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Strategic Drivers of E-Retailer Loyalty in Emerging Markets: A Management-Oriented Analysis of E-Service Quality and Trust in Online Reviews

Kulman Arailym Bauyrzhanqyzy [1], Yermekbayeva Dinara [2*], Abilazim Togzhan Yersinkyzy [3], Zheldibayev Assan [4], Şaban Çelik [5] and Kuralay Zhailaubayeva [6]

[1] Department of Management and Business, Kenzhegali Sagadiev University of International Business, Almaty 050010, Kazakhstan;
[2] Faculty of Economics and Business, Almaty Technological University, Almaty 050010, Kazakhstan;
[3] Department of Management and Business, Faculty of Management and Economics, Almaty Technological University, Almaty 050010, Kazakhstan;
[4] Department of Tourism and Service, Faculty of Economics and Business, Almaty Technological University, Almaty 050010, Kazakhstan;
[5] Department of Business Administration, Faculty of Economics and Administrative Sciences, İzmir Katip Çelebi University, İzmir 35620, Türkiye;
[6] School of Basic and Interdisciplinary Programs, Narxoz University, Almaty 050010, Kazakhstan.

* **Corresponding author:** ermekbaevad@mail.ru.

ABSTRACT: This study examines how e-service quality, perceived price fairness, and trust in online reviews are associated with e-retailer loyalty in Kazakhstan and Türkiye. A cross-sectional online survey generated 288 complete responses from consumers with prior online-shopping experience. The principal analytical sample comprised 284 respondents from Kazakhstan and Türkiye. E-service quality was modelled as a higher-order construct comprising system efficiency, fulfilment, and privacy, while perceived price fairness, trust in online reviews, and loyalty were specified as first-order constructs. The proposed relationships were tested using partial least squares structural equation modelling (PLS-SEM), bootstrapped mediation analysis, predictive assessment, robustness checks, measurement-invariance analysis, and exploratory multi-group comparison. The model explained 65.8% of the variance in trust in online reviews and 70.3% of the variance in e-retailer loyalty. E-service quality showed a strong positive association with trust and the largest total association with loyalty. Trust was positively associated with loyalty and partially mediated the relationship between e-service quality and loyalty. Perceived price fairness showed no significant direct association with loyalty but contributed indirectly through trust, indicating an indirect-only mediation pattern. The main structural relationships remained stable after response-quality screening and demographic adjustment. Cross-country coefficient differences were not statistically significant. However, full compositional invariance was not established for higher-order e-service quality, so national comparisons should be interpreted as exploratory. The study integrates operational service performance, price fairness, and trust in consumer-generated information within a single loyalty framework and clarifies their complementary but non-equivalent roles in post-adoption e-commerce behaviour.

Keywords: E-service quality, Price fairness, Trust in online reviews, E-retailer loyalty, Emerging markets.

I. INTRODUCTION

E-commerce has become an established component of contemporary retailing, shifting scholarly attention from consumers' initial adoption of online shopping toward the factors that sustain continued purchasing and loyalty. This transition is particularly relevant in emerging markets, where rapid digitalisation coexists with differences in logistics, payment systems, platform maturity, consumer experience, and market infrastructure. As online shopping becomes more routine, the managerial challenge increasingly concerns not whether consumers will adopt digital channels, but whether they will continue using particular e-retailers and develop stable loyalty relationships. Recent research therefore places growing emphasis on service quality, trust, price perceptions, satisfaction, and post-purchase behaviour rather than on adoption alone [1-3].

Kazakhstan and Türkiye provide two relevant settings for examining these post-adoption processes. Both markets have experienced substantial growth in digital retail, although their e-commerce environments differ in scale and development trajectories. In Kazakhstan, e-commerce accounted for 14.3% of total retail trade in 2025, with online marketplaces representing a substantial share of digital transactions [4]. In Türkiye, total e-commerce volume reached 4.57 trillion Turkish lira (TRY) in 2025, while retail e-commerce accounted for TRY 2.46 trillion [5]. As digital markets expand, consumers can compare retailers, prices, delivery conditions, products, and peer evaluations across platforms with relatively low search costs. Customer retention therefore becomes increasingly dependent on the quality and credibility of the total online shopping experience.

