ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

Operational and Relational Dimensions of Supplier Readiness in Industrial Spare Parts Procurement

Guruprasad S.[1]* A. Selvarasu[2]

[1] Doctoral Scholar, Department of Business Administration, Annamalai University, