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Service fairness and business-to-business customer loyalty in South African cement market supply relationships

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Orientation: Service fairness in industrial business-to-business procurement remains under-examined, particularly in emerging-market supply relationships.

Research purpose: This study examined the associations between four service fairness dimensions and business-to-business (B2B) customer loyalty in South African cement supply relationships.

Motivation for the study: Evidence on multidimensional fairness in industrial procurement remains limited despite repeated buyer-supplier interactions and operational dependence.

Research design, approach and method: A quantitative cross-sectional online survey was conducted among organisational cement buyers in Gauteng. Of 300 survey links distributed, 220 completed questionnaires were received. After seven multivariate outliers and five cases with missing model indicators were excluded, 208 responses were analysed. Statistical package for the social sciences (SPSS) was used for supplementary one-way analysis of variance (ANOVA), while analysis of moment structures (AMOS) was used for confirmatory factor analysis (CFA) and structural equation modelling. Discriminant validity was assessed using the Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio.

Main findings: The model explained 56.5% of loyalty variance. Procedural fairness ($\beta = 0.438$, $p = 0.003$) and informational fairness ($\beta = 0.186$, $p = 0.006$) had significant positive associations with loyalty. Distributive and interpersonal fairness were not significant. The highest HTMT ratio was 0.887. The duration of support, but not the preferred brand, was associated with differences in several construct scores.

Practical/managerial implications: Cement suppliers should apply ordering, allocation and complaint-resolution procedures consistently and provide timely, specific and credible explanations when supply conditions change.

Contribution/value-add: The findings extend service fairness model (FAIRSERV) to industrial procurement and identify process-level and information-level fairness as the clearest unique fairness correlates of B2B loyalty in the sampled relationships.

Keywords: B2B customer loyalty; cement supply; distributive fairness; emerging markets; FAIRSERV; informational fairness; procedural fairness; South Africa.

Introduction

Background

Cement is a hydraulic binding material that is central to concrete and mortar production (Taylor 1997). African cement markets have expanded alongside infrastructure development, urbanisation and regional trade, but their growth is accompanied by environmental, regulatory, quality-control and competition challenges (Roberts, Simbanegavi & Vilakazi 2023; Schmidt et al. 2018). In this setting, technical product performance remains essential, yet cement suppliers also compete through the reliability of their processes, explanations and relationship practices (Meyer & Pretorius 2023).

Cement is often treated as a highly commoditised industrial product. Nevertheless, repeated ordering, delivery coordination, allocation decisions and complaint handling create an ongoing service relationship in which organisational buyers evaluate both what they receive and how suppliers deal with them. Service fairness is therefore relevant because it captures buyers'

judgements about outcomes, procedures, interpersonal treatment and information provision across supplier encounters (Carr 2007).

Relationship marketing research explains durable business-to-business (B2B) relationships through credible exchange behaviour, relational value and expectations of continuity (Morgan & Hunt 1994; Palmatier et al. 2006; Rauyruen & Miller 2007). Fairness adds a more specific evaluative mechanism: buyers judge whether supplier outcomes are equitable, procedures are consistently applied, representatives act respectfully, and explanations are adequate. These judgements may become especially salient where buyers depend on reliable supply and cannot easily absorb delivery disruption.

The South African cement sector provides a pertinent setting for this analysis. Research has documented regional concentration, cartel conduct and competition concerns in African cement markets (Roberts et al. 2023; Vilakazi & Roberts 2019), while South African construction procurement is expected to operate transparently and competitively despite persistent implementation constraints (Tau, Ogunbayo & Aigbavboa 2024). Supplier relationship management is also important to participation and continuity in the local cement value chain (Rasdien, Pooe & Munyanyi 2024). These conditions make fairness judgements relevant to the credibility of supplier-buyer relationships.

Existing B2B studies have linked fairness to contract renewal, trust and loyalty, but much of the evidence concerns discrete services, service recovery or sectors outside industrial cement procurement (Cassia, Haugland & Magno 2021; Jambulingam, Kathuria & Nevin 2011; Oflaç, Sullivan & Kaya Aslan 2021). The simultaneous unique associations of the four service fairness model (FAIRSERV) dimensions with loyalty in South African cement supply relationships have received limited empirical attention.

To address this gap, the study integrated FAIRSERV with relationship marketing theory (RMT) and social exchange theory (SET). The model treated distributive, procedural, interpersonal and informational fairness as conceptually distinct but related evaluations associated with B2B customer loyalty. The study pursued the following research objectives (ROs):

RO1: To assess B2B customers' perceptions of distributive, procedural, interpersonal and informational fairness in cement supply relationships.

RO2: To test the associations between the four service fairness dimensions and B2B customer loyalty.

RO3: To examine, as supplementary evidence, whether retained construct scores differed by preferred cement brand and duration of support.

RO4: To evaluate a structural model linking service fairness dimensions with B2B customer loyalty in the South African cement supply context.

The study contributes in three respects. Firstly, it applies the four-dimensional FAIRSERV framework to an industrial B2B procurement context. Secondly, it estimates the unique association of each fairness dimension with loyalty while accounting for shared variance among the dimensions. Thirdly, it explains the findings through RMT and SET by treating fair procedures and credible explanations as relational governance signals that may support continued exchange.

Problem statement and research gap

South African cement buyers operate in a market shaped by supplier concentration, procurement regulation and recurring coordination requirements (Tau et al. 2024; Vilakazi & Roberts 2019). Although fairness is relevant to such exchanges, existing evidence does not establish whether outcome fairness, procedural consistency, interpersonal treatment and information provision make equivalent unique contributions to loyalty. This omission limits theoretical understanding of multidimensional fairness in industrial relationships and provides managers with little guidance on which fairness practices warrant priority. The study therefore tested a focused model of four fairness dimensions and B2B customer loyalty.

Literature review

Business-to-business relationships

Business-to-business marketing has progressively shifted from isolated transactions towards the management of enduring exchange relationships. Relationship continuity is supported when suppliers deliver value reliably and behave in ways that reinforce trust and commitment (Morgan & Hunt 1994; Palmatier et al. 2006). In industrial markets, where comparable products may be available from several suppliers, relational processes can differentiate suppliers beyond technical quality and price.

Evidence from B2B markets indicates that customer experience, satisfaction and relationship quality are associated with loyalty, although the strength of these relationships varies across contexts and customer groups (Human et al. 2020; Masitenyane & Dhurup 2023). Fairness provides a complementary explanation because it focuses on how buyers evaluate supplier conduct during exchanges rather than on overall service quality alone.

Service fairness in business-to-business relationships

Service fairness refers to a customer's evaluation of whether service outcomes, procedures, interpersonal conduct and explanations are justifiable and impartial (Carr 2007). In B2B settings, these evaluations arise across repeated transactions involving multiple organisational representatives. Fairness can therefore operate as a signal of whether a supplier is a credible exchange partner. Prior studies show that procedural and distributive fairness can shape contract renewal

intentions in discrete B2B transactions, while interfirm justice is also associated with information sharing behaviour (Cassia et al. 2021; Huo, Liu & Li 2023).

In cement procurement, the four dimensions have concrete operational referents: (1) allocation and delivery outcomes reflect distributive fairness; (2) ordering and complaint handling rules reflect procedural fairness; (3) courtesy and respect reflect interpersonal fairness; and (4) explanations for shortages, price changes or delays reflect informational fairness. Examining the dimensions simultaneously is necessary because buyers may distinguish them conceptually while still evaluating some of them in closely related ways.

Loyalty in business-to-business relationships

Business-to-business customer loyalty denotes an organisational buyer's intention and commitment to maintain a supplier relationship over time. It includes continuity intentions and attitudinal attachment rather than a single purchase decision (Human et al. 2020; Rauyruen & Miller 2007). In South Africa's concrete-products market, relationship quality and commitment have been linked to loyalty and repurchase intentions (Masitenyane & Dhurup 2023). The present study focused on loyalty as the substantive relational outcome and excluded a separate repurchase-intention construct because the questionnaire's repurchase items duplicated the wording of the original loyalty items.

Theoretical grounding

Relationship marketing theory

Relationship marketing theory explains how firms establish, maintain and strengthen exchange relationships over time (Berry 1983; Morgan & Hunt 1994). In B2B markets, continuity depends on credible conduct, mutual value and reliable interaction between exchange partners. Applied to cement procurement, RMT suggests that fairness evaluations inform whether a supplier is regarded as a dependable long-term partner. Consistent procedures and credible explanations are particularly relevant because they help buyers coordinate orders and interpret supply variations.

Social exchange theory

Social exchange theory complements RMT by explaining how relational conduct is evaluated through reciprocity and balanced exchange (Blau 1964; Cropanzano & Mitchell 2005). When suppliers apply procedures consistently, allocate outcomes fairly, communicate adequately and treat representatives respectfully, buyers may interpret these actions as evidence of goodwill and fulfilment of relational obligations. Loyalty can then be understood as a reciprocal orientation towards continued exchange. Conversely, unfair conduct may weaken the perceived balance of the relationship.

Hypothesis development and conceptual framework

Service fairness model dimensions

The service fairness model adapts organisational justice principles to service encounters and distinguishes four customer-facing dimensions: (1) distributive, (2) procedural, (3) interpersonal and (4) informational fairness (Carr 2007). The distinction is important in B2B procurement because buyers evaluate both the economic substance of an exchange and the relational processes through which it is administered. The dimensions are related but not interchangeable: (1) distributive fairness concerns outcomes, (2) procedural fairness concerns decision processes, (3) interpersonal fairness concerns respectful treatment, and (4) informational fairness concerns the quality of explanations (Colquitt et al. 2001).

The model, therefore, estimated the four dimensions concurrently. This specification allows each path to represent the dimension's unique statistical association with loyalty after accounting for covariance among the fairness evaluations. It also provides a direct test of whether all four dimensions contribute equally in an industrial supply setting.

Distributive fairness and loyalty

Distributive fairness concerns the perceived equity of outcomes received in an exchange. In cement supply, relevant outcomes include access to stock, delivery allocations and the consistency of service outcomes across customers. Fair outcomes can signal that a supplier recognises the buyer's inputs and obligations, which may support relationship continuity (Chen, Lewis & Liyanage 2026; Jambulingam et al. 2011). Accordingly, the following hypothesis (H) was tested:

> **H1:** Distributive fairness is positively associated with B2B customer loyalty in South African cement supply relationships.

Procedural fairness and loyalty

Procedural fairness concerns the consistency, neutrality and transparency of the processes used to reach service decisions. In cement procurement, it is reflected in ordering rules, delivery scheduling, complaint handling and responses to buyer requests. Fair procedures reduce the likelihood that buyers will regard supplier decisions as arbitrary and can sustain favourable relationship evaluations even when outcomes are constrained (Carr 2007; Cassia et al. 2021). Thus:

> **H2:** Procedural fairness is positively associated with B2B customer loyalty in South African cement supply relationships.

Interpersonal fairness and loyalty

Interpersonal fairness concerns whether supplier representatives treat buyers with dignity, respect, courtesy and propriety (Bies & Moag 1986; Colquitt et al. 2001). Respectful conduct can reinforce the relational quality of repeated encounters and demonstrate that the buyer is valued as an exchange partner. In B2B cement supply, this treatment occurs during ordering, delivery coordination and problem resolution. Therefore:

H3: Interpersonal fairness is positively associated with B2B customer loyalty in South African cement supply relationships.

Informational fairness and loyalty

Informational fairness concerns the adequacy, truthfulness, timeliness and specificity of explanations provided for decisions and outcomes (Colquitt et al. 2001). Cement buyers may require credible explanations for stock shortages, delivery changes, price adjustments or service failures. Such information enables buyers to understand supplier conduct and plan their own operations, thereby supporting perceptions of reliability (Carr 2007; Huo et al. 2023). Hence:

H4: Informational fairness is positively associated with B2B customer loyalty in South African cement supply relationships.

Figure 1 presents the hypothesised direct associations between the four service fairness dimensions and B2B customer loyalty.

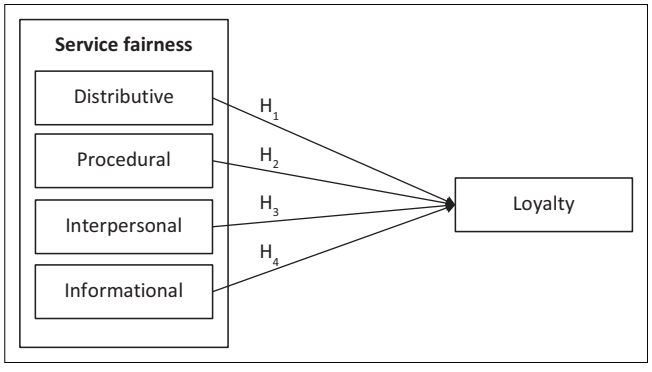
Research methods and design

Research design, target population and sample

The study used a quantitative cross-sectional survey design. The target population comprised organisational buyers and users of cementitious products in Gauteng, including civil and building engineering contractors, concrete product manufacturers, and ready-mix concrete suppliers. These organisations were relevant because their operations depend on repeated cement procurement and supplier coordination. The sampling frame was drawn from entities registered with the Construction Industry Development Board (CIDB). The achieved complete-case sample of 208 observations exceeded the commonly applied minimum of 200 observations for a moderately specified covariance-based structural equation model and was evaluated alongside model complexity and fit (Hair et al. 2019).

