

Does Perceived Quality Predict Consumer Responses Across Industries? Evidence from Insurance, Perfume, and Restaurant Services

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KEYWORDS	ABSTRACT
Keywords: Stimulus-Organism-Response; Expectation-Disconfirmation; Cross-Sector Comparison; Moderated Regression; Service Marketing. Conflict of Interest Statement: The author(s) declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. Copyright ©2026 Vifada Management and Digital Business. All rights reserved.	Purpose: This study examines whether the effect of perceived quality on consumer response generalizes across industries that differ in involvement, risk, and tangibility, testing industry sector as a moderator. Research Method: Survey data from three independently collected Indonesian samples, namely credit life insurance customers (n = 159), perfume consumers exposed to influencer marketing (n = 402), and restaurant patrons (n = 211), were harmonized into composite indices and analyzed using a fixed-effects, dummy-coded moderated regression with robust standard errors. Results and Discussion: Perceived quality strongly predicted consumer response ($b = .896$, $p < .001$; $R^2 = .623$). The overall quality $\times$ sector interaction was not significant ($F(2, 766) = 2.11$, $p = .122$), although the relationship was weaker in the restaurant sector, and the interaction became significant after excluding uniform responses ($p = .033$). Mean levels of both constructs differed significantly by sector. Implications: Firms managing diverse business units can apply a unified customer-experience strategy while setting sector-specific performance benchmarks. Future research should test individual-level moderators and the full stimulus-organism-response mediation chain. Originality: This study provides a formal cross-industry test of the quality-response relationship and demonstrates a composite-index harmonization and fixed-effects moderation approach for comparisons involving few higher-level units.

1) Introduction

Understanding what drives a positive consumer response, whether operationalized as satisfaction, trust, or purchase intention, has attracted considerable research interest because it is regarded as the core of marketing and service-management research ([Oliver, 1980](#)). Over the past four decades, the dominant paradigm for explaining consumer response has centered on perceived quality. The SERVQUAL framework developed by Parasuraman et al. (1988) and its subsequent adaptations establish perceived service quality as a key antecedent of customer satisfaction, while research on advertising and influencer marketing shows that source credibility drives trust and purchase intention ([Han & Balabanis, 2024](#); [Ohanian, 1990](#)). Both perspectives can be understood through the broader Stimulus-Organism-Response (S-O-R) theory introduced by [Mehrabian & Russell \(1974\)](#), which is frequently applied in recent consumer research ([Rajput & Gahfoor, 2020](#); [Zhu et al., 2020](#)). S-O-R theory posits that consumers process external stimuli, such as product or service quality, both cognitively and emotionally. These internal processes can ultimately shape how they feel, think, and behave. However, most existing S-O-R studies have been conducted within a single industry. For example, studies on insurance service quality have surveyed only insurance customers, influencer-credibility studies have focused on social-media audiences exposed to a single product category, and

restaurant studies have examined diners of a particular cuisine or region. An important question therefore remains unanswered: whether the influence of perceived quality on consumer responses is consistent across different consumption contexts or depends on industry characteristics, particularly the level of purchase involvement, perceived risk, and tangibility.

This question carries practical urgency in the Indonesian market context, where the three service and product categories examined in this study are simultaneously significant yet understudied in combination. Indonesia's insurance penetration remains persistently low, at 2.72% as of February 2025, well below that of neighboring markets such as Malaysia (4.8%) and Singapore (11.4%) in 2023 ([Untari, 2025](#)). Although the insurance development roadmap of the Financial Services Authority (OJK) continues to target sectoral growth ([Untari, 2025](#)), credit-linked life insurance remains a strategically important but underexamined bancassurance product. Simultaneously, influencer-driven social commerce has become a dominant promotional channel for fast-moving consumer goods including fragrances ([Vrontis et al., 2021](#)), while the food-service sector remains one of the most quality-sensitive and frequently transacted consumption categories in the country. These three sectors differ dramatically in purchase involvement, tangibility, and transaction frequency, making them a demanding test-bed for the generalizability of quality-response theory.

Evidence from the original single-sector studies underlines this urgency. In credit life insurance, the policy is typically embedded in a bank loan, so customers often hold no well-defined prior expectations and judge the service mainly on its actual performance, with technology-enabled service and personalized financial planning emerging as the strongest drivers of satisfaction ([Louhenapessy & Naibaho, 2026](#)). In the local perfume sector, which has grown rapidly through digital-native brands that rely heavily on influencer marketing, one such brand reduced the share of its marketing budget allocated to key opinion leaders from 97% to 67% after observing diminishing returns, amid growing consumer skepticism toward paid influencer content ([Tan et al., 2026](#)). In the restaurant sector, locally owned micro, small, and medium-sized eateries in international tourist destinations such as Ubud compete for highly diverse domestic and foreign customers, for whom satisfaction is pivotal to business survival ([Ningrum & Naibaho, 2026](#)). Each of these studies, however, examined only a single sector, leaving open whether the observed quality-response mechanism is sector-specific or shared across contexts.

