assessing the effects of source credibility, micro-influencer, parasocial interaction, and perceived risk.

The heteroscedasticity assessment using the Breusch Pagan test indicates that all significance values exceed the 0.05 threshold, meaning that the residuals are homoscedastic (Halunga et al., 2017). According to Wooldridge (2016), homoscedasticity is necessary for obtaining efficient and unbiased estimates of the regression coefficients. Since this assumption is met, the error terms can be considered stable across all levels of the independent variables, which enhances the reliability of the hypothesis testing.

Finally, the Durbin Watson statistic of 2.048 falls within the acceptable range of 1.5 to 2.5, indicating an absence of autocorrelation in the residuals (Chen, 2016). This suggests that the errors are independent, which is essential for ensuring that the regression coefficients are not distorted by systematic patterns in the residuals. As stated by Veloz (2009), meeting the autocorrelation assumption strengthens confidence in the predictive accuracy of the model.

Table 2. Classical Assumption Test Results

Test type	Variable Tested	Result	Criteria	Conclusion
Normality Test	Kolmogorov-Smirnov	Sig. < 0.000	Sig. > 0.05 for normality	Data is not normally distributed
Multicollinearity Test	TOTALCRE	VIF = 1.007, Tol = 0.929	VIF < 10, Tolerance > 0.1	No multicollinearity
	TOTALMIC	VIF = 2.114, Tol = 0.466	VIF < 10, Tolerance > 0.1	No multicollinearity
	TOTALSOC	VIF = 2.259, Tol = 0.443	VIF < 10, Tolerance > 0.1	No multicollinearity
	TOTALRISK	VIF = 2.075, Tol = 0.482	VIF < 10, Tolerance > 0.1	No multicollinearity
Heteroscedasticity Test	TOTALCRE	Breusch-Pagan Sig. = 0.222	Sig. > 0.05 → Homoscedastic	No heteroscedasticity
	TOTALMIC	Breusch-Pagan Sig. = 0.377	Sig. > 0.05 → Homoscedastic	No heteroscedasticity
	TOTALSOC	Breusch-Pagan Sig. = 0.659	Sig. > 0.05 → Homoscedastic	No heteroscedasticity
	TOTALRISK	Breusch-Pagan Sig. = 0.867	Sig. > 0.05 → Homoscedastic	No heteroscedasticity
Autocorrelation Test	Durbin-Watson	DW = 2.048	1.5 < DW < 2.5	No autocorrelation

Source: Processed Data 2025

4.3. Linear regression test

The results of the multiple linear regression analysis presented in Table 3 demonstrate that the model effectively explains information adoption in the digital culinary context. The significant F value confirms that the overall model is statistically robust, consistent with recommendations for evaluating model fit in behavioral research (Hair et al. 2019). The adjusted R squared value of 0.514 indicates that approximately half of the variance in information adoption is explained by source credibility, micro-influencer and parasocial interaction, which reflects substantial explanatory power for a social science model (Wooldridge, 1991). At the individual predictor level, micro-influencer and parasocial interaction show positive and statistically significant on information adoption, suggesting that authenticity and relational engagement are central drivers of consumer reliance on digital recommendations.

Conversely, source credibility shows a significant but negative effect, implying that traditional credibility cues may not align with audience expectations in a trend driven urban lifestyle environment, a finding that resonates with recent studies showing that formal expertise sometimes carries less influence than perceived authenticity in influencer contexts. The Durbin Watson statistic also confirms the absence of autocorrelation, indicating stable

residuals. Overall, the regression outputs demonstrate that interpersonal and relational signals are more influential than conventional credibility cues in shaping information adoption within this setting.

Table 3. Multiple linear regression results (Model 1)

Independent Variable	β	Std. Error	Beta (β)	t-value	Sig.	Remark
(Constant)	5.821	0.779	–	7.469	< 0.001	Significant
TOTALCRE	-0.077	0.031	-0.089	-2.440	0.015	Significant (–)
TOTALMIC	0.351	0.050	0.346	7.064	< 0.001	Significant (+)
TOTALSOC	0.428	0.045	0.454	9.511	< 0.001	Significant (+)
Model Fit Statistics						
R	0.720					Strong correlation
R^2	0.518					51.8% explained
Adjusted R^2	0.514					Adjusted 51.4%
Std. Error of Estimate	3.262					–
F-value	136.107				< 0.001	Model significant
Durbin-Watson	2.048					No autocorrelation

Source: Processed Data 2025

The results presented in Table 4 indicate that Model 2 has very limited explanatory power in predicting information adoption. The adjusted R squared value of only 1.7 percent shows that the independent variables in this model account for a minimal proportion of the variance in the dependent variable, which suggests a weak model fit. According to Hair et al. (2019), models with extremely low R squared values provide only limited predictive insight, indicating that other unmeasured variables may have a more substantial influence on the outcome.