Existing research identifies several determinants of continued online purchasing. E-service quality influences satisfaction, trust, repurchase intentions, and loyalty through dimensions such as efficiency, fulfilment, privacy, reliability, and service recovery [3, 6, 7]. Perceived price fairness affects whether consumers regard a transaction as reasonable and acceptable and may influence behavioural outcomes directly or through trust and satisfaction [8-10]. Online reviews provide an additional information source when consumers evaluate products, sellers, and anticipated transaction outcomes, although their influence depends substantially on perceived credibility and authenticity [11-13]. Despite this extensive literature, these research streams are often examined separately. Studies of e-service quality typically focus on satisfaction, trust, or repurchase intention; price-fairness research concentrates on value judgements and perceptions of equitable treatment; and online-review research frequently examines purchase intention, electronic word-of-mouth, or review credibility. As a result, comparatively less attention has been given to how retailer-controlled service performance, economic evaluation, and consumer-generated information operate simultaneously within a single explanation of e-retailer loyalty.

This gap is particularly relevant in cross-country emerging-market research. Conducting a study in an emerging economy does not by itself establish an emerging-market contribution; the context must have a clear analytical role in the research question and interpretation [14]. The present study therefore does not treat Kazakhstan and Türkiye as interchangeable representatives of a homogeneous emerging-market category. Instead, the two settings provide a bounded comparative context for examining whether the proposed loyalty mechanisms display similar or different patterns across national e-commerce environments. E-service quality forms the operational component of this framework. It refers to consumers' evaluations of how effectively an online retailer facilitates information search, transactions, fulfilment, privacy protection, and post-purchase interaction. Established approaches conceptualise e-service quality as multidimensional rather than as a single website attribute. E-S-QUAL, for example, incorporates efficiency, fulfilment, system availability, and privacy, while related e-retail quality frameworks also emphasise reliability and customer-service performance [6, 15].

This multidimensional perspective is important because continued purchasing depends on more than interface convenience. Consumers also evaluate whether orders arrive as promised, whether personal and payment information appears secure, and whether the digital system performs consistently throughout the transaction. Research in Türkiye has linked service and recovery quality with perceived value and loyalty intentions [7], while subsequent studies have shown relationships among digital service quality, satisfaction, and repurchase intention [16]. Evidence from Pakistan similarly indicates that e-service quality and e-trust contribute to e-satisfaction and e-loyalty, while individual service-quality dimensions may vary in their

relative importance [3]. These findings support examining e-service quality as a higher-order evaluation within a broader loyalty process. Perceived price fairness represents a distinct economic evaluation. It concerns whether consumers regard a price and the process through which it is established as reasonable, justifiable, and acceptable relative to relevant comparison standards [8]. The concept therefore extends beyond absolute price level. In digital retail markets, consumers can rapidly compare competing offers, discounts, delivery fees, and price changes, making transparency and consistency particularly salient.

Prior research suggests that price fairness can influence post-purchase responses directly or through other relational evaluations. Studies of cross-border e-commerce have linked logistics service quality and price fairness with repurchase behaviour, with effects that may depend on prior experience [9]. Senali et al. [10] similarly identify an important role for perceived price fairness in relationships involving trust and purchase intention in social commerce. Research on dynamic pricing further demonstrates that consumers' reactions depend not only on price changes themselves but also on how those changes are perceived and justified [17]. Price fairness is therefore treated here as conceptually separate from e-service quality.

Trust in online reviews introduces a third mechanism: confidence in information generated largely outside the retailer's formal communication. Online reviews can reduce uncertainty by providing consumers with evidence about products, sellers, and previous customer experiences, but their informational value depends on credibility. Borchers [11] shows that trust in online reviews involves judgements concerning reviewers, content, platforms, and review systems. Concerns about manipulated or fabricated reviews further demonstrate that review information cannot automatically be assumed to be trustworthy [13].

Empirical research also links online reviews with trust and subsequent consumer behaviour. Peña-García et al. [12] demonstrate relationships between reviews, trust, and customer experience in an online marketplace context. Hanaysha et al. [18] identify customer reviews, website quality, perceived service quality, and assortment as antecedents of online purchasing in a model in which trust performs a mediating function. Tran et al. [19] further report connections among online reviews, loyalty, electronic word-of-mouth, and e-service quality. In the present framework, trust in online reviews is therefore treated as an informational evaluation that is distinct from direct perceptions of retailer-controlled service performance.

The national research contexts also reveal a useful asymmetry. Studies in Kazakhstan have focused primarily on e-commerce development, infrastructure, marketplace adoption, digital access, and participation. Earlier research identified logistics infrastructure and brand awareness as relevant to e-commerce development [20], while more recent work has documented differences in online-shopping participation related to access, digital skills, income, and regional conditions [21, 22]. These studies provide valuable evidence on market development and adoption but offer less insight into integrated post-adoption loyalty mechanisms.

Research in Türkiye has examined satisfaction, service quality, trust, perceived value, and repurchase intention more extensively [7, 16, 23, 24]. However, trust in online reviews has received less attention as a distinct informational mechanism considered jointly with e-service quality and perceived price fairness. Against this background, the present study examines how e-service quality, perceived price fairness, and trust in online reviews are associated with e-retailer loyalty among consumers in Kazakhstan and Türkiye. The central research question is: How do e-service quality, perceived price fairness, and trust in online reviews jointly shape e-retailer loyalty across the Kazakhstan and Türkiye samples?

The study contributes by integrating three conceptually distinct forms of consumer evaluation retailer-controlled service performance, perceived economic fairness, and trust in consumer-generated information within a single loyalty framework. It also provides a bounded cross-country assessment of whether these relationships exhibit similar patterns across two different e-commerce settings. The objective is not to generalise from two samples to emerging markets as a whole, but to clarify the mechanisms through which consumers translate service experiences, price evaluations, and socially generated information into continued loyalty to e-retailers.

II. STUDY METHODOLOGY

The study employed a quantitative cross-sectional survey design to examine the relationships among e-service quality, perceived price fairness, trust in online reviews, and e-retailer loyalty. Data were collected through an anonymous self-administered questionnaire administered via Google Forms. The survey was available in Russian, Turkish, and English to facilitate participation in the two target countries. All three versions followed the same questionnaire structure, construct sequence, and response format. After data collection, the three response sheets were harmonised into a single analytical dataset using identical variable names and coding rules.

Responses were collected between 25 September 2025 and 29 January 2026. Before accessing the questionnaire, participants were informed about the purpose of the study, the voluntary nature of participation, the anonymous treatment of their responses, and their right to participate only after agreeing to the stated conditions. No, directly identifying information, including names, telephone numbers, or personal identification numbers, was requested.

The survey yielded 288 complete questionnaires. Country screening identified 197 respondents residing in Kazakhstan and 87 in Türkiye. Four respondents reported residence outside the two target countries and were excluded from the comparative and inferential analyses. The principal analytical sample therefore consisted of 284 respondents. The distinction between collected responses (N = 288) and the analytical sample (N = 284) was maintained throughout the analysis.

Google Forms required responses to the questionnaire items; consequently, no item-level missing values were present. Before model estimation, the dataset was checked for country eligibility, response ranges, coding consistency, duplicate labels, reverse-coded items, and unusually invariant response patterns. Response-pattern screening was used as a diagnostic rather than as an automatic exclusion rule. Exact straight-lining and broader low-variability response patterns were therefore examined in separate robustness analyses to assess whether potentially inattentive responses materially affected the structural conclusions.

1. QUESTIONNAIRE AND MEASUREMENT

The questionnaire contained demographic and online-shopping questions followed by multi-item measures of the study constructs. Demographic variables included age, gender, education, employment status, country of residence, and frequency of online purchasing. These variables were used to characterise the sample and to assess compositional differences between the Kazakhstan and Türkiye subsamples. All perceptual measures used five-point Likert-type scales ranging from 1 (strongly disagree) to 5 (strongly agree), providing a consistent response format across the latent constructs.

E-service quality was specified as a higher-order construct comprising three lower-order dimensions: system usability/efficiency, fulfilment, and privacy/security. This specification reflects established multidimensional approaches to electronic service quality [6, 15]. System usability/efficiency captured respondents' perceptions of ease of interaction, efficiency, and usability of the digital interface. Negatively worded system-usability items were reverse-coded before estimation. Fulfilment assessed whether orders and products were delivered as promised, whereas privacy/security captured perceptions of protection of personal and payment-related information.

Perceived price fairness was measured through evaluations of whether online prices were fair, reasonable, and acceptable, consistent with the conceptualisation of price fairness as a subjective consumer judgement rather than an objective price level [8]. Trust in online reviews captured respondents' reliance on review information, perceptions of reviewer credibility, and the role of reviews in purchase evaluation, consistent with the distinction between the presence of reviews and trust in their informational value [11]. E-retailer loyalty represented the principal endogenous construct and captured repurchase intentions, continuance intentions, and commitment to continue purchasing from the e-retailer or platform.

2. ANALYTICAL PROCEDURE

The proposed model was estimated using PLS-SEM, which was appropriate for analysing multiple latent constructs, a hierarchical e-service quality specification, and simultaneous direct and indirect relationships.

