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*Original Research Article*

# Service Quality, Food Quality, and Location: Key Drivers of Customer Satisfaction and Loyalty in Thailand's Fast-Food Restaurants

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**Abstract**

Thailand's fast-food sector is growing rapidly, yet the drivers of customer satisfaction and loyalty remain underexplored within multi-dimensional frameworks. This study examines how service quality, food quality, and location and environment shape customer satisfaction and loyalty, and whether perceived price moderates these relationships, using Expectation-Confirmation Theory. A cross-sectional survey with purposive sampling yielded 300 responses from Thai fast-food consumers. Hypotheses were tested via Partial Least Squares Structural Equation Modeling in SmartPLS 4.1.1.2 with 5,000-resample bootstrapping. Service quality, food quality, and location and environment each significantly predicted customer satisfaction, with food quality as the strongest driver; customer satisfaction strongly predicted customer loyalty. Perceived price moderated none of the relationships, interpreted as a hygiene factor effect: Thailand's institutional price monitoring, inflation-driven price normalisation, and aggregator-enabled pre-visit price transparency suppress active within-visit price evaluation. The study contributes the first simultaneous expectation-confirmation theory test of these drivers in Thailand's fast-food sector, advances a market-specific Expectation-confirmation theory boundary condition, and extends confirmation–loyalty evidence to Southeast Asia.

**Keywords**

service quality, food quality, location and environment, customer satisfaction, customer loyalty

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## 1. Introduction

Fast food in Thailand is no longer a niche market — it has become part of how millions of urban Thais structure their daily routines. The sector surpassed US$5 billion in 2023 and shows no sign of plateauing, with annual growth forecast at 4–5% through 2026 as city populations expand and fewer households cook regularly at home (Euromonitor International, 2024; Krungsri Bank, 2024). International chains including KFC, McDonald's, and Burger King have accelerated their expansion, yet the broader inflationary climate has simultaneously made Thai diners more selective — not necessarily unwilling to spend, but far more attentive to whether a purchase delivers genuine value (Bangkok Post, 2023; PwC, 2024). The competitive question for operators is therefore less about attracting first-time visits and more about retaining customers who now weigh every transaction against easily accessible alternatives.

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Expectation-Confirmation Theory (ECT) (Oliver, 1980) provides the conceptual foundation for this study. The theory proposes that consumers enter each consumption episode with prior expectations; satisfaction is then determined by whether actual performance confirms, exceeds, or falls below those expectations, with downstream implications for loyalty. In restaurant settings, the confirmation process is multi-layered: what gets evaluated is not only the food but also the service encounter and the physical environment (Manhas et al., 2024; Marzo et al., 2002). In the high-frequency fast-food setting, where consumers visit repeatedly and arrive with well-formed expectations, ECT is especially apt — each visit either reinforces or erodes the preference for that outlet.

Empirical research on fast-food satisfaction identifies three performance dimensions as the principal ECT confirmation signals. Service quality (SQ) concerns operational reliability — order accuracy, wait time, and staff professionalism (Ababneh et al., 2022; Parasuraman et al., 1988). Food quality (FQ) addresses the core product: taste consistency, appropriate temperature, and portion accuracy (Namkung & Jang, 2007; Ryu & Han, 2010). Location and environment (LE) capture accessibility and servicescape — cleanliness, layout, and ambient atmosphere (Almohammad et al., 2025; Rathnasiri et al., 2025). A fourth variable, perceived price (PP), has attracted growing research interest as a conditional factor: price fairness may amplify or suppress how strongly SQ, FQ, and LE translate into satisfaction, rather than contributing to it directly (Kim & Moon, 2025; Ryu & Han, 2010; Xia et al., 2004).

Existing empirical work, however, leaves three gaps that this study targets. First, SQ, FQ, and LE are almost always studied in isolation or partial combinations; studies that model all three as simultaneous, theory-grounded confirmation signals within ECT — particularly in developing Asian markets — remain rare (Ababneh et al., 2022; Zhong & Moon, 2020). Practitioners need to know not just whether each driver matters, but which deserves prioritisation when resources are constrained. Second, perceived price has been treated primarily as a direct satisfaction predictor rather than as a moderator of the quality–satisfaction relationship (Kim & Moon, 2025; Tan et al., 2025). Whether price fairness strengthens or buffers how SQ, FQ, and LE translate into satisfaction — the conditional question — remains largely unresolved. Third, ECT-grounded fast-food research is still thin in Southeast Asia. Thailand's collectivist dining culture and acute price sensitivity suggest that the expectation-confirmation dynamics here may differ meaningfully from those documented in Western or East Asian samples (Teangsompong et al., 2024), yet context-specific evidence is sparse.

This study exploits these three gaps through a PLS-SEM analysis of 300 Thai fast-food consumers, integrating SQ, FQ, LE, and PP within a single ECT framework to establish which drivers matter most and under what price conditions they operate. Three objectives guide the work: (1) to examine how SQ, FQ, and LE individually shape customer satisfaction within an ECT framework in Thailand's fast-food sector; (2) to assess how customer satisfaction subsequently drives customer loyalty; and (3) to test whether perceived price moderates the relationship between each quality dimension and customer satisfaction. These objectives correspond to three research questions: RQ1: To what extent do SQ, FQ, and LE shape customer satisfaction in Thailand's fast-food restaurants? RQ2: How does customer satisfaction affect customer loyalty? RQ3: Does perceived price moderate those quality–satisfaction relationships?

The study makes three contributions that are worth being precise about. To the best of our knowledge, this is the first integrated ECT test of SQ, FQ, and LE as simultaneous confirmation signals in Thailand's fast-food sector, establishing their relative explanatory weights rather than treating performance as a unified evaluative signal. The non-significant moderation findings for PP are treated as substantively informative rather than a null result to set aside — they are consistent with the interpretation that, in standardised, price-transparent fast-food markets, price fairness may operate as a pre-visit screening condition rather than a within-visit evaluative amplifier, though this interpretation remains provisional given acknowledged measurement limitations in the PP scale. Taken together, the results extend ECT-grounded fast-food evidence into a Southeast Asian market where the confirmation–loyalty pathway has been largely assumed rather than directly tested with this framework.

The paper proceeds as follows. Section 2 develops the theoretical framework and hypotheses. Section 3 describes the research design and analytical approach. Section 4 presents measurement and structural results. Section 5 discusses the findings. Section 6 presents the theoretical and practical implications of this study, and Section 7 concludes with contributions, limitations, and future research directions.

## 2. Literature Review

### *2.1. Theoretical Framework: The Expectation-Confirmation Theory (ECT)*

Oliver (1980) developed ECT around a consequential pattern: consumers evaluate consumption against prior expectations, and the gap between what was anticipated and what was delivered determines satisfaction. Satisfaction arises from confirmation; dissatisfaction from disconfirmation; loyalty from accumulated confirmation over time. The theory was

originally formulated for single-episode, tangible product consumption — a context that differs meaningfully from the habitual, multi-cue fast-food setting examined here.

This study does not simply apply ECT to fast food. It uses the Thai fast-food context to generate findings that motivate three specific theoretical developments beyond existing applications. The first concerns performance construct differentiation. ECT treats performance as a unified confirmation signal. In multi-cue service settings, however, operational service, core product quality, and physical environment may generate confirmation with different intensity depending on cultural context and consumption habit. Prior restaurant ECT research has largely tested these cues individually or as composites (Ababneh et al., 2022; Mendocilla et al., 2026). Modelling SQ, FQ, and LE simultaneously establishes their relative confirmation weights — suggesting ECT's performance dimension may be culturally stratified rather than uniform.

The second concerns ECT's value-confirmation mechanism. Prior ECT applications treat price fairness as an active within-visit confirmation variable (Bhattacherjee, 2001; Ryu & Han, 2010). In a price-transparent, high-frequency context, this study finds evidence that price fairness functions instead as a pre-visit eligibility threshold — resolved before the consumption episode begins. Drawing on adaptation-level theory (Helson, 1964) and equity theory (Xia et al., 2004), this is consistent with a market-maturity boundary condition on ECT's value-confirmation proposition.

The third concerns ECT's transferability to habitual consumption contexts. ECT was developed for single-episode Western settings. The unusually large CS→CL effect observed here ($f^2 = 1.319$) suggests that in high-frequency habitual contexts, accumulated confirmation may produce a stronger loyalty mechanism than ECT studies in Western or occasional-consumption settings have documented — a preliminary finding that invites replication before generalisable conclusions can be drawn.