Currently, empirical evidence remains limited on whether the strength of the stimulus-response relationship is statistically invariant across sectors when examined within a single empirical framework. Existing cross-industry work ([Gilbert & Veloutsou, 2006](#)) has compared satisfaction levels across industries, and meta-analyses have shown that links between satisfaction and its outcomes vary with industry and measurement context ([Mittal et al., 2023](#); [Otto et al., 2020](#)), but none has formally studied whether the strength of the quality-response relationship itself is moderated by industry. The present study addresses this gap by pooling three independently collected survey datasets (N = 772) from prior studies by [Louhenapessy & Naibaho \(2026\)](#), [Tan et al. \(2026\)](#), and [Ningrum & Naibaho \(2026\)](#). These datasets were harmonized into comparable composite indices of perceived quality, as the stimulus, and consumer response, and a moderated regression model was then tested with industry sector as a formal moderator.

This empirical gap is compounded by a methodological one. Formally, testing whether industry moderates an individual-level relationship is a cross-level interaction hypothesis, in which a higher-level (Level 2) categorical variable is hypothesized to moderate a lower-level (Level 1) relationship ([Rousseau, 1985](#)). Such hypotheses are conventionally tested through hierarchical linear modeling (HLM), which performs well when researchers can sample from a large population of higher-level units (e.g., dozens of firms, branches, or countries) but yields biased variance-component estimates when the number of higher-level units is small; simulation-based guidelines commonly recommend a minimum of roughly 30 to 50 Level-2 units ([Maas & Hox, 2005](#); [McNeish & Kelley, 2019](#)). Comparative studies spanning only a handful of industries or business units, a common situation in applied marketing and management research, therefore face a practical dilemma: a random-effects multilevel model is statistically unreliable, yet treating the higher-level category as a mere control variable forfeits the opportunity to test it as a theoretically motivated moderator. This study addresses that dilemma by using a fixed-effects, dummy-coded moderation design suited to a small, fixed, and theoretically meaningful set of higher-level units ([McNeish & Kelley, 2019](#)). Accordingly, two research questions guide this study:

RQ₁: Does perceived quality, as a stimulus, significantly predict consumer response across markedly different service and product contexts?

RQ₂: Does the strength of this relationship differ significantly across industry sectors?

This study makes three contributions. First, it provides a rare empirical test of whether the quality-response relationship differs across sectors, rather than assuming generalizability by default.

Second, it shows how a fixed-effects, dummy-coded moderation design can test sector as a moderator when only a few purposively selected sectors are available, a common situation when comparing industries, business units, or markets. Third, it demonstrates a composite-index harmonization procedure that allows heterogeneous, independently designed survey instruments to be combined into one comparative analytical framework without requiring item-level equivalence, and offers practical implications for organizations managing multiple, substantively different business units under a single customer-experience strategy ([Aguinis et al., 2013](#)).

2) Literature Review and Hypothesis Development

2.1. Perceived Quality as a Stimulus and Consumer Response

The expectation-disconfirmation model of satisfaction developed by [Oliver \(1980\)](#) serves as the primary theoretical anchor for this study. The model posits a direct relationship that this study tests: consumers evaluate an offering's performance, and this evaluation shapes downstream affective and behavioral outcomes such as satisfaction, trust, and purchase intention. The SERVQUAL framework developed by [Parasuraman et al. \(1988\)](#) operationalized the antecedent performance side of this model through multiple quality dimensions which are tangibles, reliability, responsiveness, assurance, and empathy. This framework has since been adapted across an enormous range of service contexts. The Stimulus-Organism-Response paradigm ([Mehrabian & Russell, 1974](#)) offers a complementary, broader psychological rationale for why such a relationship should exist: external stimuli are theorized to be internally processed by the consumer (the organism) before manifesting as a response. Because the present study measures perceived quality as a stimulus and consumer response directly but does not separately measure the intervening organismic state, it tests the S-O-R-implied direct relationship between stimulus and response rather than the full three-stage mediation chain; this scope is stated explicitly here rather than assumed, and is revisited as a limitation in the Discussion section.

In the present study, perceived quality is conceptualized as a general, context-adapted construct that captures the multidimensional cues consumers evaluate when judging an offering. These cues take different forms across contexts: service-quality dimensions in financial services, source-credibility and disclosure cues in the perfume industry, and tangible product and environmental attributes in the restaurant sector. Consumer response, in turn, refers to the corresponding downstream evaluative or behavioral outcome, namely satisfaction, trust, or purchase intention, depending on the context. Consistent with expectation-disconfirmation theory, and with the broader S-O-R logic underlying it, we hypothesize:

H₁: Perceived quality is positively associated with consumer response

2.2. Context-Specific Antecedents Across the Three Sectors

In the credit life insurance context, perceived quality is commonly decomposed into dimensions such as assurance, competence, tangibles, corporate image, and technology-enabled service delivery, consistent with the SERVQUAL tradition ([Parasuraman et al., 1988](#)). The six-dimension structure adopted here (assurance, personalized financial planning, competence, corporate image, tangibles, and technology) closely follows the confirmatory factor-analytic instrument developed by [Siddiqui & Sharma \(2010\)](#) for the life insurance sector. In this instrument, the personalized financial planning dimension captures policyholders' need for flexible product solutions adapted to their life stage, and the quality dimensions collectively were shown to drive satisfaction with agents, functional services, and the company.