Data collection and measurement instrument

After ethical clearance had been obtained, publicly available organisational contact details were used to approach eligible CIDB-registered entities. A link to the online questionnaire was distributed to 300 contacts between August 2025 and February 2026. A total of 220 completed questionnaires were received, giving a gross response rate of 73.3%. Seven multivariate outliers were removed using Mahalanobis distance across the substantive Likert-scale items ($p < 0.001$), and five further cases with missing observations on the AMOS indicators were excluded. The final complete-case dataset comprised 208 responses, representing a usable response rate of 69.3% of the distributed invitations. Because participation was voluntary and the sample was confined to formal, CIDB-registered organisations in Gauteng, inference is bounded to comparable organisational buyers rather than all cement users in South Africa.



H, hypothesis.

FIGURE 1: Hypothesised structural model of service fairness and business-to-business customer loyalty.

The questionnaire contained demographic questions and five-point Likert-type measures ranging from 1 (strongly disagree) to 5 (strongly agree). The final CFA retained distributive fairness (DIST1–DIST3), procedural fairness (PROC1–PROC4), interpersonal fairness (INTER1, INTER3 and INTER4), informational fairness (INFO1–INFO4) and B2B customer loyalty (LOY3–LOY5). Interpersonal fairness 2 (INTER2) ('My preferred cement supplier staff members treat me with an unbiased attitude') was removed because its standardised loading in the initial model was 0.571 and its reference to an 'unbiased attitude' overlapped conceptually with bias-free procedures and outcomes. B2B customer loyalty 1 and 2 (LOY1 and LOY2) had initial loadings of 0.291 and 0.253, respectively. Their residuals displayed a large modification index (MI = 105.042). Removing these indicators reduced construct contamination and retained the three indicators that directly expressed loyalty and long-term commitment. The refined loyalty construct remained reliable (composite reliability [CR] = 0.921) and convergently valid (average variance extracted [AVE] = 0.799). Item removal was therefore guided jointly by construct meaning, standardised loadings and localised model diagnostics rather than by fit improvement alone.

Data analysis

Statistical Package for the Social Sciences (SPSS) was used to prepare the data, compute descriptive statistics and conduct supplementary one-way ANOVA. Analysis of Moment Structure (AMOS) was used to estimate the CFA and structural equation model following the two-step approach of Anderson and Gerbing (1988). Model fit was assessed using Minimum Discrepancy divided by Degrees of Freedom (CMIN/DF), Goodness-of-Fit Index (GFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA). Reliability and convergent validity were evaluated using Cronbach's alpha, CR and AVE. Discriminant validity was assessed using both the Fornell-Larcker criterion and the heterotrait-monotrait ratio (HTMT); an HTMT value below 0.90 was used for conceptually related constructs (Fornell & Larcker 1981; Henseler, Ringle & Sarstedt 2015). A residual covariance between DIST1 and DIST2 was retained because both items referred narrowly to equitable outcome allocation; no cross-construct residual covariances were specified. For the supplementary ANOVA, effect size was reported as eta squared (η^2). Tukey HSD comparisons were

used when homogeneity of variance was tenable, whereas Games–Howell comparisons were used when it was violated (Hair et al. 2019). Preferred brand and duration of support were treated as exploratory grouping variables rather than structural predictors.

Ethical considerations

Ethical clearance was obtained from the School of Consumer Intelligence and Information Systems Research Ethics Committee of the University of Johannesburg (reference 2025SCiiS085; valid for 3 years). Written informed consent was obtained before participation. Responses were coded and analysed in aggregate form to protect respondent anonymity and confidentiality.

Results

The results are reported for the respondent profile, supplementary group comparisons, measurement model and structural model.

Respondent profile

The sample comprised respondents with direct exposure to cement supplier relationships. Buyers (41.3%) and procurement officers (26.0%) formed the largest occupational groups. Most respondents (71.2%) had supported their supplier for at least 5 years, including 30.3% with relationships of 10 years or longer. Table 1 presents the profile of the 208 complete cases.

TABLE 1: Respondent demographic profile (N = 208).