The analysis proceeded sequentially. First, the measurement model was evaluated using indicator loadings, Cronbach's alpha, composite reliability (CR), average variance extracted (AVE), and the heterotrait–monotrait ratio (HTMT). AVE values of .50 or greater were used as the conventional reference for convergent validity, while HTMT values below .90 were used to assess discriminant validity. Second, the structural model was evaluated using path coefficients, coefficients of determination (R^2), effect sizes (f^2), and predictive-relevance statistics. Statistical inference for direct, indirect, and total effects was based on 5,000 nonparametric bootstrap resamples with 95% confidence intervals (CI). Predictive relevance was examined through cross-validated Q^2 statistics, supplemented by out-of-sample Q^2predict assessment. Third, robustness analyses were performed by re-estimating the model after excluding respondents exhibiting exact straight-lining and, separately, broader low-variability response patterns. Additional sensitivity models incorporated age, student status, gender, and online-shopping frequency as controls to determine whether the focal structural relationships were sensitive to demographic differences between the national subsamples.

Finally, cross-country comparison followed a measurement-invariance assessment. The Measurement Invariance of Composite Models (MICOM) procedure was applied before interpreting multi-group differences. Country-specific structural estimates were then compared using exploratory multi-group analysis and permutation-based tests. Because the national samples differed in size and demographic composition, these comparisons were treated as tests of structural stability rather than as population-level estimates of national differences.

III. RESULTS

A total of 288 complete questionnaires were collected. Four respondents reported residence outside Kazakhstan and Türkiye and were excluded from the inferential and country-comparative analyses. The final analytical sample therefore consisted of 284 respondents: 197 from Kazakhstan and 87 from Türkiye. Unless otherwise specified, all measurement and structural analyses reported below are based on this analytical sample.

1. SAMPLE CHARACTERISTICS AND DATA-QUALITY ASSESSMENT

The two country subsamples differed substantially in demographic composition (Table 1). Respondents aged 18–24 accounted for 33.5% of the Kazakhstan sample and 78.2% of the Türkiye sample. Similarly, students represented 21.3% of respondents in Kazakhstan compared with 67.8% in Türkiye. Significant cross-country differences were observed for age ($p < .001$, Cramér's $V = .425$), education ($p < .001$, $V = .378$), and employment status ($p < .001$, $V = .466$). Gender ($p = .702$, $V = .050$) and online-shopping frequency ($p = .190$, $V = .147$) did not differ significantly. Because of these demographic differences, country-specific structural estimates were interpreted cautiously and demographic controls were included in sensitivity analyses.

Table 1. Country-specific sample characteristics.

Characteristic	Kazakhstan (n = 197)	Türkiye (n = 87)	p
Age 18–24	33.5%	78.2%	< .001
Students	21.3%	67.8%	< .001
Female	64.5%	59.8%	.702
Online shopping several times/month or more	67.5%	71.3%	.190
Overall education distribution	—	—	< .001

Note. *V refers to the overall employment-status distribution rather than the student category alone.

No missing values were identified among the Likert-scale indicators. Twelve respondents provided identical responses across all 45 Likert items, indicating complete straight-lining, while a broader low-variability screening identified 19 potentially inattentive respondents. The principal analyses retained the complete analytical sample of N = 284. Robustness analyses excluding the 12 exact straight-liners and, separately, all 19 low-variability cases yielded the same substantive pattern of structural relationships.

2. MEASUREMENT MODEL

The measurement-model results are reported in Table 2. Negatively worded system-usability items were reverse-coded before estimation. Internal consistency was satisfactory for all constructs, with Cronbach's alpha ranging from .761 to .952 and composite reliability from .826 to .961. Convergent validity was supported for fulfilment (AVE = .778), privacy (AVE = .853), perceived price fairness (AVE = .861), trust in online reviews (AVE = .759), and e-retailer loyalty (AVE = .829). The higher-order e-service quality construct also demonstrated satisfactory reliability and convergent validity (α = .811, CR = .889, AVE = .730). The loadings of system usability/efficiency, fulfillment, and privacy on higher-order e-service quality were .703, .933, and .908, respectively.

System usability/efficiency was the only lower-order component with weak convergent validity. Its AVE was .325 and its indicator loadings ranged from .465 to .713. The items were retained because deleting them solely to improve AVE would alter the content of the original construct. A sensitivity analysis using only positively worded usability items increased AVE to approximately .703 but materially altered some structural estimates, particularly PF → TR. The original specification was therefore retained, while the system usability/efficiency dimension was interpreted cautiously. All HTMT coefficients were below .90; the maximum value was .866. Thus, discriminant validity was generally supported. Full-collinearity VIF values ranged from 2.414 to 4.572. Because not all values were below 3.3, and because VIF alone cannot rule out common-method variance, no categorical claim regarding the absence of common-method bias was made.

Table 2. Measurement-model assessment.

Construct	α	CR	AVE	Indicator/loading range	Assessment
System usability/efficiency	.761	.826	.325	.465–.713	Weak convergent validity
Fulfillment	.952	.961	.778	.871–.891	Supported
Privacy	.914	.946	.853	.914–.931	Supported
Price fairness	.919	.949	.861	.914–.936	Supported
Trust in online reviews	.947	.957	.759	.820–.904	Supported
E-retailer loyalty	.931	.951	.829	.902–.922	Supported
Higher-order e-service quality	.811	.889	.730	.703–.933	Supported

Note. Maximum HTMT = .866. Detailed indicator loadings and the complete HTMT matrix are reported in the Supplementary Material.

3. STRUCTURAL MODEL, MEDIATION, AND PREDICTIVE RELEVANCE

The structural results are summarized in Table 3. Statistical inference was based on 5,000 nonparametric bootstrap resamples and 95% confidence intervals. E-service quality was positively associated with trust in online reviews (β = .666, p < .001, 95% CI [.552, .759]), with a large effect size (f^2 = .566). Perceived price fairness was also positively associated with trust (β = .182, p = .001, 95% CI [.079, .293]), although its effect size was small (f^2 = .042). Together, the predictors explained 65.8% of the variance in trust (R^2 = .658). In the tables, ESQ denotes e-service quality, PF denotes perceived price fairness, TR denotes trust in online reviews, and LOY denotes e-retailer loyalty.

Table 3. Structural model and mediation results.

Relationship	β	95% CI	p	f^2
ESQ → TR	.666	[.552, .759]	< .001	.566
PF → TR	.182	[.079, .293]	.001	.042
ESQ → LOY	.540	[.401, .656]	< .001	.274
PF → LOY	.085	[−.032, .207]	.159	.010
TR → LOY	.268	[.170, .389]	< .001	.083
ESQ → TR → LOY	.179	[.105, .274]	< .001	—
PF → TR → LOY	.049	[.019, .092]	.001	—

Note. R^2 = .658 for TR and .703 for LOY. Total effects were β = .719 for ESQ → LOY and β = .134 for PF → LOY.

E-service quality also showed a significant direct association with loyalty (β = .540, p < .001, 95% CI [.401, .656]; f^2 = .274). Trust was positively associated with loyalty (β = .268, p < .001, 95% CI [.170, .389]; f^2 = .083). In contrast, the direct PF → LOY path was not statistically significant at the 5% level (β = .085, p = .159, 95% CI [−.032, .207]; f^2 = .010). The model explained 70.3% of the variance in loyalty (R^2 = .703). The indirect ESQ → TR → LOY effect was significant (β = .179, p < .001, 95% CI [.105, .274]). Because the corresponding direct effect remained significant, the result was consistent with partial mediation. The indirect PF → TR → LOY effect was also significant (β = .049, p = .001, 95% CI [.019, .092]), whereas the direct PF → LOY effect was nonsignificant, supporting an indirect-only mediation pattern.

Predictive relevance was positive for both endogenous constructs. Cross-validated Q^2 values were .647 for trust and .689 for loyalty, while Q^2predict values were .650 and .697, respectively. These results indicate that the model retained predictive information under cross-validation. The main structural estimates also remained stable after controlling for age, student status, gender, and online-shopping frequency. Adjusted coefficients were β = .622 for ESQ → TR, β = .166 for PF → TR, β = .540 for ESQ → LOY, β = .272 for TR → LOY, and β = .081 for PF → LOY. Thus, the primary findings were not explained solely by the unequal demographic composition of the two country samples.

4. MEASUREMENT INVARIANCE AND EXPLORATORY MULTI-GROUP ANALYSIS

Measurement invariance was assessed before interpreting cross-country differences. Compositional invariance was supported for price fairness, trust, and loyalty, but not for higher-order e-service quality (c = .9910; 5% permutation quantile = .9967; p = .002). Consequently, partial measurement invariance was not established for the complete model, and the subsequent multi-group comparison was treated as exploratory.

Table 4. Exploratory Kazakhstan–Türkiye multi-group comparison.