This structure is further supported by bancassurance-specific evidence. In the Indonesian market, service quality, together with consumer perception and customer satisfaction, has been shown to significantly predict repurchase intention for bank-distributed insurance products ([Hartono et al., 2023](#)). A comparable second-order model, in which satisfaction with agents, the company, and functional services jointly predicts overall bancassurance satisfaction, has also been validated in another emerging-economy banking context ([Acharya et al., 2025](#)). Together, these findings lend cross-market support to the dimensional structure and to its relevance for the credit-linked, advisory nature of the product examined here. Evidence from life insurance markets likewise shows that service quality positively drives customer satisfaction, which in turn fosters loyalty ([Ismail et al., 2021](#)). Direct evidence from the Indonesian credit life insurance market shows that performance-based (SERVPERF) service-quality perceptions explain 68.5% of the variance in customer satisfaction, with technology and personalized financial planning exerting the strongest effects, and frames this relationship explicitly as a stimulus-response process ([Louhenapessy & Naibaho, 2026](#)).

In the perfume industry, where consumer perceptions were shaped by influencer-endorsed marketing content, source credibility theory ([Ohanian, 1990](#)) identifies expertise, trustworthiness,

and attractiveness as key drivers of an endorser's persuasive power, and a recent meta-analysis confirms source credibility as the strongest theoretical explanation of influencer impact on consumer attitudes and purchase intention ([Han & Balabanis, 2024](#)). In addition, congruence between the endorser's lifestyle and the endorsed brand's image is theorized to strengthen perceived authenticity and has been shown to raise purchase and recommendation intentions ([Belanche et al., 2021](#)). Sponsorship disclosure, defined as the explicit labeling of content as a paid partnership, has been shown to act as a double-edged sword. It can signal transparency, which may build trust, while simultaneously signaling commercial intent, which may undermine perceived authenticity and organic credibility ([Karagür et al., 2022](#)). In this study, the perfume-sector perceived quality composite combines congruence-authenticity and disclosure-related items, while the consumer response composite combines trust in the influencer and purchase intention (labeled purchase decision in the original study). In the Indonesian local perfume market, [Tan et al. \(2026\)](#) showed that perceived influencer authenticity, defined as lifestyle fit and genuineness, strongly predicted consumer trust ($B = .654$), which in turn predicted purchase decisions ($B = .705$), whereas sponsorship transparency had no significant effect on trust ($B = .091$, $p = .141$). The lack of a transparency effect is consistent with the double-edged nature of disclosure, as its trust-building and credibility-undermining effects may offset each other.

In the restaurant context, dining satisfaction has traditionally been modeled as a function of food quality, service quality, price fairness, and the physical environment. The service-quality dimension draws on the DINESERV framework, a restaurant-specific adaptation of SERVQUAL covering tangibles, reliability, responsiveness, assurance, and empathy, which remains a widely used instrument for capturing diners' service expectations ([Stevens et al., 1995](#)). The physical-environment dimension is grounded in servicescape theory, which conceptualizes the built environment as an active influence on customer and employee responses to a service encounter rather than a mere backdrop to it ([Bitner, 1992](#)). Empirically, food quality, service quality, price fairness, and the physical environment have each been shown to exert a significant positive effect on customer satisfaction in restaurant settings ([Hanaysha, 2016](#); [Rajput & Gahfoor, 2020](#); [Zhong & Moon, 2020](#)). More recently, a study of a local restaurant in Ubud, Bali, confirmed that these four dimensions each significantly predicted customer satisfaction and, together with the interaction between food quality and culinary orientation, explained 56.3% of its variance, with service quality emerging as the strongest predictor ([Ningrum & Naibaho, 2026](#)). Together, these findings support the inclusion of all four dimensions in the restaurant-sector perceived quality index used in this study.

2.3. Industry Sector as a Boundary Condition

Although the specific content of perceived quality necessarily differs across the three sectors (financial service attributes, source-credibility cues, and tangible product and environmental attributes, respectively), expectation-disconfirmation theory ([Oliver, 1980](#)) proposes a domain-general cognitive-evaluative mechanism, which would predict that the strength of the quality-response relationship should generalize across contexts. An opposing, contingency-based view instead predicts that industry characteristics moderate this relationship's strength. Consumer involvement theory ([Zaichkowsky, 1985](#)) offers the clearest basis for this opposing prediction: purchase decisions that are more personally relevant, risky, or effortful elicit deeper, more elaborated evaluation, which could strengthen or otherwise alter how quality perceptions translate into response. For instance, a high-involvement, high-risk purchase such as life insurance might be expected to show a different quality-response dynamic than a low-involvement, high-frequency purchase such as dining out, or a parasocial, source-based context such as influencer marketing. Because theory offers competing predictions on the direction and existence of such a boundary condition, we test sector as a formal moderator rather than assuming a particular outcome.

Evidence on boundary conditions within the sector-level studies is itself mixed. In the restaurant context, an individual-level characteristic, culinary orientation, significantly strengthened the link between food quality and customer satisfaction ($B = .133$, $p = .035$) ([Ningrum & Naibaho, 2026](#)), whereas in the perfume context, influencer category (nano, micro, macro, and mega) did not moderate the authenticity-trust or transparency-trust paths ([Tan et al., 2026](#)). Whether a higher-level, context-defining factor such as industry sector moderates the quality-response relationship therefore remains an open empirical question:

H₂: The strength of the positive relationship between perceived quality and consumer response differs significantly across industry sectors (insurance, perfume, restaurant).