Variable	Category	*n*	%
Gender	Male	131	63.0
	Female	77	37.0
Ethnicity	White person	25	12.0
	African person	96	46.2
	Coloured person	52	25.0
	Asian person	30	14.4
	Missing and/or not disclosed person	5	2.4
Age category	30 years or below	13	6.2
	31–35 years	24	11.5
	36–40 years	56	26.9
	41–45 years	61	29.3
	46 years and above	37	17.8
	Missing and/or not disclosed	17	8.2
Educational qualifications	Diploma or below	27	13.0
	Bachelor's degree	107	51.4
	Honours degree	47	22.6
	Master's degree	13	6.2
	Missing and/or not disclosed	14	6.7
Occupation	Buyer	86	41.3
	Procurement officer	54	26.0
	Procurement manager	34	16.3
	Senior manager	32	15.4
	Missing and/or not disclosed	2	1.0
Preferred cement brand	AfriSam	53	25.5
Preferred brand (cont.)	Lafarge	69	33.2
	PPC	38	18.3
	Mamba	6	2.9
	Sephaku	40	19.2
	Missing and/or not disclosed	2	1.0
Duration of support	Between 1 and up to 3 years	12	5.8
	Between 3 and up to 5 years	46	22.1
	Between 5 and up to 10 years	85	40.9
	10 years or more	63	30.3
	Missing and/or not disclosed	2	1.0

Note: Percentages are based on the complete-case model dataset. Missing and 'prefer not to disclose' responses are reported where applicable.
PPC, Pretoria Portland Cement.

Supplementary group-difference analysis

One-way ANOVA was used to examine whether construct scores based on the indicators retained in the final CFA differed across preferred brand and duration of support groups. Table 2 reports the omnibus tests and eta squared effect sizes.

Preferred cement brand was not associated with statistically significant differences in any retained construct. Duration of support was associated with distributive fairness, $F(3, 202) = 5.565$, $p = 0.001$, $\eta^2 = 0.076$; procedural fairness, $F(3, 202) = 4.046$, $p = 0.008$, $\eta^2 = 0.057$; informational fairness, $F(3, 202) = 2.925$, $p = 0.035$, $\eta^2 = 0.042$; and B2B customer loyalty, $F(3, 202) = 6.015$, $p < 0.001$, $\eta^2 = 0.082$. Table 3 reports the adjusted post-hoc comparisons for these significant duration effects.

The significant comparisons indicate that the shorter-duration groups generally reported higher distributive fairness and B2B customer loyalty than the two longest-duration groups. Procedural fairness differed only between the 1 year – 3 years and 5 years – 10 years groups. No adjusted informational fairness contrast was significant despite the significant omnibus test. These exploratory differences indicate group variation, not change caused by relationship duration.

The refined measurement model showed acceptable fit: CMIN/DF = 1.616, GFI = 0.915, NFI = 0.940, CFI = 0.976, TLI = 0.970 and RMSEA = 0.055. Retained loadings shown in Table 4 ranged from 0.592 to 0.982. Cronbach's alpha ranged from 0.748 to 0.944, CR from 0.758 to 0.929 and AVE from 0.514 to 0.813, supporting internal consistency and convergent validity. The comparatively lower loadings for PROC4 (0.592) and INTER1 (0.606) were retained because they remained statistically meaningful, the corresponding constructs met the CR and AVE criteria, and the items represented relevant facets of the construct domains (see Table 4).

The Fornell-Larcker criterion was met for most pairs (see Table 5). The distributive-procedural correlation (r = 0.902) equalled the square root of distributive fairness AVE, indicating substantial empirical proximity and prompting the additional HTMT assessment requested by the reviewer. Table 6 reports the HTMT values.

All HTMT values were below 0.90. The highest value was 0.887 between distributive and procedural fairness. Discriminant validity was therefore supported under the 0.90

TABLE 2: Supplementary one-way analysis of variance results by preferred cement brand and duration of support.

Grouping variable	Construct	*df*	*F*	*p*-value	η^2
Preferred cement brand	Distributive fairness	4, 201	1.170	0.325	0.023
	Procedural fairness	4, 201	0.926	0.450	0.018
	Interpersonal fairness	4, 201	0.515	0.725	0.010
	Informational fairness	4, 201	1.637	0.166	0.032
	B2B customer loyalty	4, 201	1.023	0.396	0.020
Duration of support	Distributive fairness	3, 202	5.565	0.001	0.076
	Procedural fairness	3, 202	4.046	0.008	0.057
	Interpersonal fairness	3, 202	1.108	0.347	0.016
	Informational fairness	3, 202	2.925	0.035	0.042
	B2B customer loyalty	3, 202	6.015	< 0.001	0.082

Note: Scores were computed from indicators retained in the final CFA. Missing and/or not disclosed grouping responses were excluded. η^2 = eta squared. Preferred brand comparisons should be interpreted cautiously because the Mamba group contained six respondents.

df, degrees of freedom; B2B, business-to-business.

TABLE 3: Adjusted post-hoc comparisons for significant duration of support analysis of variance results.