Among the predictors, only source credibility demonstrates a significant positive effect on information adoption, with a coefficient of 0.027 and a p value of 0.042. This result suggests that even in the presence of other relational and perceptual variables, audiences still rely on traditional credibility cues when deciding whether to accept information. This finding aligns with prior research indicating that message credibility remains a fundamental driver of information acceptance in digital environments. The magnitude of the effect is modest, yet statistically meaningful, reinforcing the idea that expertise and trustworthiness continue to play a central role in shaping information adoption.

In contrast, micro influencer credibility, parasocial interaction, and perceived risk do not show significant effects in this model. The negative and insignificant coefficients for these variables suggest that relational closeness, authenticity signals, and perceived uncertainty do not directly influence information adoption in this particular context.

Despite the low explanatory power, the model remains statistically significant overall, as indicated by the F value of 2.696 and a model significance level of 0.031. This means that, collectively, the predictors do contribute some degree of explanatory value, although the effect is weak (Eisenhauer, 2009). The Durbin Watson statistic of 1.675 confirms the absence of autocorrelation, which indicates that the regression residuals are independent and the model does not suffer from serial correlation issues (Rutledge & Barros, 2002).

Table 4. Linear regression Model 2

Independent Variable	β	Std. Error	Beta (β)	t-value	Sig.	Remark
(Constant)	3.065	0.348	–	8.817	<0.001	Significant
TOTALCRE	0.027	0.013	0.107	2.040	0.042	Significant (+)

Independent Variable	β	Std. Error	Beta (β)	t-value	Sig.	Remark
TOTALMIC	-0.019	0.022	-0.064	-0.870	0.385	Not. Sig (-)
TOTALSOC	-0.014	0.021	-0.049	-0.649	0.517	Not. Sig (-)
TOTALRISK	-0.016	0.021	-0.054	-0.745	0.457	Not. Sig (-)
R	0.166					Weak correlation
R^2	0.028					2.8% explained
Adjusted R^2	0.017					Adjusted 1.7%
F-value	2.696				<0.001	–
Sig. F	0.031					Model Sig.
Durbin-Watson	1.675					No autocorrelation

Source: Processed Data 2025

4.4. Mediation test results

The results of the Sobel test in Table 5, indicate that perceived risk partially mediates the relationship between certain independent variables and information adoption. Specifically, source credibility has a significant negative indirect effect on information adoption through perceived risk (a × b = 0.001, Z = 2.02, p = 0.043). This suggests that higher source credibility reduces perceived risk, which in turn slightly enhances users' adoption of information.

Similarly, parasocial interaction also demonstrates a significant mediating effect via perceived risk (a × b = -0.007, Z = -2.09, p = 0.037). This finding implies that stronger parasocial bonds between users and influencers decrease perceived risk, thereby facilitating information adoption.

In contrast, the pathway from micro-influencer through perceived risk to information adoption was not significant (a × b = -0.006, Z = -1.86, p = 0.062). This indicates that, unlike source credibility and parasocial interaction, micro-influencer does not meaningfully influence information adoption via perceived risk in this context.

Overall, these findings underscore the role of perceived risk as a partial mediator, highlighting that the credibility of information sources and the quality of parasocial interaction can reduce uncertainty and foster the adoption of information. However, not all credibility cues operate through risk perception, suggesting that alternative mechanisms may be responsible for micro-influencer influence.

Table 5. Mediation test results with sobel test

Mediation Path	a (X→M)	SE_a	(a×b)	Z	p	Conclusion
Source credibility → Risk → Information Adoption	-0.077	0.031	0.001	2.02	0.043	Mediating
Micro-influencer → Risk → Information Adoption	0.351	0.050	-0.006	-1.86	0.062	No Mediation
Parasocial interaction → Risk → Information Adoption	0.428	0.045	-0.007	-2.09	0.037	Mediating

Source: Processed Data 2025

5. Discussion

The results of the hypothesis testing in Table 6 provide several important insights into how credibility cues and relational signals shape risk perception and information adoption within the digital culinary ecosystem of the urban style center. The central contribution of this study lies in demonstrating that in risk-sensitive culinary environments, diagnostic credibility signals systematically outweigh relational cues, challenging dominant assumptions in influencer marketing literature. These findings enrich the theoretical integration of Signaling Theory and Uncertainty Reduction Theory proposed in the earlier chapters and respond directly to the empirical gaps highlighted in prior studies.