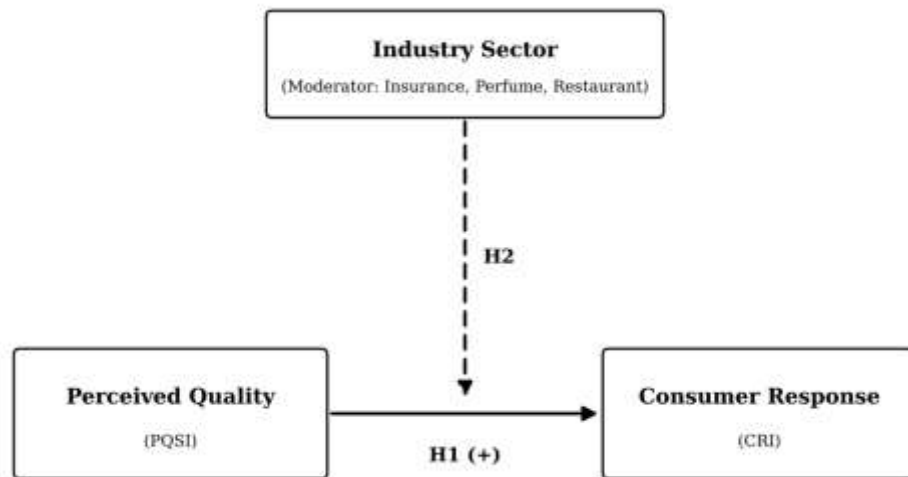


Figure 1. Conceptual Model: Perceived Quality Stimulus Index (PQSI) and Consumer Response Index (CRI)

Source: Developed by the authors (2026)

3) Research Method

3.1. Research Design

This study adopts a quantitative, cross-sector comparative design using harmonized data from three independently collected cross-sectional surveys, each originally designed to measure consumer perceptions of perceived quality and consumer response within a single sector. These three surveys were originally conducted for separate sector-level studies ([Louhenapessy & Naibaho, 2026](#); [Ningrum & Naibaho, 2026](#); [Tan et al., 2026](#)). The present study re-analyzes their base data to address a new cross-sector research question that was not examined in those studies.

3.2. Population and Sample

The pooled sample combines three sub-samples collected via non-probability (purposive or convenience) sampling appropriate to each sub-study's original population, summarized in Table 1.

Table 1. Sample Composition by Sector

Sector	Target population	N collected	N valid (after cleaning)
Credit life insurance	Active credit life insurance customers	159	159
Perfume industry	Indonesian residents aged 18-35 who had purchased or used SAFF & Co. products and were exposed to influencer reviews on social media	468	402
Restaurant	Patrons of a local restaurant in Ubud, Bali (local residents and domestic or international tourists)	213	211
Total (pooled)	—	840	772

Source: Processed data, by the authors (2026)

In the perfume sub-sample, 15 respondents who reported no exposure to influencer perfume reviews (and therefore did not complete the core items) and 51 respondents who did not meet the age, residence, or product-use screening criteria were excluded, leaving 402 valid responses. In the restaurant sub-sample, the dataset available for this re-analysis contained 211 of the 213 responses analyzed in the original study, as two responses had been removed during the original data cleaning because of uniform response patterns. No exclusions were required in the insurance sub-sample. For comparison, the original studies reported final samples of 159 (insurance), 224 (perfume, after an additional manipulation check of influencer category that was not applied here), and 213 (restaurant) respondents ([Louhenapessy & Naibaho, 2026](#); [Ningrum & Naibaho, 2026](#); [Tan et al., 2026](#)).

3.3. Data Harmonization Procedure

Because the three original instruments differ in item wording and item count, raw items were not pooled directly. Instead, items were first grouped conceptually into two cross-context categories: (a)

perceived quality attributes and (b) consumer response, following the theoretical framework in the literature review. For each respondent, a composite score was computed as the mean of all items within each category, yielding two 1-5 metric variables comparable across sectors: the Perceived Quality Stimulus Index (PQSI) and the Consumer Response Index (CRI). Industry sector such as insurance, perfume, and restaurant was retained as a categorical variable to test generalization across contexts.

3.4. Operationalization of Variables

Table 2 summarizes how the source constructs of each sub-study were mapped onto the two harmonized indices.

Table 2. Operationalization of the Perceived Quality Stimulus Index and Consumer Response Index by Sector

Sector	PQSI - Source Constructs (item n)	CRI - Source Constructs (item n)
Insurance	Assurance, Personalized Financial Planning, Competence, Tangibles, Corporate Image, Technology (23 items)	Customer Satisfaction (4 items)
Perfume industry	Influencer-brand congruence/authenticity, Sponsorship disclosure (7 items)	Trust in influencer, Purchase intention (6 items)
Restaurant	Food quality, Service quality, Price fairness, Physical environment (20 items)	Customer satisfaction (5 items)

Source: Compiled by the authors, 2026

All source items were measured on 5-point Likert scales (1 = strongly disagree, 5 = strongly agree), placing PQSI and CRI on a directly comparable metric range across sectors.