Construct	Post-hoc test	Group 1 (M)	Group 2 (M)	Mean difference	95% CI	Adjusted *p*-value
Distributive fairness	Games–Howell	1–3 years (4.00)	5–10 years (3.06)	0.937	0.132, 1.742	0.019
	Games–Howell	1–3 years (4.00)	10 years or more (2.95)	1.048	0.207, 1.889	0.011
	Games–Howell	3–5 years (3.73)	5–10 years (3.06)	0.669	0.128, 1.210	0.009
	Games–Howell	3–5 years (3.73)	10 years or more (2.95)	0.780	0.174, 1.385	0.006
Procedural fairness	Tukey HSD	1–3 years (3.98)	5–10 years (3.22)	0.759	0.004, 1.513	0.048
B2B customer loyalty	Tukey HSD	1–3 years (4.03)	5–10 years (3.04)	0.993	0.092, 1.893	0.024
	Tukey HSD	1–3 years (4.03)	10 years or more (2.93)	1.102	0.182, 2.021	0.012
	Tukey HSD	3–5 years (3.61)	5–10 years (3.04)	0.573	0.039, 1.108	0.030
	Tukey HSD	3–5 years (3.61)	10 years or more (2.93)	0.683	0.117, 1.249	0.011

Note: Mean difference = Group 1 minus Group 2. Games–Howell was used for distributive fairness because Levene's test indicated unequal variances ($p < 0.001$); Tukey HSD was used for procedural fairness, informational fairness and B2B customer loyalty. Only statistically significant adjusted pairwise contrasts are shown. No informational fairness contrast was significant after Tukey adjustment.

CI, confidence interval; B2B, business-to-business; HSD, Honestly Significant Difference (most commonly referring to Tukey's HSD post-hoc test).

TABLE 4: Standardised factor loadings, reliability and convergent validity.

Construct	Item	Standardised loading	Cronbach alpha	CR	AVE
Distributive fairness	DIST1	0.840	0.944	0.929	0.813
	DIST2	0.877	-	-	-
	DIST3	0.982	-	-	-
Procedural fairness	PROC1	0.905	0.890	0.900	0.698
	PROC2	0.879	-	-	-
	PROC3	0.921	-	-	-
	PROC4	0.592	-	-	-
Interpersonal fairness	INTER1	0.606	0.748	0.758	0.514
	INTER3	0.811	-	-	-
	INTER4	0.720	-	-	-
Informational fairness	INFO1	0.692	0.840	0.844	0.577
	INFO2	0.833	-	-	-
	INFO3	0.767	-	-	-
	INFO4	0.739	-	-	-
B2B customer loyalty	LOY3	0.953	0.890	0.921	0.799
	LOY4	0.727	-	-	-
	LOY5	0.980	-	-	-

Note: CR and AVE were calculated from the standardised CFA loadings.

CR, composite reliability; AVE, average variance extracted; B2B, business-to-business.

criterion, although the value confirms that buyers' outcome and process judgements were closely related. The two constructs were retained because FAIRSERV defines them as theoretically distinct and because the structural coefficients should be interpreted as unique associations after controlling for their shared variance.

The model explained 56.5% of the variance in B2B customer loyalty. Procedural fairness ($\beta = 0.438$, $p = 0.003$) and informational fairness ($\beta = 0.186$, $p = 0.006$) had significant positive associations with loyalty, supporting H2 and H4. Distributive fairness ($\beta = 0.252$, $p = 0.070$) and interpersonal fairness ($\beta = -0.088$, $p = 0.172$) were not significant; therefore, H1 and H3 were not supported (see Table 7). Figure 2 presents the standardised paths and R^2.

Disussion

The results show that the four fairness dimensions did not have equivalent unique associations with B2B customer loyalty. Procedural and informational fairness were significant, whereas distributive and interpersonal fairness were not significant after the shared variance among all four dimensions was controlled. This pattern supports a differentiated rather than unitary interpretation of service fairness in industrial procurement.

Procedural fairness was the strongest predictor. Buyers, therefore, appeared to place particular weight on whether supplier processes were consistent, unbiased, responsive and predictable. This result is compatible with Cassia et al. (2021), who found that procedural fairness contributed to social outcomes in discrete B2B transactions, and with Huo et al. (2023), who linked procedural justice to interfirm information sharing. In cement supply, procedural reliability is directly relevant to ordering, delivery scheduling, allocation and complaint handling. The finding extends existing evidence by showing that procedural fairness retained the strongest unique association with loyalty in a repeated industrial procurement context.

TABLE 5: Fornell-Larcker discriminant validity matrix.