Path	Kazakhstan β	Türkiye β	Δβ	95% CI for Δβ	Permutation p
ESQ → TR	.724	.586	.138	[−.100, .384]	.255
PF → TR	.162	.098	.064	[−.177, .330]	.566
ESQ → LOY	.466	.563	−.097	[−.350, .142]	.520
PF → LOY	.202	.040	.161	[−.088, .416]	.256
TR → LOY	.274	.223	.051	[−.175, .302]	.692

The model explained more variance in Kazakhstan than in Türkiye: R^2 values for trust were .747 and .402, respectively, while those for loyalty were .795 and .552. However, none of the structural coefficient differences was statistically significant. Given the incomplete invariance of higher-order e-service quality and the smaller Türkiye subsample, these country-specific differences should be interpreted as exploratory descriptive variation rather than evidence of structural moderation. Overall, e-service quality showed the largest estimated total association with loyalty and was related to loyalty both directly and indirectly through trust in online reviews. Perceived price fairness was associated with loyalty mainly through trust rather than through a statistically significant direct effect. These conclusions were robust to response-quality screening and demographic adjustment, whereas cross-country comparisons require more cautious interpretation.

IV. DISCUSSION

The findings support a mechanism-based interpretation of e-retailer loyalty in which operational experience, economic evaluation, and socially generated information perform related but distinct functions. Rather than treating e-service quality, perceived price fairness, and trust in online reviews as parallel antecedents of loyalty, the present framework suggests that these evaluations enter the loyalty process through different channels. This distinction is theoretically useful because it shifts attention from identifying additional predictors toward understanding how different forms of consumer judgement become integrated into a continuing relationship with an e-retailer.

E-service quality appears to represent the operational foundation of this process. In online retailing, consumers cannot directly inspect many transaction attributes before purchase and must therefore rely on

the performance of the digital interface, fulfilment processes, privacy protection, information accuracy, and problem resolution. Consistent performance across these dimensions reduces uncertainty and provides repeated evidence that the retailer can execute transactions reliably. This interpretation is consistent with multidimensional conceptualisations of e-service quality [6, 15] and with prior research emphasizing the importance of fulfilment and reliability for continued use and post-purchase evaluations [3]. The present findings therefore reinforce the argument that loyalty in digital retail environments is grounded first in the perceived dependability of the service system itself.

At the same time, the measurement results suggest that not all components of e-service quality are equally stable empirically. The weaker convergent validity of the system usability/efficiency dimension indicates that consumers may not evaluate positively and negatively worded usability statements as a single homogeneous component. The sensitivity analysis further suggests that alternative specifications of this dimension can influence downstream structural relationships. This issue should not be treated merely as a technical limitation. It may reflect the multidimensional nature of consumers' usability judgements, in which ease of use, frustration, efficiency, and complexity are related but not perfectly interchangeable experiences. Future research should therefore refine the operationalisation of this component rather than assuming that a single aggregate usability score fully captures how consumers assess digital service performance.

The emerging-market context provides an important setting for interpreting these relationships, although institutional explanations should remain cautious. The study did not measure infrastructure quality, regulatory trust, payment security, logistics capacity, or other institutional conditions directly. Consequently, the observed patterns cannot be attributed causally to specific characteristics of Kazakhstan or Türkiye. Nevertheless, previous work in emerging markets has shown that logistics, digital infrastructure, service reliability, trust, and access remain important for e-commerce adoption and continued use [1, 3, 21]. Against this background, the present findings suggest that direct retailer performance remains central even when consumers operate within broader environments characterized by different levels of digital-market development.

Trust in online reviews performs a different function. It reflects confidence in information originating primarily from other consumers and the review environment rather than from the retailer's own service execution. This distinction is important because online purchase decisions increasingly depend on the interaction between first-hand experience and socially generated information. Consumers may use reviews not simply to evaluate unfamiliar products before an initial purchase, but also to validate whether their own experiences are consistent with those of other users.

This interpretation aligns with Borchers [11], who conceptualizes review trust as depending on assessments of reviewers, content, platforms, and the review system itself. It is also consistent with evidence that review manipulation can undermine confidence in online marketplaces [13]. From this perspective, trust in reviews functions as an informational mechanism that helps consumers assess the predictability and credibility of future transactions. When personal experience, retailer performance, and user-generated information are mutually consistent, consumers may perceive lower uncertainty about subsequent purchases. Review systems therefore matter not only at the information-search stage but also in maintaining established customer relationships.