3.5. Data Analysis Technique

Data were analyzed in Python using pandas for data management and index construction, SciPy for reliability, descriptive, and bivariate analyses, and statsmodels for regression estimation. The analysis proceeded in six steps. First, internal-consistency reliability of the Perceived Quality Stimulus Index (PQSI) and the Consumer Response Index (CRI) was assessed within each sector using Cronbach's alpha. Second, means and standard deviations of both indices were computed by sector. Third, mean-level differences in PQSI and CRI across sectors were tested with one-way ANOVA; because Levene's tests indicated unequal variances, Welch's ANOVA with Games-Howell post hoc comparisons was used. Fourth, Pearson correlations between PQSI and CRI were computed for each sector and for the pooled sample. Fifth, a two-step hierarchical moderated regression with heteroscedasticity-robust (HC3) standard errors was estimated. Model 1 included mean-centered PQSI and the sector dummies; Model 2 added the interaction terms, as follows:

$$CRI = b_0 + b_1(PQSI) + b_2(D_Perfume) + b_3(D_Restaurant) + b_4(PQSI \times D_Perfume) + b_5(PQSI \times D_Restaurant) + e \quad (1)$$

Insurance serves as the reference sector and PQSI was mean-centered prior to forming the interaction terms. H1 is tested by the significance of the PQSI coefficient in Model 1, which represents the common slope across sectors, and H2 by the joint significance of the interaction terms (b_4 and b_5) in Model 2, assessed through a robust (HC3) Wald F-test; the change in R^2 between the two models is also reported. Finally, simple-slope analysis was performed to estimate the magnitude and significance of the PQSI-CRI relationship within each sector. As a robustness check, the hierarchical regression was re-estimated after excluding respondents who gave identical answers to all items (uniform response patterns).

Because industry sector is a categorical variable that is constant within each sub-sample, the model in Equation (1) tests whether the individual-level relationship between PQSI and CRI differs across sectors. Such cross-level moderation is often estimated using hierarchical linear modeling (HLM) with random intercepts and slopes. However, reliable estimation of random-effects variance components requires a considerably larger number of higher-level units than are available here; simulation evidence suggests that approximately 30 to 50 groups are needed to avoid biased standard errors for these components (Maas & Hox, 2005). With only three sectors, each purposively selected rather than randomly drawn from a larger population of sectors, a random-effects specification would be neither statistically reliable nor conceptually appropriate. Fixed-effects specifications are recommended when clusters are few and deliberately selected, as they impose no distributional assumptions on the higher-level units (McNeish & Kelley, 2019). This study therefore uses a dummy-coded moderated regression, which is equivalent to estimating a separate intercept and slope for each sector while pooling the residual variance across sectors. The use of HC3 robust standard errors accounts for possible differences in residual variance across sectors.

4) Results and Discussion

a) Analysis Results

4.1.1. Sample Characteristics

After data cleaning, the pooled sample comprised 772 valid respondents: 159 from the insurance sector (20.6%), 402 from the perfume sector (52.1%), and 211 from the restaurant sector (27.3%).

4.1.2. Reliability

Table 3 reports the internal-consistency reliability (Cronbach's α) of PQSI and CRI for each sector.

Table 3. Cronbach's Alpha for PQSI and CRI by Sector

Sector	Index	Items	Cronbach's α
Insurance	PQSI	23	.954
Insurance	CRI	4	.919
Perfume industry	PQSI	7	.787
Perfume industry	CRI	6	.917
Restaurant	PQSI	20	.847
Restaurant	CRI	5	.702

Source: Processed data, 2026

All alpha coefficients exceed the conventional .70 threshold, supporting the internal-consistency reliability of the composite indices within each sector.

4.1.3. Descriptive Statistics and Mean-Level Differences

Table 4. Descriptive Statistics for PQSI and CRI by Sector

Sector	PQSI M	PQSI SD	CRI M	CRI SD
Insurance	3.757	0.647	3.791	0.754
Perfume industry	3.976	0.681	4.037	0.835
Restaurant	4.629	0.274	4.663	0.342

Source: Processed data, 2026

Levene's tests indicated unequal variances across sectors for both PQSI, $F(2, 769) = 44.17$, $p < .001$, and CRI, $F(2, 769) = 35.78$, $p < .001$; Welch's ANOVA was therefore used. Mean levels differed significantly across sectors for both PQSI, Welch's $F(2, 370.96) = 229.81$, $p < .001$, and CRI, Welch's $F(2, 376.16) = 150.06$, $p < .001$. Games-Howell post hoc comparisons showed that all pairwise differences were significant ($p \leq .002$), with the restaurant sector scoring highest on both indices, followed by perfume and insurance. The restaurant sector also showed the least variable scores, with 42.2% of restaurant respondents giving the maximum score on every CRI item, compared with 19.2% in the perfume sector and 11.9% in the insurance sector.

4.1.4. Correlation

Table 5 reports the bivariate association between PQSI and CRI within each sector and in the pooled sample.

Table 5. Pearson Correlation between PQSI and CRI, by Sector and Pooled

Sector	r	p	n
Insurance	.818	< .001	159
Perfume industry	.723	< .001	402
Restaurant	.609	< .001	211
Pooled	.788	< .001	772

Source: Processed data, 2026

4.1.5. Moderated Regression

Table 6 presents the hierarchical moderated regression: Model 1 includes mean-centered PQSI and the sector dummies, and Model 2 adds the PQSI $\times$ sector interaction terms, with insurance as the reference sector.