Construct	Distributive	Procedural	Interpersonal	Informational	Loyalty
Distributive fairness	0.902	-	-	-	-
Procedural fairness	0.902	0.835	-	-	-
Interpersonal fairness	0.340	0.351	0.717	-	-
Informational fairness	0.454	0.499	0.409	0.759	-
B2B customer loyalty	0.702	0.728	0.228	**0.483**	0.894

Note: Diagonal values are the square roots of AVE; off-diagonal values are latent construct correlations.
AVE, average variance extracted.

TABLE 6: Heterotrait-monotrait ratio of correlations.

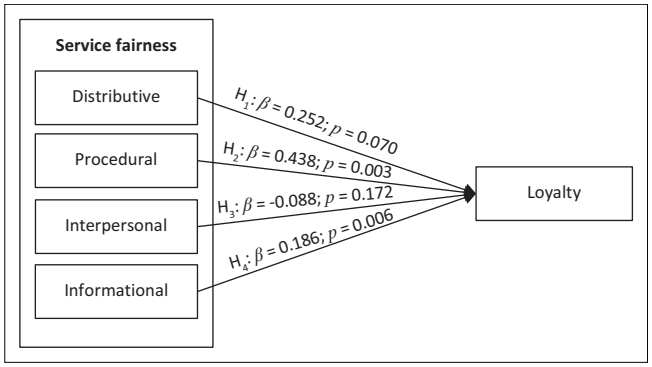
Construct	Distributive	Procedural	Interpersonal	Informational	Loyalty
Distributive fairness	-	-	-	-	-
Procedural fairness	0.887	-	-	-	-
Interpersonal fairness	0.326	0.435	-	-	-
Informational fairness	0.458	0.546	0.415	-	-
B2B customer loyalty	0.719	0.756	0.254	0.532	-

Henseler, J., Ringle, C.M. & Sarstedt, M., 2015, 'A new criterion for assessing discriminant validity in variance-based structural equation modeling', *Journal of the Academy of Marketing Science* 43(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8
Note: HTMT values below 0.90 support discriminant validity for conceptually related constructs (Henseler et al. 2015).
HTMT, heterotrait-monotrait ratio.

TABLE 7: Structural model results.

Hypothesis	Structural path	SE	CR	*p*-value	β	Decision
H1	Distributive fairness → B2B customer loyalty	0.201	1.809	0.070	0.252	Not supported
H2	Procedural fairness → B2B customer loyalty	0.190	2.990	0.003	0.438	Supported
H3	Interpersonal fairness → B2B customer loyalty	0.290	-1.366	0.172	-0.088	Not supported
H4	Informational fairness → B2B customer loyalty	0.234	2.739	0.006	0.186	Supported

Note: Hypotheses were assessed at $p < 0.05$.
SE, standard error; CR, critical ratio; β, standardised estimate; B2B, business-to-business.



H, hypothesis.

FIGURE 2: Structural model results for service fairness and business-to-business customer loyalty.

Informational fairness also had a significant positive association with loyalty. Timely, specific and reasonable explanations help buyers interpret delays, shortages, price adjustments and changes to delivery arrangements. This finding accords with FAIRSERV's treatment of informational fairness as distinct from interpersonal courtesy (Carr 2007) and with evidence that fair interfirm processes support information exchange (Huo et al. 2023). For organisational buyers, explanations are not merely courteous communication; they provide operational information needed to plan projects and assess supplier reliability.

Distributive fairness was positive but not statistically significant at the 5% level. This result should not be interpreted as evidence that outcome fairness is unimportant. The Fornell-Larcker and HTMT (see Table 5 and Table 6) results showed that distributive and procedural fairness were closely related ($r = 0.902$; HTMT = 0.887). Consequently, the distributive coefficient reflects its unique association after a substantial portion of shared fairness variance is controlled. The result differs from that of Cassia et al. (2021), who found a direct association between distributive fairness and contract renewal in discrete transactions, but it is consistent with the possibility that outcome and process evaluations are more tightly coupled in repeated cement procurement. This explanation remains an interpretation of the observed covariance pattern rather than a causal conclusion.

Interpersonal fairness did not have a significant unique association with loyalty. Respectful treatment may remain a baseline expectation even when it does not explain additional variance beyond procedures and explanations. The finding is consistent with Farooq and Moon (2020), who reported that not every fairness dimension contributed equally in their service fairness model. However, it differs from research in consumer service contexts where interactional treatment can be prominent (Giovanis, Athanasopoulou & Tsoukatos 2015). The difference may reflect the operational character of cement procurement, although this contextual explanation requires direct testing.