Perceived price fairness appears to operate through yet another mechanism. The findings do not support a simple interpretation in which favourable pricing directly produces loyalty. Instead, price fairness seems more closely related to how consumers judge the legitimacy and transparency of the transaction. This interpretation is consistent with Xia et al. [8], who argue that fairness assessments depend on comparison, justification, and perceived treatment rather than on price level alone. In online markets, where competing offers can be compared rapidly, consumers may distinguish between a low price and a price they regard as understandable, consistent, and justified.

Accordingly, pricing may contribute to longer-term loyalty by supporting confidence in the commercial environment surrounding the transaction. This interpretation is consistent with studies linking price fairness to trust, satisfaction, and repurchase-related evaluations [9, 10]. The managerial implication is therefore not simply to reduce prices. Promotional competitiveness may attract transactions, but transparent fees,

understandable discounts, consistent price changes, and clearly communicated delivery costs may be more important for sustaining confidence over time.

The cross-country comparison requires particular caution. Although the same broad theoretical mechanisms can be examined in both national samples, the measurement-invariance analysis does not justify strong claims that all constructs function identically across Kazakhstan and Türkiye. In particular, the incomplete compositional invariance of higher-order e-service quality means that structural differences involving this construct should be regarded as exploratory rather than as evidence of national moderation. This qualification is important because numerical differences between country-specific coefficients can otherwise be overinterpreted as culturally or institutionally determined effects.

The demographic composition of the samples further reinforces this caution. The Türkiye subsample contains a substantially larger proportion of younger respondents and students, while the Kazakhstan sample is more heterogeneous in age and employment. Although the principal relationships remained stable after demographic adjustment, such compositional differences still limit the strength of country-level interpretation. Future comparative research should therefore employ larger and more balanced subsamples, test measurement invariance before substantive group comparisons, and incorporate market-level characteristics alongside individual demographic variables.

From a managerial perspective, the findings imply an ordered rather than fragmented approach to loyalty formation. Reliable core service performance should remain the first priority, particularly fulfilment, privacy protection, interface usability, accurate information, and effective recovery from service problems. Review credibility should be treated as part of the retailer's broader information ecosystem, even when reviews are consumer generated. Verified-purchase mechanisms, transparent moderation policies, and procedures for identifying suspicious content may help preserve confidence in this environment. Pricing strategies should complement these efforts through transparency and consistency rather than relying exclusively on discount intensity.

Several limitations remain. The cross-sectional design restricts causal interpretation, while self-reported measures may still be affected by common-method variance. The non-probability sampling approach limits population-level generalisation, and the smaller Türkiye subsample reduces sensitivity to small group-specific effects. The weaker measurement properties of the system usability/efficiency dimension also indicate a need for further scale refinement. Longitudinal designs, behavioural transaction data, balanced cross-country samples, improved usability measurement, and replication across additional emerging-market settings would provide a stronger basis for assessing the durability and generalisability of the proposed mechanisms.

The study contributes by distinguishing the roles played by retailer-controlled service performance, consumer evaluations of pricing, and trust in socially generated information. Their contribution to loyalty is complementary but not equivalent. This mechanism-oriented perspective offers a more precise explanation of how consumers translate repeated digital-market experiences into continuing relationships with e-retailers while also defining clear boundaries for cross-country interpretation.

1. LIMITATIONS

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design captures consumer perceptions at a single point in time and therefore does not establish causal or temporal relationships among e-service quality, perceived price fairness, trust in online reviews, and e-retailer loyalty. Longitudinal or panel designs would provide stronger evidence regarding the direction and stability of these relationships. Second, the analysis relies on self-reported survey data. Although robustness checks were performed and the main structural estimates remained stable after response-quality screening, common-method variance cannot be ruled out. Full-collinearity VIF values did not satisfy the <3.3 criterion for every construct. Future research could combine perceptual measures with behavioural indicators such as repeat purchases, transaction histories, returns, platform usage, and verified review activity. Third, the voluntary non-probability sample limits population-level generalisation. The analytical sample included 197 respondents from Kazakhstan and 87 from Türkiye, and the two groups differed substantially in age, education, and employment composition. Although demographic adjustment

did not materially change the principal structural relationships, the unequal sample composition and limited power of the smaller Türkiye subgroup constrain strong national comparisons. Fourth, measurement invariance was not fully established because compositional invariance failed for higher-order e-service quality. Cross-country comparisons should therefore remain exploratory. In addition, the system usability/efficiency dimension showed weak convergent validity, indicating a need for further scale refinement. Future studies should employ larger and more balanced samples, improved usability measures, longitudinal designs, behavioural data, and replication across additional national e-commerce contexts.