## 2.2. Hypothesis Development

### 2.2.1. Service Quality (SQ) and Customer Satisfaction (CS)

In fast-food settings, SQ is less about warmth or personalisation — those things matter more in fine dining — and more about whether the operational basics are consistently delivered: orders taken accurately, food handed over promptly, staff conducting themselves professionally (Ababneh et al., 2022; Slack et al., 2021). When those fundamentals hold, customers leave with their operational service expectations confirmed. When they do not — a long queue, a wrong item, a dismissive employee — the expectation-performance gap produces disconfirmation and pulls satisfaction down (Zhong & Moon, 2020).

The ECT framing for SQ is straightforward in which service performance is compared against prior expectations, and the direction of that comparison determines satisfaction. Evidence from recent fast-food studies supports this consistently. Ababneh et al. (2022) found SQ to be a significant satisfaction driver in UAE fast-food restaurants even after accounting for food and environmental factors, and Ali-Alsaadi et al. (2025) similarly identified service quality as a reliable antecedent of customer loyalty outcomes in the same regional context. In Thailand's market, where international chains have trained consumers to expect a particular service standard, falling below that standard is noticed and remembered. It is worth noting, however, that the confirmation weight of SQ may vary by consumption habit: where a service script has been reliably delivered across many prior visits, it risks becoming a baseline expectation rather than an active confirmation signal, which could attenuate its relative contribution to satisfaction compared with less habituated performance dimensions (Slack et al., 2021). Whether perceived price further conditions this SQ–CS relationship is examined in Section 2.2.4.

**H1**: Service quality positively affects customer satisfaction.

### 2.2.2. Food Quality (FQ) and Customer Satisfaction

FQ covers the dimensions of the core product that customers form opinions about before the meal arrives and evaluate the moment it does: taste, freshness, temperature, portioning, and presentation (Slack et al., 2021; Zhong & Moon, 2020). In ECT terms, FQ is where the confirmation process is most acute, because food is the primary reason the customer is there and product-quality expectations are the most precisely held. When the meal fails to match what was anticipated — lukewarm when it should be hot, smaller than expected, inconsistent with prior visits — the dissatisfaction is direct and hard for other dimensions to offset (Ababneh et al., 2022).

Zhong and Moon (2020) found FQ to be among the strongest satisfaction predictors in their Chinese fast-food study, a finding that sits squarely within the ECT confirmation logic: the food is the focal object against which expectations are most precisely formed, and deviations in either direction — pleasant surprise or disappointing shortfall — are registered more immediately than equivalent deviations in service or environment. In Thailand, where daily food culture is intensely flavour-conscious and quality expectations for even routine meals are high, FQ expectations brought into fast-food visits are likely to be particularly well-calibrated and sensitive to deviation (Teangsompong et al., 2024). In markets where sensory expectations are this precisely formed, FQ may carry disproportionate confirmation weight relative to service or environmental

dimensions — a possibility that the Thai fast-food context is well positioned to test. Whether perceived price amplifies or attenuates the strength of this FQ–CS relationship is examined in Section 2.2.4.

**H2**: Food quality positively affects customer satisfaction.

#### *2.2.3. Location and Environment (LE) and Customer Satisfaction*

LE encompasses two analytically distinct dimensions. Physical accessibility — proximity to public transport, parking, ease of entry — determines whether reaching the outlet requires more effort than the customer was willing to invest. Servicescape — cleanliness, layout, lighting, ambient atmosphere — determines whether the interior space confirms expectations of a comfortable, hygienically acceptable dining environment (Almohammad et al., 2025; Slack et al., 2021). Both dimensions operate as confirmation signals within ECT, but against slightly different expectation types: accessibility confirms or violates effort expectations, while servicescape confirms or violates ambient and hygiene expectations.

When either dimension falls short of what was anticipated, it can erode overall satisfaction independently of how food and service performed. A cluttered dining area or an awkwardly located outlet creates negative disconfirmation that is hard for good food to entirely compensate (Zhong & Moon, 2020). Almohammad et al. (2025) demonstrated that physical environment factors consistently shape satisfaction and downstream loyalty in restaurant contexts — even when the dining tier and cultural setting differ from fast food, the basic evaluative dynamic holds. In high-traffic fast-food outlets where cleanliness and spatial flow are constantly under pressure from turnover, LE management is an ongoing operational challenge with direct satisfaction consequences. Whether perceived price moderates the strength of this LE–CS relationship is examined in Section 2.2.4.

**H3**: Location and environment positively affect customer satisfaction.

#### *2.2.4. Perceived Price (PP) as a Moderator*

PP, as operationalised in this study, is more precisely characterised as a broad price-related perceptions construct rather than a theoretically pure price-fairness measure. It captures customers' overall evaluative stance toward the price-related aspects of the dining transaction — encompassing fairness judgements about proportionality between price paid and benefits received, perceptions of payment convenience, and value perceptions related to promotional offers. The four items were primarily adapted from Uddin (2019), with additional items drawn from Singh et al. (2022) and Zhong and Moon (2020); the label "Perceived Price" is retained for consistency with the primary source instrument. The moderation hypotheses (H4–H6) are grounded specifically in the fairness component — drawing on transaction utility theory (Thaler, 1985) and equity theory (Kahneman et al., 1986; Xia et al., 2004) — and the implications of this narrower theoretical grounding for the broader operationalisation are acknowledged in Section 3.1 and the limitations section.

A direct antecedent role is theoretically untenable under ECT: it implies price bypasses the confirmation process and independently generates satisfaction, conflicting with ECT's core mechanism whereby satisfaction arises from the performance–expectation gap. A mediating role is equally problematic: the sequence SQ → PP → CS places price evaluation after quality performance, whereas in fast-food settings consumers resolve price before or simultaneously with quality — not after it.

A moderating role is the most defensible position. Thaler's (1985) transaction utility theory holds that price fairness does not determine satisfaction but alters how generously the consumer evaluates what was received — an interpretive frame, not a causal predecessor. Equity theory (Kahneman et al., 1986; Xia et al., 2004) adds that perceived price inequity activates a contrast effect, causing quality to be evaluated more harshly than an objective assessment warrants. Together, both mechanisms place PP on the quality-to-satisfaction conversion rather than contributing to satisfaction independently. Empirical support comes from Ryu and Han (2010), who found perceived price significantly moderated the quality–satisfaction relationship in US quick-casual restaurants, and the same mechanism is hypothesised here in Thailand's price-conscious fast-food market (Krungsri Bank, 2024).

**H4**: Perceived price moderates the relationship between service quality and customer satisfaction.
**H5**: Perceived price moderates the relationship between food quality and customer satisfaction.
**H6**: Perceived price moderates the relationship between location/environment and customer satisfaction.

#### *2.2.5. Customer Satisfaction and Customer Loyalty (CL)*

CL is not unidimensional — it has an attitudinal layer (a preference for the outlet, a willingness to advocate for it) and a behavioural layer (actually returning, actually recommending it) (Ali-Alsaadi et al., 2025; Teangsompong et al., 2024). Within ECT, what bridges satisfaction to both layers is the accumulation of confirmed expectations over repeated visits. A

customer who finds that a particular outlet consistently delivers what they expected gradually stops treating each visit as a fresh decision and develops something closer to a default preference — the cognitive cost of choosing this outlet drops, and the perceived risk of switching to an unfamiliar alternative rises (Ababneh et al., 2022; Zhong & Moon, 2020).

In fast-food specifically, this accumulated-confirmation pathway to loyalty is well evidenced. Zhong and Moon (2020) found satisfaction to be a strong predictor of loyalty in Chinese fast food, and Ali-Alsaadi et al. (2025) found the same in UAE restaurants, with satisfied customers showing lower price sensitivity, higher recommendation rates, and greater resistance to competitor promotions. These findings align with what ECT would predict: loyalty built on confirmed expectations is qualitatively different from loyalty built on inertia or switching costs — it is more robust to price competition and more reliably expressed in both repeat visits and word-of-mouth. In high-frequency habitual settings like Thailand's fast-food market, where confirmed expectations accumulate across dozens of visits, this CS→CL conversion may be stronger than in occasional-consumption contexts — a possibility consistent with the third proposition developed in Section 2.1.

**H7**: Customer satisfaction positively affects customer loyalty. All this study's hypotheses can be seen in Figure 1.

## 3. Methodology

### *3.1. Research Design and Measurement Development*

This study used a cross-sectional survey to examine how SQ, FQ, LE, and PP shape CS and CL in Thailand's fast-food sector. Single-timepoint data collection suited the objective — we were interested in how diners evaluate a recent visit, not in tracking changes over time. All constructs were measured using adapted items from validated hospitality instruments, adjusted to the fast-food context. A seven-point Likert scale (1 = strongly disagree, 7 = strongly agree) was used throughout. Full items and sources are listed in Table 1.