The non-significant interpersonal result should also be distinguished from service recovery evidence. Oflaç et al. (2021) showed that interactional treatment can matter during B2B service recovery after a failure. The present study concerned routine supplier relationships rather than a

specific recovery episode. Fair treatment may therefore become more salient under acute failure conditions than in buyers' overall loyalty evaluations.

The supplementary ANOVA showed no significant differences in preferred brand, whereas the duration groups differed in distributive fairness, procedural fairness, informational fairness and loyalty. The direction of the means indicated lower scores among the longer-duration groups for several constructs. These cross-sectional differences cannot establish that relationship duration reduced fairness or loyalty. They may reflect accumulated experiences, cohort composition or unmeasured differences among buyers. Longitudinal data would be required to distinguish these explanations.

The group comparisons also qualify the practical interpretation of relationship tenure. Managers should not assume that established customers automatically hold stronger fairness perceptions. Instead, suppliers may periodically review whether long-standing buyers experience procedures and explanations as consistently fair. The absence of significant adjusted pairwise differences for informational fairness, despite a significant omnibus test, further indicates that the duration results should be interpreted as exploratory rather than as a simple ordered trend.

Taken together, the findings support the view that fairness operates as a relational governance mechanism rather than as a single, undifferentiated construct. Process consistency and explanatory adequacy showed the clearest unique associations with loyalty. Outcome fairness remained closely connected to procedural fairness, and interpersonal conduct did not add significant explanatory power once the other dimensions were included.

Theoretical contributions

The study makes three theoretical contributions. Firstly, it extends FAIRSERV from predominantly consumer service settings to an industrial B2B cement supply context. Secondly, it demonstrates dimensional equivalence within FAIRSERV: Procedural and informational fairness were significant, unique predictors, whereas distributive and interpersonal fairness were not. Thirdly, it integrates RMT and SET by identifying consistent procedures and credible explanations as concrete exchange signals through which buyers may judge supplier reliability and relational goodwill. The high distributive-procedural association additionally shows that theoretical distinctiveness does not necessarily imply strong empirical separation in every procurement context.

Managerial implications

Cement suppliers should audit whether ordering, allocation, delivery scheduling and complaint-resolution procedures are applied consistently across organisational customers. Exceptions should be governed by explicit criteria and recorded so that buyers can understand how decisions were reached. Supplier representatives should also provide timely, specific and truthful explanations for shortages, delivery changes, price adjustments and service failures. Interpersonal courtesy remains an appropriate baseline standard, but the results indicate that courteous treatment cannot substitute for reliable procedures or adequate explanations. Because longer-duration groups reported lower scores on several outcomes, periodic relationship reviews may be useful, particularly for established accounts.

Limitations and future research

The cross-sectional design precludes temporal or causal inference. The sampling frame was restricted to formal CIDB-registered organisations in Gauteng, and voluntary participation may have introduced non-response or self-selection bias; the results should therefore not be generalised to informal buyers, other provinces or the entire South African cement market without replication. The small Mamba subgroup limited the precision of preferred brand comparisons. The high distributive-procedural association indicates partial construct proximity despite an HTMT value below 0.90, and the removal of INTER2, LOY1 and LOY2 may have narrowed the content represented by those scales. The ANOVA was supplementary and involved multiple exploratory comparisons. Future studies should use longitudinal or multi-source designs, test the measurement structure in an independent sample and examine whether dependence, contract type or service-failure conditions change the relative salience of the fairness dimensions.

Conclusion

This study examined the associations between four service fairness dimensions and B2B customer loyalty in South African cement supply relationships. Procedural and informational fairness were significant positive predictors, while distributive fairness was positive but not significant and interpersonal fairness was not significant. The model explained 56.5% of loyalty variance. These findings indicate that consistent supplier processes and credible explanations are the clearest fairness-related correlates of loyalty in the sampled relationships. The conclusions remain bounded by the cross-sectional design and the Gauteng CIDB-registered sample.

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Competing interests

The authors, Lehlohonolo A. Masitenyane and Mayemba K. Nzita, declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

CRediT authorship contribution

Lehlohonolo A. Masitenyane: Conceptualisation, Investigation, Methodology, Writing – original draft. Mayemba K. Nzita:

Data curation, Formal analysis, Investigation, Software, Validation, Writing-original draft, Writing – review & editing. All authors reviewed the article, contributed to the discussion of results, approved the final version for submission and publication, and take responsibility for the integrity of its findings.

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Data availability

The data that support the findings of this study are not openly available because of ethical and confidentiality requirements and are available from the corresponding author, Mayemba K. Nzita, upon reasonable request.

Disclaimer

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