Table 6. Hierarchical Moderated Regression of CRI on PQSI, Sector, and Their Interaction (Reference Sector = Insurance; HC3 Robust Standard Errors)

Predictor	b	SE	t	p
Model 1 (main effects)				
Intercept	4.107	.036	114.79	< .001
PQSI (centered)	.896	.036	25.15	< .001
D_Perfume	.050	.047	1.06	.287
D_Restaurant	.090	.049	1.83	.067
Model 2 (with interactions)				
Intercept	4.127	.036	115.72	< .001
PQSI (centered)	.953	.060	15.97	< .001
D_Perfume	.028	.045	0.63	.531
D_Restaurant	.140	.062	2.26	.024
PQSI × D_Perfume	-.066	.076	-0.88	.381
PQSI × D_Restaurant	-.193	.094	-2.05	.041

Note. N = 772. PQSI was mean-centered; standard errors are HC3 robust. Model 1: $R^2 = .623$, adjusted $R^2 = .621$. Model 2: $R^2 = .624$, adjusted $R^2 = .621$; $\Delta R^2 = .001$. Robust joint test of the two interaction terms: $F(2, 766) = 2.11$, $p = .122$.

Source: Processed data, 2026

In Model 1, PQSI was strongly and positively associated with CRI after controlling for sector ($b = .896$, $SE = .036$, $p < .001$), and the model explained 62.3% of the variance in CRI, supporting H1. Adding the interaction terms in Model 2 increased the explained variance by only .1 percentage point, and the robust joint test of the two interaction terms was not significant, $F(2, 766) = 2.11$, $p = .122$; therefore, H2 was not supported.

At the level of individual contrasts, the PQSI-CRI slope in the perfume sector did not differ from that in the insurance sector ($b = -.066$, $p = .381$), whereas the restaurant slope was significantly weaker than the insurance slope ($b = -.193$, $p = .041$). The restaurant and perfume slopes did not differ significantly (difference = $-.127$, $SE = .086$, $p = .143$).

4.1.6. Simple-Slope Analysis

The simple slopes in Table 7 show the magnitude of the PQSI-CRI relationship within each sector. PQSI was a strong and significant predictor of CRI within every sector, although the slope was smallest in the restaurant sector.

Table 7. Simple Slopes of PQSI on CRI by Sector (HC3 Robust Standard Errors)

Sector	b	SE	t	p	95% CI
Insurance	.953	.060	15.97	< .001	[.836, 1.070]
Perfume industry	.887	.047	19.07	< .001	[.796, .978]
Restaurant	.760	.073	10.43	< .001	[.617, .903]

Source: Processed data, 2026

4.1.7. Sensitivity Analysis

Because uniform response patterns were common, particularly in the restaurant sample, the hierarchical regression was re-estimated after excluding all respondents who gave identical answers across all items (insurance: 8; perfume: 42; restaurant: 46; remaining N = 676). PQSI remained strongly and positively associated with CRI ($b = .883$, $SE = .042$, $p < .001$; $R^2 = .564$). However, the robust joint test of the interaction terms became significant, $F(2, 670) = 3.43$, $p = .033$.

This result was driven by a weaker restaurant slope relative to insurance ($b = -.367$, $SE = .140$, $p = .009$), whereas the perfume contrast remained non-significant ($b = -.083$, $SE = .085$, $p = .331$). Most of the excluded restaurant respondents (44 of 46) gave the maximum score on every item. Consequently, the support for H2 varies depending on whether uniform high ratings are retained or excluded.

4.1.8. Hypothesis Testing Summary

Table 8. Summary of Hypothesis Tests

Hypothesis	Result
H ₁ : PQSI is positively associated with CRI	Supported ($b = .896$, $p < .001$)
H ₂ : The PQSI-CRI relationship differs significantly across sectors	Not supported overall ($F[2, 766] = 2.11$, $p = .122$); restaurant slope weaker than insurance ($p = .041$); overall interaction significant in sensitivity analysis ($p = .033$)

Source: Processed data, 2026

b) Discussion

The results provide strong support for H1 that perceived quality is a robust and substantial predictor of consumer response, and the pooled model explained 62.3% of the variance, a proportion that is large for cross-sector consumer-behavior research, and notable given that the perceived quality construct was operationalized at a coarse, composite level spanning three substantively different consumption contexts. This finding is consistent with, and extends, the expectation-disconfirmation paradigm (Oliver, 1980) and the SERVQUAL tradition ([Parasuraman et al., 1988](#)) beyond their typical single-industry applications.

The non-significant joint test of the interaction terms ($F[2, 766] = 2.11$, $p = .122$), together with the negligible change in explained variance when the interaction block is added ($\Delta R^2 = .001$), indicates that H2 is not supported: overall, the strength of the perceived quality-consumer response relationship does not differ significantly across the insurance, perfume, and restaurant sectors. This is arguably the study's central theoretical contribution, as it lends empirical support to the domain-general logic of the S-O-R paradigm (Mehrabian & Russell, 1974). The one exception was a significantly weaker slope in the restaurant sector relative to insurance ($b = -.193$, $p = .041$). Because 42.2% of restaurant respondents gave the maximum possible satisfaction score and the restaurant CRI had the lowest reliability ($\alpha = .702$), this difference may partly reflect ceiling effects and measurement attenuation. However, the sensitivity analysis showed that when respondents with uniform response patterns were excluded, the overall interaction became significant ($p = .033$) and the restaurant slope became weaker still ($b = .585$ compared with $.952$ for insurance). The restaurant difference therefore does not appear to be solely a measurement artifact, and the absence of overall moderation should be interpreted with caution (Mehrabian & Russell, 1974). Despite operationalizing perceived quality through entirely different item content (service-quality dimensions for a high-involvement financial product, source-credibility and disclosure cues for a parasocial marketing context, and tangible product and environmental attributes for a low-involvement dining experience), the underlying cognitive-evaluative mechanism linking quality perception to consumer response appears to operate similarly across contexts. This finding runs somewhat counter to a strict contingency view, which would predict that involvement or perceived risk moderates this relationship's strength.