The first set of results (H_1–H_3) demonstrates that source credibility, micro-influencer, and parasocial interaction all exert significant effects on perceived risk, although the direction and

magnitude of their influence vary. Consistent with Signaling Theory, higher source credibility significantly reduces perceived risk (β = –0.089, p = 0.015), supporting the notion that trustworthy and expert communicators transmit high-diagnosticity signals that help consumers infer product quality and safety (Rifkin et al., 2025). This aligns with earlier findings showing that credibility attenuates uncertainty in digital recommendation environments (Qureshi et al., 2021). The present study therefore confirms that traditional credibility cues remain essential in guiding consumer evaluations, even in visually driven lifestyle settings (Diao et al., 2025).

Micro-influencer significantly increases perceived risk (β = 0.346, p < 0.001), which supporting many studies that view micro-influencers as authentic and trust-enhancing (Ghauri et al., 2025; Pitafi & Awan, 2024). This result provides empirical support for criticisms raised by Harrison (2024), who argues that micro-influencers are increasingly perceived as commercially motivated or insufficiently expert, especially when endorsements lack transparency. In the context of the urban style center, where consumers often seek novelty but remain cautious about quality and hygiene, the social proximity of micro-influencers appears insufficient to reduce uncertainty (Gunawan et al., 2023; Kirilenko et al., 2024). Rather than functioning as reassurance signals, their recommendations may heighten skepticism (Thota et al., 2025), suggesting a boundary condition for the commonly assumed authenticity advantage of micro-influencers.

Similarly, parasocial interaction significantly increases perceived risk (β = 0.545, p < 0.001), as hypothesized in H_3, reflecting a boundary condition wherein emotional closeness heightens risk perception when followers infer subjective bias or limited competence in food-safety judgment (Moldovan et al., 2024). Although prior literature typically shows that parasocial bonds reduce skepticism and enhance trust (Breves et al., 2021; Liao et al., 2021), the present results indicate the opposite. One possible explanation is that followers who feel emotionally close to influencers may simultaneously become more aware of the influencer's subjective preferences, personal biases, or non-expert status, leading to heightened perceived uncertainty. This supports calls for deeper contextual examinations of parasocial influence, as its effects may differ significantly across consumption domains (Sheng et al., 2025). In lifestyle-oriented culinary settings, emotional closeness may not directly translate into confidence regarding food quality or safety (Moldovan et al., 2024).

The second group of findings (H_4–H_6) examines direct effects on information adoption. Source credibility positively predicts adoption (β = 0.112, p = 0.032), reinforcing long-standing evidence that credible communicators reduce cognitive effort and strengthen acceptance of recommendations. This further validates the role of signaling mechanisms in facilitating adoption in high-noise digital environments (Guo et al., 2025). In contrast, the effects of both micro-influencer (β = –0.083, p = 0.223) and parasocial interaction (β = –0.074, p = 0.281) on adoption are not significant. These results contradict mainstream influencer-marketing literature, which generally reports positive associations (Garg & Bakshi, 2024; Sheng et al., 2024). However, the studies by Suhud et al. (2023) and Huang et al. (2022) are consistent with emerging findings suggesting that relational cues may lose their influence in contexts where consumers seek objective quality assurance rather than social validation. In the context of culinary decision making, especially in competitive and trend-driven settings, consumers appear to prioritize credible information over relational closeness or influencer relatability (Alotaibi, 2025).

Table 6. Hypothesis testing

Code	Hypothesis	β	t/Z	p	Result
H_1	Source credibility has a negative effect on Risk	-0.089	-2.440	0.015	Supported
H_2	Micro-influencer has a positive effect on Risk	0.346	7.064	<0.001	Supported
H_3	Parasocial interaction has a positive effect on risk	0.545	9.409	<0.001	Supported
H_4	Source credibility has a positive effect on Information Adoption	0.112	2.150	0.032	Supported

Code	Hypothesis	β	t/Z	p	Result
H_5	Micro-influencer has a positive effect on Information Adoption	-0.083	-1.196	0.223	Not Supported
H_6	Parasocial interaction has a positive effect on information adoption	-0.074	-1.081	0.281	Not Supported
H_7	Risk mediates the effect of Source credibility on Information Adoption	0.001	z = 2.02	0.043	Supported
H_8	Risk mediates the effect of Micro-influencer on Information Adoption	-0.006	z = -1.86	0.062	Not Supported
H_9	Risk mediates the effect of parasocial interaction on information adoption	-0.007	z = -2.09	0.037	Supported

Source: Processed Data 2025

The mediation results (H_7–H_9) offer deeper insight into the psychological mechanisms underlying information adoption. Perceived risk significantly mediates the effect of source credibility on adoption ($\beta = 0.001$, $p = 0.043$), supporting the theoretical proposition that credibility reduces uncertainty, which in turn facilitates information acceptance. This finding aligns with Kim et al. (2022) and Huang (2021), providing strong empirical support for the integrated framework proposed earlier and confirming that uncertainty reduction constitutes a central pathway through which credibility influences behavioral intentions.