The customer loyalty scale draws on two sources, and the rationale requires explanation. Loyalty has an attitudinal dimension — genuine preference and willingness to recommend — and a behavioural dimension — actual repurchase intent and resistance to switching (Oliver, 1999). A scale capturing only one dimension misses half the construct. The attitudinal items (CL1–CL2) were therefore adapted from Oliver (1999), and the behavioural items (CL3–CL4) from Zhong and Moon (2020), whose fast-food loyalty scale was validated in a Chinese quick-service context comparable to Thailand's. Item overlap was checked and confirmed absent; all loadings exceeded 0.79.

The PP construct requires specific clarification. The four PP items reflect multiple facets: two capture exchange-value fairness (Xia et al., 2004), one captures payment convenience, and one relates to promotional offers (Singh et al., 2022; Zhong & Moon, 2020). This broader operationalisation means the construct represents an overall evaluative stance toward price-

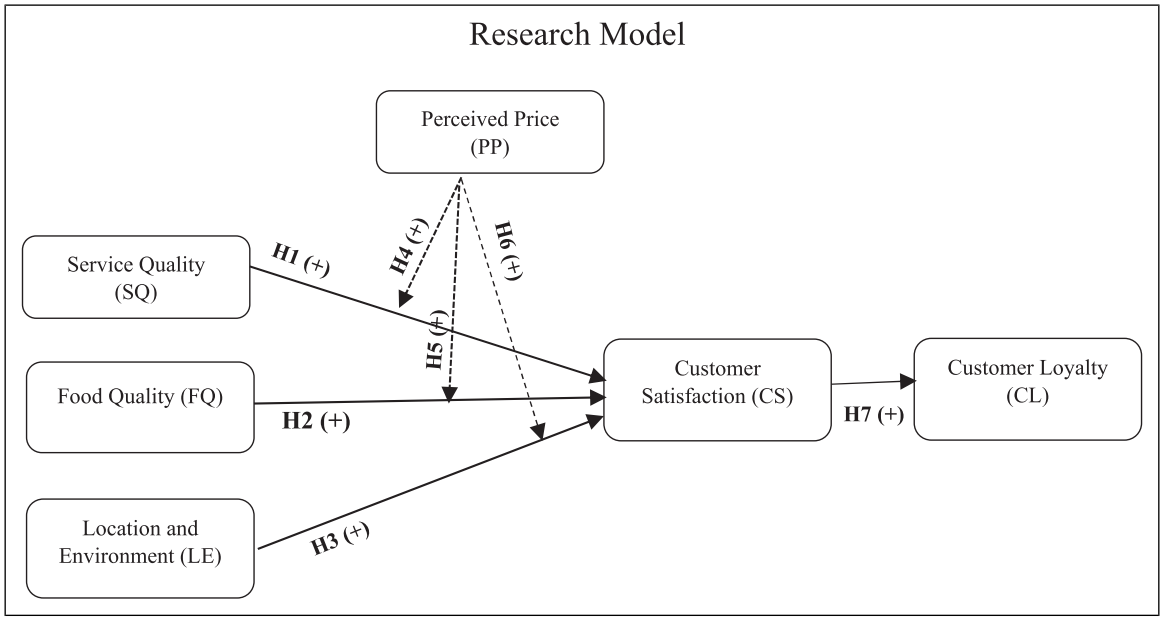



**Figure 1.** Research model

**Table 1.** Summary of Measurement Items

| Variable | Item code | Measurement items | Key references |
|---|---|---|---|
| Perceived Price (PP) | PP1 | 1. Price of this restaurant is competitive | Uddin (2019) |
| | PP2 | 2. The price is reasonable | |
| | PP3 | 3. The payment system is easy and convenient (i.e. cash or card) | |
| | PP4 | 4. Often offers "special offer" or "occasional offer" | |
| Service Quality (SQ) | SQ1 | 1. Staff members are friendly | Zhong and Moon (2020) |
| | SQ2 | 2. Staff members are very helpful | |
| | SQ3 | 3. Staff members serve quickly and promptly. | |
| | SQ4 | 4. I feel comfortable with staff members' service | |
| Food Quality (FQ) | FQ1 | 1. The restaurant offers healthy options | Namkung and Jang (2007) |
| | FQ2 | 2. The restaurant serves tasty food | |
| | FQ3 | 3. The restaurant offers a variety of menu items | |
| | FQ4 | 4. The restaurant offers fresh food | |
| | FQ5 | 5. Food is served at the appropriate temperature | |
| Location and Environment (LE) | LE1 | 1. Car parking arrangement is good | Uddin (2019) |
| | LE2 | 2. This restaurant has a sufficient and comfortable seating arrangement. | |
| | LE3 | 3. Existence of fun spaces for kids and youth in this restaurant. | |
| | LE4 | 4. This restaurant is situated in good locations. | |
| | LE5 | 5. This restaurant is decorated attractively | |
| Customer Satisfaction (CS) | CS1 | 1. I think I have rightly chosen this restaurant. | Uddin (2019) |
| | CS2 | 2. I think this restaurant successfully provides the value of the money. | |
| | CS3 | 3. I feel satisfied with this restaurant. | |
| | CS4 | 4. This restaurant provides VAT (value-added tax) form properly. | |
| Customer Loyalty (CL) | CL1 | 1. I would continue visiting this restaurant in the future | Oliver (1999); Zhong and Moon (2020) |
| | CL2 | 2. I would recommend this restaurant to someone else | |
| | CL3 | 3. I would consume varieties of the food items mentioned in the menu of this restaurant. | |
| | CL4 | 4. For me, this restaurant is the best alternative. | |

related aspects of the transaction rather than a theoretically pure price-fairness measure. The transaction utility mechanism (Kahneman et al., 1986; Thaler, 1985) underpinning H4–H6 operates specifically through fairness evaluation; items tapping convenience and promotional value may have diluted the scale's sensitivity to that mechanism. This is acknowledged as a measurement limitation, with fuller discussion in the results and limitations sections.

### *3.2. Sampling Technique and Data Collection*

With no accessible customer list for fast-food diners in Thailand, purposive sampling was the practical choice. Respondents had to be aged 18 or over, at least high-school educated, and have eaten at a fast-food restaurant within the past six months — criteria enforced automatically through screening questions. The survey ran via Google Forms distributed on social media between January and April 2025.

Online distribution was the most feasible option given the absence of venue-based intercepts, though it carries acknowledged limitations: reduced control over completion conditions and limited prevention of multiple submissions. Several quality-control steps were therefore implemented: participants named their most recently visited restaurant and estimated the visit date, anchoring responses to a specific experience; and post-collection, cases with missing data, inconsistent answers, straight-lining, or unusually fast completion were removed (Podsakoff et al., 2003).

Social media recruitment produces a structurally skewed sample: 77% of respondents were aged 18-30, and all had sufficient digital access to participate. Older consumers, rural populations, lower-income segments, and those with lower digital engagement are systematically underrepresented — a direct consequence of the recruitment mechanism, not random variation. The sample represents Thailand's digitally active younger urban fast-food consumer with reasonable fidelity; it

does not represent the full market. This demographic concentration has direct implications for the findings: the null PP moderation is partly consistent with a cohort that resolves price fairness before visiting; the large CS→CL effect likely reflects routine-based loyalty characteristic of habitual younger visitors; and these patterns may not generalise to older or less frequent consumers.

### 3.3. Common Method Bias (CMB) and Assessment

All constructs were measured from the same respondents in a single session, which creates CMB risk. Procedural steps were taken to reduce this risk: the survey was anonymous, voluntary, and framed as academic research to lower socially desirable responding; participants were told there were no right or wrong answers; and demographic and screening items were placed before the main construct blocks to reduce artificial response consistency. Post-collection, CMB was assessed using two complementary statistical approaches. First, Harman's single-factor test was conducted by loading all items into an unrotated exploratory factor analysis and inspecting whether a single factor explains the majority of variance (Podsakoff et al., 2003). Second, the full collinearity VIF approach recommended by Kock (2015) was applied, which treats inflated VIF values across all constructs as an indicator of method-driven covariance rather than genuine construct relationships. Results from both tests are reported in Section 4.1.