Methodologically, the fixed-effects, dummy-coded moderation design offers a transparent alternative for comparative studies that, like this one, involve only a small number of purposively selected sectors, business units, or markets, a situation in which random-effects multilevel models are statistically unreliable ([Aguinis et al., 2013](#); [Maas & Hox, 2005](#); [McNeish & Kelley, 2019](#); [Rousseau, 1985](#)).

It is important to distinguish this broadly similar relationship strength from the mean-level differences observed earlier. The restaurant sector showed significantly higher and less variable PQSI and CRI scores than the other two sectors, a pattern that may reflect genuinely higher satisfaction in that sample, a ceiling effect, or social-desirability tendencies in in-person or intercept-style data collection; it does not by itself contradict the finding of no overall moderation, although compressed score ranges can attenuate within-sector slopes, as discussed below. Prior cross-industry satisfaction research conducted by [Gilbert & Veloutsou \(2006\)](#) has similarly found that satisfaction levels vary by industry but did not formally test whether the quality-satisfaction relationship's strength itself is moderated by industry, which is the specific gap this study addresses. The original restaurant study likewise reported very high mean scores, between 4.47 and 4.62 on a five-point scale, for all quality dimensions and for satisfaction, as reported by [Ningrum & Naibaho \(2026\)](#); this pattern is consistent with a ceiling-effect interpretation.

The sector-level slopes are also consistent with prior single-industry evidence. In the insurance sub-sample, the steep PQSI-CRI slope ($b = .953$; $r = .818$) mirrors studies showing that

service quality is a primary driver of policyholder satisfaction and loyalty ([Ismail et al., 2021](#); [Siddiqui & Sharma, 2010](#)) and of satisfaction and repurchase intention for bank-distributed insurance products ([Acharya et al., 2025](#); [Hartono et al., 2023](#)). In the perfume sub-sample, the strong association between congruence and disclosure cues and the trust-purchase-intention composite ($b = .887$; $r = .723$) accords with meta-analytic evidence that source credibility and congruity are the most powerful explanations of influencer impact ([Han & Balabanis, 2024](#)), and with evidence on influencer-product congruence ([Belanche et al., 2021](#)) and sponsorship-disclosure effects ([Karagür et al., 2022](#)). In the restaurant sub-sample, the positive slope ($b = .760$; $r = .609$) is consistent with evidence that food quality, service quality, price fairness, and the physical environment jointly shape diner satisfaction ([Hanaysha, 2016](#); [Rajput & Gahfoor, 2020](#); [Zhong & Moon, 2020](#)).

The pooled results also align closely with the original single-sector analyses from which the harmonized indices were derived. Each sub-study, using its own constructs and PLS-SEM estimation, found that quality-related stimuli explained a broadly similar share of variance in the corresponding outcome: 68.5% of customer satisfaction in credit life insurance ([Louhenapessy & Naibaho, 2026](#)) 55.0% of consumer trust in the perfume context ([Tan et al., 2026](#)), and 56.3% of customer satisfaction in the restaurant context, in a model that also included a food quality $\times$ culinary orientation interaction ([Ningrum & Naibaho, 2026](#)). The convergence of these magnitudes across separately specified models provides triangulating support for the broadly similar slopes observed in the present fixed-effects test.

The sub-studies also help explain why the contingency prediction derived from involvement theory was not borne out. Although life insurance is usually regarded as a high-involvement purchase, credit life insurance is embedded in a bank loan and is often perceived by customers as an administrative component of the credit process, which may weaken the elaborated evaluation that involvement theory anticipates ([Louhenapessy & Naibaho, 2026](#)). Conversely, perfume is characterized as a high-involvement, emotionally involving, experiential product whose evaluation depends heavily on the perceived authenticity of the recommending source ([Tan et al., 2026](#)), and dining in an international tourist destination is likewise an experiential consumption episode in which first impressions of service carry considerable weight ([Ningrum & Naibaho, 2026](#)). Effective involvement may therefore be more similar across the three sectors than their nominal product categories suggest, which is consistent with the absence of overall moderation. Moreover, the moderator that proved significant in the sub-studies operated at the individual level, namely culinary orientation in the restaurant setting ([Ningrum & Naibaho, 2026](#)), whereas a context-level grouping, influencer category, was not significant ([Tan et al., 2026](#)). Together with the present results, this pattern suggests that boundary conditions of the quality-response link are more likely to be found in consumer characteristics than in industry or category membership.

At the cross-industry level, meta-analytic syntheses report that the links between satisfaction and its consequences vary with industry and measurement context ([Mittal et al., 2023](#); [Otto et al., 2020](#)), and the influencer literature similarly reports heterogeneous effects across product categories and platforms ([Han & Balabanis, 2024](#); [Yrontis et al., 2021](#)). The present results suggest that such heterogeneity may lie more in mean levels and in the downstream consequences of satisfaction than in the quality-to-response link itself: once perceived quality is measured with context-appropriate cues, its translation into consumer response appears comparatively stable across sectors. The smaller restaurant slope, the only contrast that differed significantly from insurance, should also be read in light of that sample's restricted score range (PQSI SD = 0.274; 42.2% of respondents at the CRI maximum) and the lower reliability of its CRI ($\alpha = .702$), because ceiling effects and measurement error attenuate correlations and regression slopes. Because the restaurant slope became weaker rather than stronger once uniform responses were excluded, the lower restaurant slope may also reflect a genuinely weaker link between quality perceptions and satisfaction in this low-involvement, high-satisfaction dining context, which warrants further investigation.