V. CONCLUSION

This study examined e-retailer loyalty by integrating three distinct forms of consumer evaluation within one structural framework: e-service quality, perceived price fairness, and trust in online reviews. The findings indicate that these evaluations are related to loyalty through different mechanisms rather than functioning as interchangeable predictors. E-service quality represents the operational basis of the relationship, trust in online reviews provides an informational mechanism, and perceived price fairness contributes primarily through the credibility and legitimacy consumers assign to the wider transaction environment. The principal implication is that loyalty in digital retailing is not generated simply by combining favourable service, price, and review perceptions. Instead, the evidence suggests a layered process. Reliable service performance is directly associated with continued purchasing intentions and also supports trust in the information environment surrounding the transaction. Trust in online reviews, in turn, contributes to loyalty and transmits part of the relationship between service evaluations and continued purchasing. Perceived price fairness follows a different pattern: its contribution to loyalty appears primarily indirect, operating through trust rather than through a statistically significant direct relationship. This distinction has practical consequences for e-retail management. The first priority should remain the reliability of core service processes. Fulfilment accuracy, privacy protection, usable digital interfaces, transparent information, and effective problem resolution should be treated as retention mechanisms rather than as routine operational functions. Weaknesses in these areas cannot necessarily be compensated for by promotional pricing or favourable reviews.

The second priority concerns the credibility of consumer-generated information. Reviews form part of the broader trust infrastructure of an online marketplace. Verified-purchase indicators, transparent moderation practices, procedures for identifying suspicious content, and clear review policies can help consumers evaluate user-generated information more confidently. Because review trust is connected with both service and price evaluations, its managerial relevance extends beyond the initial purchase decision. Pricing should therefore be managed primarily through transparency, consistency, and perceived legitimacy rather than through discount intensity alone. Consumers may respond positively to competitive prices, but long-term confidence is more likely to depend on whether prices, delivery fees, discounts, and additional charges are understandable and consistently applied. Price management should consequently be coordinated with broader trust-building and service-quality strategies.

The Kazakhstan–Türkiye comparison provides a more cautious contribution. The principal structural patterns remained stable after demographic adjustment and response-quality screening, but the evidence does not justify strong claims that the two national samples share an identical measurement structure. Compositional invariance was not established for higher-order e-service quality, while the Türkiye sample was smaller and demographically younger. Accordingly, observed coefficient differences should be viewed as exploratory rather than as evidence of national moderation. The study therefore contributes more strongly by identifying mechanisms that can be examined across different e-commerce environments than by claiming country-specific behavioural differences.

Methodologically, the analysis also highlights the importance of evaluating lower-order measurement quality within hierarchical constructs. The weak convergent validity of the system usability/efficiency dimension shows that acceptable higher-order reliability does not eliminate potential problems at the component level. Future studies should refine this dimension and test whether alternative formulations improve measurement without altering substantive structural relationships. The study contributes by

distinguishing operational service performance, perceived economic fairness, and trust in consumer-generated information as complementary but non-equivalent elements of e-retailer loyalty. This perspective provides a more precise basis for both theory development and managerial decision-making in post-adoption e-commerce settings.

Conflicts of Interest

The authors declare no conflicts of interest or competing interests related to this study.

Author Contributions

Conceptualization, K.A.B. and Y.D.; methodology, K.A.B. and Y.D.; validation, Y.D. and Ş.Ç.; formal analysis, K.A.B. and Ş.Ç.; investigation, K.A.B. and Y.D.; resources, K.A.B. and Y.D.; data curation, K.A.B. and Ş.Ç.; writing—original draft preparation, K.A.B.; writing—review and editing, Y.D. and Ş.Ç.; visualization, K.A.B. and Ş.Ç.; supervision, Y.D. and Ş.Ç.; project administration, Y.D. All authors have read and agreed to the published version of the manuscript.

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Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request. The dataset is not publicly deposited because it contains individual-level survey responses collected specifically for this research.

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Ethical Approval

Participation in the study was voluntary. Before completing the online questionnaire, respondents were informed about the purpose of the research, the anonymous treatment of their responses, and the voluntary nature of participation. Respondents proceeded with the survey only after indicating their consent to participate. No, directly identifying personal information was collected.

Consent for publication

Not applicable. The manuscript does not contain identifiable personal data, images, or other information requiring individual consent for publication.

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