### 3.4. Analysis Technique

The hypotheses were tested using PLS-SEM in SmartPLS 4.1.1.2. Three model-specific considerations justify this choice over CB-SEM. First, the study is prediction-oriented — how much variance in CS and CL can the quality and price variables explain — rather than concerned with reproducing a population covariance matrix, which is CB-SEM's design purpose (Hair et al., 2019). Second, the model includes three moderation interaction terms (PP × SQ, PP × FQ, PP × LE); PLS-SEM handles product-indicator interactions more straightforwardly than CB-SEM, which requires considerably more restrictive assumptions. Third, Likert-based attitudinal data routinely violate multivariate normality, which PLS-SEM does not require but CB-SEM would have required remediation for. Sample adequacy was confirmed via the inverse square root method (Kock & Hadaya, 2018), which yields a minimum of approximately 238 for this model's smallest path coefficient ($\beta = 0.129$), and via post-hoc power analysis (Cohen, 1992), which confirms power exceeding 0.99 for the most complex construct at $n = 300$ (Hair et al., 2019; Ringle et al., 2020).

## 4. Results

### 4.1. Common Method Bias (CMB)

CMB was assessed using two complementary statistical tests. For Harman's single-factor test, all items were loaded into an unrotated principal component analysis; the first factor accounted for 32.4% of total variance, well below the 50% threshold that would signal a dominant method factor (Podsakoff et al., 2003). This provides initial evidence that CMB is not severely inflating the inter-construct relationships. As a second, more stringent check, indicator-level collinearity statistics were examined: as shown in Tables 2, VIF values across all indicators ranged from 1.000 to 2.710, well below the conservative threshold of 3.3 suggested by Kock (2015) as indicative of problematic collinearity. Taken together, both tests indicate that common method bias is unlikely to constitute a serious threat to the validity of the structural estimates in this study.

### 4.2. Sample Demographics

The 300 respondents had all consumed fast food in Thailand within the past six months. Females made up 58% of the sample. The age distribution was skewed toward younger adults: 50.67% were aged 19–30 and 26.67% were aged 18, together accounting for 77% of the sample — a concentration that reflects the social media recruitment channel and directly shapes how the findings generalise. Most respondents were well educated: 37.33% held a bachelor's degree and 34.67% had completed high school. Students (24.33%) and private-sector employees (27%) were the two largest occupational groups. Consumption frequency was high: 43.67% had visited a fast-food outlet 2–5 times and 42.33% had visited 5–10 times in the prior six months, confirming that the sample reflects habitual rather than occasional consumers. Table 3 presents the full demographic profile.

**Table 2.** Indicator Collinearity Statistics (VIF)

| Construct | Item | VIF |
|---|---|---|
| Service Quality (SQ) | SQ1 | 1.548 |
| | SQ2 | 1.675 |
| | SQ3 | 1.431 |
| Food Quality (FQ) | FQ2 | 1.440 |
| | FQ3 | 1.293 |
| | FQ4 | 1.492 |
| | FQ5 | 1.398 |
| Location and Environment (LE) | LE1 | 1.802 |
| | LE2 | 1.754 |
| | LE3 | 1.646 |
| | LE4 | 1.530 |
| Perceived Price (PP) | PP1 | 1.586 |
| | PP2 | 1.549 |
| | PP3 | 1.906 |
| | PP4 | 2.183 |
| Customer Satisfaction (CS) | CS1 | 1.735 |
| | CS2 | 2.127 |
| | CS3 | 2.128 |
| | CS4 | 1.743 |
| Customer Loyalty (CL) | CL1 | 2.425 |
| | CL2 | 2.710 |
| | CL3 | 1.917 |
| | CL4 | 1.787 |
| Interaction terms | PP × SQ | 1.000 |
| | PP × FQ | 1.000 |
| | PP × LE | 1.000 |

*Note.* VIF values for all indicators ranged from 1.000 to 2.710, below the conservative threshold of 3.3.
(Kock, 2015) and the common cut-off of 5, indicating no critical multicollinearity among the measurement items.

**Table 3.** Sample Demographics

| Measure | Category | Frequency | Percentage |
|---|---|---|---|
| Gender | Female | 174 | 58.00% |
| | Male | 126 | 42.00% |
| Age Group | 18 years old | 80 | 26.67% |
| | 19-30 years old | 152 | 50.67% |
| | 31-45 years old | 54 | 18.00% |
| | ≥45 years old | 14 | 4.66% |
| Educational Background | High school and equivalent | 104 | 34.67% |
| | Bachelor's degree | 112 | 37.33% |
| | Master's degree | 69 | 23.00% |
| | Doctoral degree | 15 | 5.00% |
| Occupation | Student | 73 | 24.33% |
| | Doctor | 11 | 3.67% |
| | Lecturer | 25 | 8.33% |
| | Entrepreneur | 21 | 7.00% |
| | Private Sector | 81 | 27.00% |
| | Civil servant | 66 | 22.00% |
| | Others | 23 | 7.67% |
| Frequency of eating fast foods in the past 6 months | 1 time | 11 | 3.67% |
| | 2-5 times | 131 | 43.67% |
| | 5-10 times | 127 | 42.33% |
| | >10 times | 31 | 10.33% |

### 4.3. Validity and Reliability Assessment

All standardised outer loadings exceeded 0.70, confirming indicator reliability, and AVE values for all six constructs cleared the 0.50 benchmark (CL = 0.711, CS = 0.687, SQ = 0.673, LE = 0.639, PP = 0.646, FQ = 0.549), indicating each construct captures more than half the variance in its own items (Hair et al., 2017). Cronbach's alpha and composite reliability both exceeded 0.70 across all constructs. Table 4 reports the full reliability and convergent validity results.

Discriminant validity was examined three ways. The Fornell-Larcker criterion passed — every construct's AVE square root exceeded its highest inter-construct correlation (Table 5). The cross-loading matrix confirmed that all items loaded higher on their intended construct than on any other (Table 7). HTMT ratios are reported in Table 6. Most pairs sat well below 0.85, particularly those involving SQ (range: 0.574–0.717). Three pairs came in between 0.85 and 0.90: LE ↔ CS (0.894), CS ↔ CL (0.877), and FQ ↔ CS (0.872). These values are reported transparently rather than withheld.

All three remain below the 0.90 ceiling that Henseler et al. (2015) recommend for reflective models, and each can be grounded in ECT's own structure. LE and CS share variance because, in ECT, the physical environment is part of what gets evaluated during a dining visit — the space itself either confirms or violates comfort expectations, so some overlap between the two constructs is built into the theory rather than being a measurement problem. FQ and CS are similarly close because food is the focal confirmation object in fast-food ECT models; the line between evaluating food quality and feeling satisfied is, in this context, deliberately thin. CS and CL overlap because ECT's core proposition is that confirmed expectations translate into loyalty — a strong empirical correlation between the two is exactly what the theory predicts. Clark and Watson (2016) make the broader point that elevated correlations between theoretically proximate constructs do not constitute discriminant validity failure; what matters is whether the constructs remain empirically separable, and the passing Fornell-Larcker criterion, clean cross-loadings, and SRMR of 0.072 together provide that assurance.

### 4.4. Model Robustness Testing

Model quality was assessed using explanatory power ($R^2$), effect sizes ($f^2$), out-of-sample predictive performance (PLSpredict), and global model fit indicators (SRMR and related discrepancy measures). The coefficients of determination indicate that the model explains a substantial-to-moderate proportion of variance in the endogenous constructs (Chin, 1998).

**Table 4.** Convergent Validity and Reliability

| Constructs | Items | FL | CA | CR | AVE |
|---|---|---|---|---|---|
| Service Quality (SQ) | SQ1 | 0.819 | | | |
| | SQ2 | 0.837 | 0.757 | 0.861 | 0.673 |
| | SQ3 | 0.804 | | | |
| | FQ1 | 0.773 | | | |
| Food Quality (FQ) | FQ2 | 0.725 | | | |
| | FQ3 | 0.757 | 0.727 | 0.830 | 0.549 |
| | FQ4 | 0.708 | | | |
| Location and Environment (LE) | LE1 | 0.824 | | | |
| | LE2 | 0.813 | | | |
| | LE3 | 0.792 | 0.811 | 0.876 | 0.639 |
| Perceived Price (PP) | LE4 | 0.767 | | | |
| | PP1 | 0.770 | | | |
| | PP2 | 0.760 | 0.817 | 0.879 | 0.646 |
| | PP3 | 0.820 | | | |
| | PP4 | 0.861 | | | |
| | CS1 | 0.799 | | | |
| Customer Satisfaction (CS) | CS2 | 0.854 | 0.848 | 0.898 | 0.687 |
| | CS3 | 0.861 | | | |
| | CS4 | 0.799 | | | |
| | CL1 | 0.864 | | | |
| Customer Loyalty (CL) | CL2 | 0.889 | 0.864 | 0.908 | 0.711 |
| | CL3 | 0.822 | | | |
| | CL4 | 0.795 | | | |

*Note.* FL: Factor Loading ≥ 0.7; CA: Cronbach Alpha ≥ 0.7; CR: Composite Reliability ≥ 0.7; AVE: Average Variance Extracted ≥0.5.