5) Concluding Remarks and Recommendation

This study set out to test whether the well-established relationship between perceived quality and consumer response generalizes across markedly different service and product contexts. Using harmonized data from three independently collected samples ($N = 772$ pooled) spanning credit life insurance, the perfume industry, and restaurant services, the results show that perceived quality is a strong predictor of consumer response in all three sectors, with no significant overall moderation by sector in the main analysis, even though mean levels of both constructs differ significantly by sector. A sensitivity analysis excluding uniform responses, however, revealed a significantly weaker

relationship in the restaurant sector, indicating that the generalizability of the quality-response link should be interpreted with caution.

The findings extend the S-O-R paradigm ([Mehrabian & Russell, 1974](#)) and expectation-disconfirmation theory ([Oliver, 1980](#)) by providing formally tested evidence that the quality-response relationship does not differ significantly overall across industries in the main analysis, rather than relying on the common but rarely tested assumption that quality-based frameworks such as SERVQUAL ([Parasuraman et al., 1988](#)) generalize beyond the single industry in which they are typically validated. The study also illustrates a pragmatic composite-index methodology for testing such generalizability using independently designed, non-identical survey instruments, a methodological contribution relevant to comparative and secondary-data consumer research more broadly. It also shows how industry sector can be tested as a moderator through a fixed-effects, dummy-coded design when only a small number of theoretically meaningful sectors are available for comparison ([Maas & Hox, 2005](#); [McNeish & Kelley, 2019](#)).

For managers overseeing multiple, substantively different business units or product lines, the findings suggest that a unified customer-experience philosophy, investing in perceived quality as a stimulus broadly defined, is likely to yield broadly comparable returns in consumer response across otherwise very different offerings, supporting the transferability of customer-experience management principles across a diversified portfolio. At the same time, the significant mean-level differences across sectors indicate that absolute performance benchmarks (e.g., satisfaction targets) should still be set on a sector-specific basis rather than applied uniformly. Within each sector, the sub-studies indicate where such investment is most productive: digital service technology and personalized financial planning in credit life insurance ([Louhenapessy & Naibaho, 2026](#)), influencer selection based on lifestyle fit and genuineness rather than follower count in perfume marketing ([Tan et al., 2026](#)), and service quality in tourist-area restaurants ([Ningrum & Naibaho, 2026](#)).

Several limitations qualify these conclusions and suggest directions for future research. First, the Consumer Response Index is operationalized differently across sectors – customer satisfaction for insurance and restaurant, and a composite of trust and purchase intention for the perfume industry – reflecting genuine differences in the original constructs measured; future research could replicate this design using a single, identically worded response measure (e.g., overall satisfaction) collected concurrently across sectors. Moreover, because each sector corresponds to a separate dataset collected with a different instrument and sample, sector differences cannot be fully separated from differences in measurement and sampling across the original studies. Second, the cross-sectional design precludes causal inference, and because predictor and outcome were self-reported by the same respondents at a single point in time, common method variance may have inflated the observed associations ([Podsakoff et al., 2024](#)); longitudinal or experimental designs would strengthen causal claims about the quality-response relationship. Third, the notably low variance in the restaurant sample's scores, with 42.2% of respondents at the CRI maximum, may have affected the restaurant slope; because the conclusion for H2 changed when respondents with uniform response patterns were excluded, this issue warrants further investigation into potential ceiling effects or social-desirability bias in that sub-study's data-collection context. Fourth, sample sizes are unbalanced across sectors (159 vs. 402 vs. 211), which, while accommodated by the regression approach used, may affect the precision of sector-specific estimates; future cross-sector studies could aim for balanced sampling. Fifth, the fixed-effects cross-level design used here fully accounts for between-sector clustering but cannot detect finer-grained clustering within each sector (e.g., respondents nested within a particular insurance branch, influencer account, or restaurant location) because branch/location identifiers were not available in the original datasets; if such within-sector clustering exists, standard errors for the individual-level slope could be modestly understated. Future cross-level studies with a larger number of higher-level units are encouraged to model this more finely using random-effects multilevel modeling ([Maas & Hox, 2005](#)). Sixth, this study tests the S-O-R-implied direct relationship between perceived quality and consumer response but does not measure or test the intervening organismic (cognitive-affective) state that S-O-R theory (Mehrabian & Russell, 1974) positions as the formal mediator between stimulus and response. A construct suited to this role – trust – was available only in the perfume industry sub-study and was combined into the Consumer Response Index rather than modeled as a separate mediator, since no comparable intervening construct was measured in the insurance or restaurant sub-studies. Future research collecting a consistent intervening-state measure across sectors could test the full stimulus-organism-response mediation chain, and examine whether industry sector moderates the mediating mechanism

itself (moderated mediation) rather than only the direct path tested here. Finally, this study tested only industry sector as a boundary condition; future research could examine additional moderators such as purchase involvement, perceived risk, or consumer expertise to further map the boundary conditions of quality-response generalizability.

Statement of Use of Generative AI

During the preparation of this work, the author used ChatGPT to assist in improving clarity and readability of the text. The author reviewed and edited the output and takes full responsibility for the content of the publication.

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