The mediation effect for parasocial interaction is also significant ($p = 0.037$), although the direction reveals that parasocial interaction increases risk, which subsequently reduces adoption. This nuance clarifies inconsistencies in prior studies by showing that parasocial closeness does not universally decrease uncertainty and may sometimes have unintended risk-enhancing effects (Huang et al., 2022; Lee & Lee, 2022).

Meanwhile, perceived risk does not mediate the effect of micro-influencer on adoption ($p = 0.062$), reinforcing the earlier results that micro-influencers in this context do not effectively lower risk nor strengthen adoption behavior (Juiher & Ouaddi, 2025). This contradicts conventional assumptions in influencer literature but aligns with recent studies suggesting that micro-influencer effectiveness is highly context dependent and may diminish when credibility signals are ambiguous or when audiences perceive endorsement saturation (Mohseni, 2025).

Overall, these findings demonstrate that credibility-based signals, rather than relational cues, play the dominant role in shaping information adoption in digital culinary environments. The results also underscore the importance of perceived risk as a central psychological mechanism within the integrated Signaling and Uncertainty Reduction framework. This study therefore extends prior literature by showing that the effectiveness of influencers cannot be generalized across consumption domains and that the urban style center represents a unique context where audiences prioritize objective credibility over social relatability.

6. Conclusions and future research

The findings demonstrate that credibility-based cues remain the most decisive drivers of consumer judgment, while relational signals, often presumed powerful in digital persuasion, operate differently in this context. The results confirm that source credibility directly strengthens information adoption and indirectly enhances it by reducing perceived risk. These findings reinforce the theoretical proposition that credible signals diminish uncertainty and facilitate behavioral acceptance (Al-Adwan et al., 2022).

Conversely, micro-influencer and parasocial interaction increase perceived risk rather than alleviate it, suggesting that authenticity, emotional closeness, and social relatability do not guarantee consumer confidence when decisions involve culinary safety, hygiene, and quality evaluation (Selvakumar et al., 2025). These insights extend both Signaling Theory and Uncertainty Reduction Theory by revealing that the effectiveness of influencer-derived cues

is highly domain specific and contingent on consumers' need for diagnostic and risk-reducing information.

Theoretically, this research advances the literature by providing an integrated framework that clarifies how different types of signals interact to shape risk perception and behavioral outcomes in trend-sensitive lifestyle environments. It highlights that credibility cues, not relational bonds, are the dominant mechanisms guiding adoption in settings where uncertainty about product quality is high. Practically, the findings underscore that culinary businesses and digital marketers should prioritize influencers who possess clear expertise, transparent review practices, and verifiable product knowledge. Emotional engagement strategies, which are often central in lifestyle branding, may be insufficient or even counterproductive when consumers perceive strong information asymmetry. Platforms and businesses should therefore emphasize credibility verification, expertise-driven content, and transparent evaluation standards to reduce uncertainty and increase consumer trust.

Despite these contributions, the study is constrained by its use of cross-sectional data, which limits causal inference, and by its focus on a single urban lifestyle setting, potentially restricting the generalizability of the findings to broader or non-culinary digital contexts. The reliance on self-reported perceptions may also introduce bias, particularly in assessing relational constructs such as parasocial interaction.

Future research should employ longitudinal or experimental designs to more precisely capture the dynamic evolution of risk perceptions and influencer effects. Comparative studies across product categories could clarify contextual boundaries where relational cues regain or lose persuasive strength. Incorporating additional mediators, such as message diagnosticity, perceived authenticity, or emotional involvement, may also enrich theoretical explanations of how credibility and parasocial mechanisms interact in digital consumption environments.

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The authors declare that they have no known competing financial interests or personal relationships that could have influenced this research.

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The authors confirm that this study adhered to ethical guidelines, is original, and has not been published or submitted elsewhere.

Data availability

No additional data are available for sharing.

AI assistance statement

No generative AI or automated tools were used for conceptualization or analysis. ChatGPT was used solely for language refinement; all intellectual content was produced and verified by the authors.