**Table 5.** Fornell-Larcker Criterion

| | SQ | FQ | LE | PP | CS | CL |
|---|---|---|---|---|---|---|
| Service Quality | **0.820** | | | | | |
| Food Quality | 0.532 | **0.741** | | | | |
| Location and Environment | 0.538 | 0.641 | **0.799** | | | |
| Perceived Price | 0.471 | 0.571 | 0.646 | **0.804** | | |
| Customer Satisfaction | 0.549 | 0.689 | 0.741 | 0.701 | **0.829** | |
| Customer Loyalty | 0.470 | 0.648 | 0.702 | 0.648 | 0.754 | **0.843** |

Notes: The diagonal and bold values are the square roots of AVE.

Specifically, CS achieved $R^2 = 0.687$ ($R^2$ adjusted = 0.681), while CL achieved $R^2 = 0.569$ ($R^2$ adjusted = 0.568), values reported in Table 8.

Effect sizes ($f^2$) were then examined for each predictor. CS had a very large effect on CL ($f^2 = 1.319$), confirming satisfaction as the dominant loyalty driver. For customer satisfaction (CS) as the endogenous construct, LE ($f^2 = 0.111$) and PP ($f^2 = 0.110$) exhibit small-to-moderate effects, while FQ ($f^2 = 0.077$) and SQ ($f^2 = 0.023$) show small effects. In contrast, the moderation terms demonstrate negligible effect sizes (PP×SQ = 0.002; PP×FQ = 0.000; PP×LE = 0.007), implying that these interaction effects add minimal explanatory value.

Predictive relevance was assessed using PLSpredict with a 10-fold, 10-repetition cross-validation procedure (Shmueli et al., 2019). Following Shmueli et al.'s (2019) decision rule, predictive power is classified as high when all indicators show lower PLS-SEM RMSE than the naïve linear model (LM) benchmark, medium when a majority do, and low otherwise. Seven of the eight indicators met this criterion (Table 9), placing the model in the high predictive power category. All indicator-level $Q^2$predict values were positive (range: 0.333–0.494). The single exception, CL4, showed a PLS-SEM RMSE of 1.185 against an LM RMSE of 1.183, a difference of 0.002 that falls within the range expected from repeated cross-validation resampling and does not alter the overall classification. At the construct level, $Q^2$predict values of 0.651 for CS and 0.561 for CL, together with RMSE and MAE values reported in Table 10, confirm the model predicts both endogenous constructs well out of sample. A cross-validated predictive ability test (CVPAT) further supported this conclusion: PLS-SEM's prediction loss was significantly lower than the indicator-average benchmark for CL, CS, and the overall model (all $p < .001$), and statistically indistinguishable from the linear model benchmark (all $p > .05$), indicating that the model matches a more sophisticated benchmark's predictive accuracy while clearly outperforming a naïve one (Liengaard et al., 2021).

Model fit was evaluated by comparing the saturated and estimated models on SRMR and three supplementary discrepancy statistics (Table 10). The estimated model's SRMR of 0.072 falls below the 0.08 threshold conventionally used to indicate acceptable fit (Henseler et al., 2014), and the gap between the saturated (0.062) and estimated (0.072) values is small enough that the imposed structural paths are not distorting the model's correspondence with the empirical correlation matrix. The unweighted and geodesic distance measures (d_ULS, d_G) rose modestly from the saturated to the estimated model, which is expected given that the estimated model constrains relationships the saturated model leaves free, and the chi-square statistic followed the same pattern. NFI values sat just under 0.80 for both models. This is below the 0.90 benchmark sometimes applied to covariance-based SEM, but NFI is not adjusted for model complexity and its cutoffs were derived for CB-SEM contexts rather than PLS path models, so it is reported here as a supplementary reference point rather than a standalone pass/fail criterion (Hair et al., 2019). Taken together with the SRMR result, these indices support the model's overall adequacy.

**Table 6.** Heterotrait-Monotrait Ratio (HTMT) - Matrix

| | SQ | FQ | LE | PP | CS | CL |
|---|---|---|---|---|---|---|
| Service Quality | — | | | | | |
| Food Quality | 0.717 | — | | | | |
| Location and Environment | 0.685 | 0.832 | — | | | |
| Perceived Price | 0.598 | 0.734 | 0.790 | — | | |
| Customer Satisfaction | 0.681 | 0.872 | 0.894 | 0.842 | — | |
| Customer Loyalty | 0.574 | 0.812 | 0.836 | 0.770 | 0.847 | — |

Notes: The values in the parenthesis represents HTMT value with < 0.85 is strong, < 0.90 moderate and < 0.95 weak.

**Table 7.** Cross-Loadings Matrix

| Indicators | SQ | FQ | LE | PP | CS | CL |
|---|---|---|---|---|---|---|
| SQ1 | **0.819** | 0.429 | 0.404 | 0.419 | 0.453 | 0.393 |
| SQ2 | **0.837** | 0.443 | 0.440 | 0.407 | 0.432 | 0.348 |
| SQ3 | **0.804** | 0.329 | 0.375 | 0.407 | 0.453 | 0.370 |
| FQ2 | 0.723 | **0.775** | 0.708 | 0.539 | 0.534 | 0.537 |
| FQ3 | 0.708 | **0.777** | 0.708 | 0.539 | 0.456 | 0.489 |
| FQ4 | 0.553 | **0.775** | 0.708 | 0.500 | 0.488 | 0.486 |
| FQ5 | 0.399 | **0.708** | 0.708 | 0.385 | 0.456 | 0.399 |
| LE1 | 0.440 | 0.530 | **0.824** | 0.530 | 0.622 | 0.604 |
| LE2 | 0.404 | 0.499 | **0.813** | 0.511 | 0.599 | 0.554 |
| LE3 | 0.407 | 0.553 | **0.792** | 0.511 | 0.575 | 0.587 |
| LE4 | 0.375 | 0.486 | **0.787** | 0.467 | 0.573 | 0.496 |
| PP1 | 0.343 | 0.353 | 0.473 | **0.770** | 0.517 | 0.516 |
| PP2 | 0.407 | 0.459 | 0.443 | **0.760** | 0.537 | 0.528 |
| PP3 | 0.600 | 0.548 | 0.511 | **0.861** | 0.596 | 0.480 |
| PP4 | 0.436 | 0.548 | 0.591 | **0.861** | 0.596 | 0.562 |
| CS1 | 0.495 | 0.585 | 0.647 | 0.562 | **0.854** | 0.637 |
| CS2 | 0.512 | 0.650 | 0.622 | 0.641 | **0.861** | 0.693 |
| CS3 | 0.410 | 0.563 | 0.622 | 0.641 | **0.799** | 0.540 |
| CS4 | 0.512 | 0.650 | 0.622 | 0.641 | **0.861** | 0.693 |
| CL1 | 0.416 | 0.541 | 0.606 | 0.569 | 0.675 | **0.864** |
| CL2 | 0.488 | 0.611 | 0.661 | 0.609 | 0.686 | **0.889** |
| CL3 | 0.376 | 0.497 | 0.539 | 0.500 | 0.600 | **0.822** |
| CL4 | 0.289 | 0.533 | 0.554 | 0.500 | 0.575 | **0.795** |

Notes: SQ= Service Quality; FQ= Food Quality; LE= Location and Environment; PP=.
Perceived Price; CS=Customer Satisfaction; CL=Customer Loyalty.

### *4.5. Hypothesis Testing Results*

All direct effect hypotheses were supported and all moderation hypotheses were not (Table 11). SQ, FQ, and LE each positively predicted CS: H1 ($\beta = 0.129$, $t = 3.198$), H2 ($\beta = 0.245$, $t = 4.141$), and H3 ($\beta = 0.304$, $t = 3.942$). The three PP moderation terms produced negligible, non-significant coefficients: H4 ($\beta = 0.027$, $t = 0.755$), H5 ($\beta = –0.013$, $t = 0.235$), and H6 ($\beta = –0.053$, $t = 0.855$). CS strongly predicted CL (H7: $\beta = 0.754$, $t = 25.814$). Figure 2 provides a visual summary of these results.

## 5. Discussion

The results are internally consistent but their interpretation requires attention to context. All three quality dimensions predicted customer satisfaction (H1–H3 supported), satisfaction strongly predicted loyalty (H7 supported), and perceived price moderated none of the quality–satisfaction relationships (H4–H6 not supported). What is interesting is not simply that these findings are consistent with ECT but why the theory fits unevenly — why one quality dimension matters far less than the others, and why price, which theoretically should amplify quality evaluations, appears to have been resolved before diners walked through the door. Each result is discussed below in relation to prior work, with attention to what the Thai fast-food context specifically adds and where alternative explanations cannot be ruled out.

SQ influenced CS (H1), confirming that operational competence — accurate orders, acceptable wait times, professional staff conduct — generates confirmation within the ECT framework. The direction replicates Ababneh et al. (2022) in UAE fast food and is consistent with the 108-study synthesis by Mendocilla et al. (2026). What is theoretically notable, however, is

**Table 8.** Coefficient of Determination ($R^2$)

| Endogenous construct | $R^2$ | Adjusted $R^2$ | Interpretation |
|---|---|---|---|
| Customer Satisfaction | 0.687 | 0.681 | Substantial |
| Customer Loyalty | 0.569 | 0.568 | Moderate |

**Table 9.** Plspredict Results

| Indicator | $Q^2$predict | PLS-SEM RMSE | LM RMSE | Predictive performance |
|---|---|---|---|---|
| CL1 | 0.415 | 1.112 | 1.145 | PLS better than LM |
| CL2 | 0.494 | 1.133 | 1.146 | PLS better than LM |
| CL3 | 0.333 | 1.182 | 1.215 | PLS better than LM |
| CL4 | 0.346 | 1.185 | 1.183 | LM slightly better |
| CS1 | 0.356 | 1.099 | 1.115 | PLS better than LM |
| CS2 | 0.457 | 1.114 | 1.123 | PLS better than LM |
| CS3 | 0.492 | 1.057 | 1.087 | PLS better than LM |
| CS4 | 0.473 | 1.203 | 1.206 | PLS better than LM |

the coefficient's relative size: SQ produced the weakest effect in the model, whereas Western studies frequently position it as the primary satisfaction driver (Cronin Jr & Taylor, 1992). This divergence has implications beyond the Thai context. ECT treats performance as a unified signal whose confirmation produces satisfaction; it does not theorise that different performance dimensions carry different confirmation weights. Yet the results here suggest they do — and that which dimension dominates depends on cultural familiarity and consumption habit. When a service protocol has been experienced across dozens of visits, it ceases to be a performance cue that consumers actively evaluate and becomes a baseline that they simply expect. Its delivery no longer generates confirmation; only its failure generates disconfirmation. This asymmetry — whereby SQ contributes to dissatisfaction when absent but adds little to satisfaction when present — echoes Herzberg et al.'s (1959) hygiene logic and suggests that ECT's performance construct may behave differently across the habitual–occasional consumption spectrum in ways the theory has not yet formalised.

FQ was the strongest CS predictor (H2), and the result warrants theoretical interpretation rather than simple replication confirmation. Within ECT, the confirmation gap is widest — and most salient to the consumer — for the performance dimension against which prior expectations are most precisely calibrated. Food is the primary reason a fast-food visit occurs; expectations about taste, temperature, and portion are formed before ordering and evaluated the moment food arrives. Deviations in either direction register immediately and are difficult for strong service or a pleasant environment to offset. This is why FQ tends to dominate in food-conscious cultural settings: the precision of the prior expectation sharpens the confirmation signal. In Thailand, where sensory standards are applied to even routine meals and the 21–30 cohort has accumulated detailed flavour expectations through repeat visits to the same chains, FQ operates as the most densely calibrated confirmation target in the model. Teangsompong et al. (2024) document this sensory exigence in Thai food service broadly; the present study extends it into the international fast-food segment, which is typically framed as competing on convenience rather than taste. The implication for ECT is that confirmation intensity is not uniform across performance dimensions but is proportional to the precision with which prior expectations are held — a proposition the theory assumes but does not explicitly theorise.

LE affected CS (H3), producing the largest direct effect among the three quality dimensions. Within ECT, LE operates through two separable confirmation channels: physical accessibility confirms or violates effort expectations formed before arrival, while servicescape — cleanliness, layout, ambient atmosphere — confirms or violates comfort and hygiene expectations formed through prior visits and social exposure. The fact that LE outweighed SQ in this sample is not self-explanatory from the ECT framework alone; it requires a cultural and demographic account. The dominant cohort — 77% aged 18–30 — increasingly uses fast-food outlets as social environments rather than purely transactional spaces. For this

**Table 10.** Model Fit Summary

| Fit index | Saturated model | Estimated model |
|---|---|---|
| SRMR | 0.062 | 0.072 |
| d_ULS | 1.054 | 1.444 |
| d_G | 0.442 | 0.474 |
| Chi-square | 771.854 | 791.980 |
| NFI | 0.799 | 0.794 |

Note: SRMR = Standardized Root Mean Square Residual; d_ULS = Squared Euclidean Distance; d_G = Geodesic Distance; NFI = Normed Fit Index. The estimated model SRMR (0.072) falls below the 0.08 threshold conventionally used to indicate acceptable model fit (Henseler et al., 2014).

**Table 11.** Summary of Hypothesis Testing

| Hypothesis | $\beta$ | T-Value | Bootstrapping CI 97.5% (N=5000) | | Decision |
|---|---|---|---|---|---|
| | | | Min | Max | |
| H1 SQ → CS | 0.129** | 3.198 | 0.054 | 0.211 | Supported |
| H2 FQ → CS | 0.245*** | 4.141 | 0.134 | 0.363 | Supported |
| H3 LE → CS | 0.304*** | 3.942 | 0.141 | 0.445 | Supported |
| H4 PP X →SQ → CS | 0.027 | 0.755 | -0.038 | 0.108 | Not Supported |
| H5 PP X →FQ → CS | -0.013 | 0.235 | -0.131 | 0.076 | Not Supported |
| H6 PP X →LE → CS | -0.053 | 0.855 | -0.157 | 0.084 | Not Supported |
| H7 CS → CL | 0.754*** | 25.814 | 0.696 | 0.808 | Supported |

Notes: Significance level with ***P < 0.001; **P < 0.01; *P < 0.05.

group, the physical setting carries a presentational function: it is photographed, shared, and evaluated as part of a social experience. Standard servicescape theory (Kirk & Jeffrey, 1996) captures the comfort dimension of this but not the social-display dimension, which elevates the evaluative stakes of environmental quality beyond what earlier models anticipated. The theoretical implication is that ECT's confirmation logic for LE may need to incorporate a social signal dimension — particularly in markets where digital sharing of dining experiences has made the physical environment part of the consumer's self-presentation — if it is to account for why environment carries heavier confirmation weight than operational service in habitual, socially-embedded consumption contexts.

PP did not moderate any of the three quality–satisfaction relationships, meaning H4–H6 were rejected. Rather than treating this as a null result to set aside, the finding warrants explanation grounded in Thailand's specific market structure. PP in this context appears to operate as a "hygiene factor" (Herzberg et al., 1959) — a threshold resolved before the consumption episode begins that, once met, exerts no further influence on within-visit quality evaluations. Three structural conditions make this likely in Thailand: government price monitoring by the Consumer Protection Board and Department of Internal Trade constrains competitive price variation, anchoring expectations to a stable range (Krungsri Bank, 2024); the post-2022 inflationary period paradoxically strengthened price reference formation rather than destabilising it, normalising higher price levels as inert anchors (Helson, 1964); and aggregator platforms — GrabFood, foodpanda, LINE MAN — complete price comparison before the visit, so that by the time a Thai consumer evaluates service, food, and environment, price fairness has already been cleared. This contrasts with Ryu and Han (2010), where pricing uncertainty was structurally elevated across US quick-casual visits, and Konuk (2019), where price fairness remained an active concern in a premium Turkish organic niche — in both cases the conditions for active moderation hold; in Thailand's standardised market, they do not. Two further

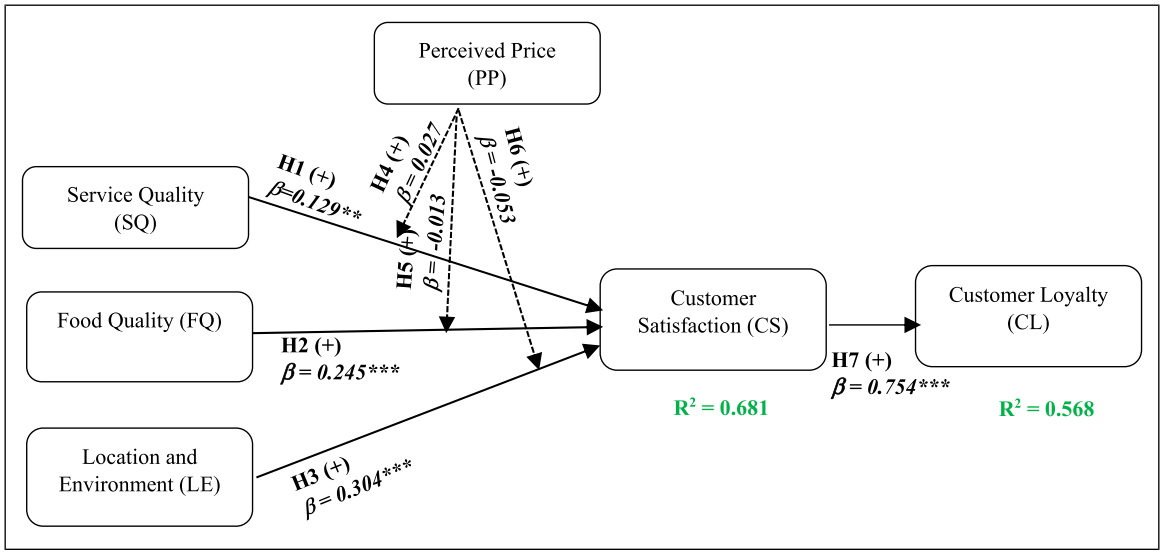



**Figure 2.** Hypothesis summary

explanations cannot be dismissed: the sample's 18–30 demographic concentration may underrepresent older consumers for whom price fairness remains a live evaluative factor, and the PP scale's blending of fairness, payment convenience, and promotional value items may have diluted the construct's sensitivity to the fairness-based mechanism the moderation hypotheses required.

H7, CS strongly influenced CL ($\beta = 0.754$, $f^2 = 1.319$), substantially exceeding the CS→CL effect sizes reported in comparable fast-food studies — Ababneh et al. (2022), Ali-Alsaadi et al. (2025), and Zhong and Moon (2020) all document $f^2$ values in the 0.35–0.60 range — and the divergence carries theoretical meaning. ECT proposes that accumulated confirmed expectations convert into loyalty, but this accumulation is slow in single-episode or low-frequency settings. In high-frequency habitual settings, each confirmed visit compresses the cognitive cost of re-choosing and raises the perceived risk of switching (Oliver, 1999). This mechanism is particularly salient here: 77% of respondents visited fast-food outlets 2–10 times in the prior six months, meaning the accumulation process had been running across many prior visits before data collection — a level of habituation that likely amplifies the conversion beyond what less frequent samples would detect. The result is default loyalty — return behaviour requiring no active deliberation — distinct from attitudinal loyalty built on brand identification and more sensitive to sustained quality inconsistency than to occasional failures. The finding provides preliminary evidence that the strength of the CS→CL relationship is partially a function of consumption frequency rather than a stable cross-contextual parameter, suggesting consumption habit as a moderator of ECT's loyalty mechanism that the theory has not explicitly incorporated.

Three contributions stand out. First, the simultaneous modelling of SQ, FQ, and LE within a single ECT framework produces a confirmation hierarchy that prior single-cue models could not detect: FQ carries the most precisely calibrated confirmation load, LE carries a social-display dimension that standard servicescape theory underweights, and SQ operates closer to a hygiene baseline — present and necessary, but no longer differentiating among habitual visitors. These weights are context-bound and should not be generalised beyond Thailand's younger urban consumer, but they motivate the theoretical proposition that ECT's performance dimension is culturally stratified rather than uniform. Second, the null PP moderation, interpreted through Thailand's institutional pricing environment, supports a market-maturity boundary condition on ECT's value-confirmation mechanism: price fairness moderates quality–satisfaction conversion only where pricing uncertainty remains structurally elevated. Third, the unusually large CS→CL effect ($f^2 = 1.319$) provides preliminary evidence that the confirmation–loyalty pathway is amplified in high-frequency consumption contexts, suggesting that consumption habit is a moderator of ECT's loyalty mechanism that the theory has not explicitly incorporated.

## 6. Implications

### 6.1. Theoretical Implications

This study provides empirical evidence relevant to three underspecified questions about ECT's applicability in fast-food contexts. The findings motivate theoretical propositions worth testing in future work, though the cross-sectional, single-context design means they should be treated as preliminary rather than confirmatory.

First, ECT's performance dimension is not uniform across cue types. The original theory treats performance as a single evaluative dimension — what was delivered versus what was expected. This study demonstrates that in multi-cue fast-food environments, different performance dimensions generate different confirmation magnitudes depending on cultural context and consumption habit. In terms of standardised path coefficients, LE produced the largest effect ($\beta = 0.304$), followed by FQ ($\beta = 0.245$) and SQ ($\beta = 0.129$). These two orderings reflect different things: FQ is theoretically the most densely calibrated confirmation target — food is the primary reason the visit occurs and sensory expectations are formed and tested with the greatest precision — while LE registers the larger path weight partly because the 18–30 cohort increasingly treats the physical setting as a social and presentational space, elevating its evaluative stakes beyond what standard servicescape theory anticipates. SQ, by contrast, has become a hygiene baseline among habitual visitors: its absence triggers dissatisfaction, but its reliable delivery no longer generates active confirmation. This differential weighting is not random — it reflects a culturally and demographically modulated confirmation hierarchy that prior ECT fast-food research, relying on single-cue or aggregate models, had not established (Ababneh et al., 2022; Mendocilla et al., 2026). The implication is that performance weighting within ECT may be culturally and contextually variable rather than uniform — a possibility worth investigating across other markets, dining tiers, and demographic profiles before it can be treated as a general theoretical refinement.

Second, ECT's value-confirmation boundary condition. ECT and its extensions consistently treat perceived value — including price fairness — as an active component of the confirmation process (Oliver, 1980; Ryu & Han, 2010). This study suggests that in mature, price-transparent fast-food markets shaped by specific socio-economic conditions — narrow institutionally-anchored price bands, aggregator-mediated pre-visit price comparison, and inflation-driven price normalisation — price fairness migrates from an active confirmation variable to a hygiene threshold that is resolved before the

consumption episode begins (Herzberg et al., 1959). Adaptation-level theory (Helson, 1964) provides the cognitive mechanism: repeated exposure to stable, predictable prices converts them from active evaluations into inert reference points. The implication for ECT is that the theory's value-confirmation mechanism may operate differently across market maturity stages and institutional pricing environments — active in markets with pricing uncertainty and variability, dormant in markets where structural conditions have already resolved price fairness at the pre-visit stage. This interpretation is provisional, given the construct validity concerns about the PP scale acknowledged in Section 3, but if confirmed through replication with purified instruments, it would give hospitality researchers a theoretically grounded basis for predicting when price will and will not serve as an active confirmation moderator (Xia et al., 2004).

Third, ECT's habitual consumption amplification effect. ECT was originally developed for single-episode consumption scenarios. High-frequency, habitual consumption contexts like fast food present a theoretically distinct environment: consumers arrive with expectations that are unusually well-calibrated from dozens of prior visits, making the confirmation-disconfirmation gap more sensitive and cumulative loyalty effects stronger. The very large CS→CL effect size in this study ($f^2 = 1.319$) — exceeding that reported in most comparable restaurant research — is consistent with this habituation amplification argument. Recent work on QSR satisfaction dynamics also points toward habitual consumers being more responsive to confirmation failures (Manhas et al., 2024; Mendocilla et al., 2026). This study provides preliminary evidence, within one Thai fast-food context, that ECT's confirmation-loyalty pathway may be intensified in high-frequency consumption environments. This is a theoretically interesting possibility, but given the sample's demographic skew toward habitual young consumers, it should be treated as a finding that motivates further investigation rather than a settled qualification of ECT.

### 6.2. Practical Implications

The findings carry a consistent managerial thread: in Thailand's fast-food market, satisfaction is built through confirmed expectations across food, environment, and service — and loyalty follows from that confirmation accumulating reliably over repeat visits. For operators, the evidence points to a single practical priority: managing confirmation consistency across food, environment, and service rather than determining which dimension deserves attention.

SQ produced the weakest confirmation effect in this sample, which should not be read as an argument for neglecting it. Among habitual younger visitors, service scripting has become normalised — the baseline expectation is that orders arrive accurately and promptly, and merely meeting that standard generates no positive confirmation. What managers can influence is the margin above baseline: empathy and interpersonal attentiveness during brief interactions, proactive problem-solving when errors occur, and real-time feedback mechanisms that signal to customers that deviations are noticed and addressed. The confirmation effect is most powerful when experiences modestly exceed what was expected, not just when they avoid falling short.

FQ is where expectation gaps are most costly, because food is the focal confirmation object and Thai consumers arrive with precisely calibrated sensory expectations. Inconsistency — a portion noticeably smaller than the prior visit, a temperature that deviates from what the product should be — registers immediately and is hard for good service or a pleasant environment to offset. Standardised quality-control protocols and routine sensory audits across outlets are the operational backbone of managing this. Beyond consistency, limited-time and seasonal menu additions can generate positive disconfirmation by introducing novelty without destabilising the baseline. Transparency about ingredient sourcing or preparation, where it is credible and verifiable, also strengthens the perceived integrity of the product — which matters in a market where food consciousness is culturally elevated.

LE produced the largest confirmation effect in this study, a finding that reflects something specific about the sample: younger Thai consumers increasingly use fast-food outlets as social spaces, and the evaluative stakes of how a space looks and feels have risen accordingly. Cleanliness, spatial flow, and aesthetic comfort are no longer background conditions — they are active confirmation targets. Investment in maintaining functionally clean and visually coherent spaces, particularly during peak turnover periods, directly protects satisfaction. Sustainable design elements — natural lighting, visible waste segregation, eco-conscious materials — carry additional signal value for a cohort that increasingly aligns consumption choices with environmental identity.

The null price moderation carries a counterintuitive but actionable implication: price promotions are unlikely to amplify satisfaction in this market because price fairness is already resolved before the visit begins. Competing on price in a market where consumers treat it as a baseline condition, rather than an active evaluative variable, risks margin erosion without satisfaction returns. A more productive strategy is stable, transparent pricing paired with clear value communication — articulating what the price buys in terms of product quality, sourcing integrity, and operational consistency. Where premium pricing is relevant, the case needs to be made through tangible product and environmental attributes rather than promotional mechanisms. Loyalty programs structured around confirmed expectations — mobile membership rewards tied

to purchase behaviour, point systems with predictable redemption — reinforce the reciprocity that keeps satisfied customers returning without requiring price concessions to do it.

The satisfaction–loyalty effect in this study is unusually large ($f^2 = 1.319$), and its managerial interpretation is worth being precise about: it does not mean that satisfaction automatically converts to loyalty, but rather that among habitual visitors, each confirmed visit compounds the default preference for that outlet. The operational priority is therefore maintaining confirmation consistency rather than managing individual peak experiences. Digitally mediated touchpoints — CRM-driven personalisation, app-based menu recommendations, event-triggered incentives — can sustain the confirmation rhythm between physical visits. Post-purchase review channels and social media engagement from satisfied customers extend the confirmation loop beyond the outlet itself. This evidence does not support the idea that occasional excellence compensates for routine inconsistency — loyalty in habitual consumption contexts is built on reliable expectation fulfilment, not memorable exceptions.

## 7. Conclusions

Three quality dimensions, SQ, FQ, and LE, each influenced CS in Thailand's fast-food sector, with FQ as the strongest driver, and CS strongly predicted CL. PP moderated none of these relationships. Within the ECT framework, FQ is the focal confirmation object, LE has become an active evaluative target for the habitual younger consumers who dominate the sample, and PP operates as a hygiene threshold resolved before the visit rather than a within-visit amplifier. The non-supported moderation hypotheses (H4–H6) are not a null finding to set aside but a contextually grounded result, explained by Thailand's institutional pricing environment, inflation-driven price normalisation, and the pre-visit price transparency created by food aggregator platforms.

## 8. Limitations and Future Studies

First, geographic scope, sample size, and sampling composition jointly constrain generalisability. The study is restricted to Thailand's urban fast-food market; cross-cultural replications in comparable Southeast Asian markets are needed to establish whether the patterns are regionally specific. On sample size, although $n = 300$ was statistically adequate via the inverse square root method (Kock & Hadaya, 2018) and post-hoc power analysis (Cohen, 1992), it remains modest for a sector as demographically diverse as Thailand's national market and cannot support subgroup analyses by age, income, or consumption frequency. On sampling composition, social media recruitment systematically over-recruits digitally active, younger urban respondents — 77% fell in the 18–30 band — with older adults, rural consumers, lower-income segments, and infrequent visitors materially underrepresented. This is a structural feature of the recruitment mechanism, not incidental variation, and the findings should be read as applying to Thailand's digitally active younger urban fast-food consumer. Future studies should employ venue-based intercept, stratified probability, or mixed-mode designs to establish whether the relationships hold in more representative samples.

Second, the operationalisation of PP represents a measurement limitation affecting the interpretability of H4–H6. The PP scale captured exchange-value fairness, payment convenience, and promotional value simultaneously, rather than a theoretically pure price fairness measure. Since the moderation mechanism proposed by transaction utility theory (Thaler, 1985) operates specifically through fairness evaluation, construct-irrelevant variance from convenience and promotional items may have attenuated the moderation test. Future research should employ a purified price fairness scale based on exchange-value proportionality (Ryu & Han, 2010; Xia et al., 2004) to distinguish empirically between the market-level habituation explanation and the measurement artefact explanation for the null findings.

Third, the demographic skew toward the 18–30 cohort has direct implications for two central constructs. On price sensitivity, younger habitual visitors have internalised prevailing price bands through repeated exposure, producing adaptation-level effects (Helson, 1964) that render price a resolved pre-visit condition. Older or less frequent consumers who entered the market at different reference points may not have undergone the same habituation — for them, price fairness may remain a live moderating factor in precisely the way H4–H6 proposed. The null moderation findings should therefore not be interpreted as evidence that price is irrelevant to Thai fast-food satisfaction generally, but as a potentially cohort-specific ceiling on price's evaluative salience. On brand loyalty, the large CS→CL effect ($f^2 = 1.319$) reflects a routine-based loyalty mechanism characteristic of habitual younger visitors — default return behaviour rather than deliberate brand commitment (Dick & Basu, 1994) — which may not hold among older or less frequent consumers. Future research should stratify samples by age and consumption frequency to test whether these patterns dissolve in more demographically balanced data.

Fourth, the model focused on three core experiential drivers and did not account for other potentially influential constructs such as brand image, emotional attachment, or digital platform effects — factors increasingly recognised in the fast-food loyalty literature that would strengthen the model's explanatory scope in future work.

Fifth, self-reported data introduces the risk that stated perceptions do not fully reflect actual behaviour. Future research using observational or experimental designs would provide stronger causal evidence for the relationships identified here. The growing role of online platforms — social media, review sites, and delivery apps — in shaping customer expectations was also not captured, and future models should integrate these digital touchpoints to better reflect contemporary Thai fast-food consumer behaviour.

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## Ethical Consideration

This study employed an anonymous, minimal-risk online questionnaire survey using purposive (non-probability) sampling to examine consumer loyalty in the fast-food restaurant context, focusing on dining service quality, customer satisfaction, and the moderating role of perceived price. Data were collected via Google Forms and distributed through social media platforms between January and April 2025, yielding 300 voluntary adult respondents. No identifying information (e.g., names, phone numbers, addresses, ID numbers) and no clinical/medical data were collected; responses were analysed only in aggregate, and confidentiality was maintained throughout.

Under the Ethical Guidelines for Research on Human Subjects in Thailand (https://www.fercit.org/file/Guideline_English_version.pdf), which are widely applied across Thai universities, minimal-risk social and behavioral surveys of non-vulnerable adults may be exempt from formal ethics committee review provided confidentiality is protected. Therefore, this study did not require research ethics approval, and no separate ethics committee approval or certificate was sought. This approach is also consistent with widely recognised international standards indicating that minimal-risk social and behavioral surveys of non-vulnerable adults may be exempt when appropriate safeguards (e.g., anonymity, confidentiality, and voluntariness) are in place.

## Consent to Participate

All participants were informed of the informed-consent conditions and indicated their consent electronically prior to completing the questionnaire. Participation was fully voluntary, respondents could skip any item, and they could withdraw at any time by closing the survey without penalty. Data were stored securely and were accessible only to the research team. Informed consent was obtained from all subjects involved in the study.

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## Declaration of conflicting interests

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## Data Availability Statement

The data presented in this study are available on request from the corresponding author due to privacy concerns.

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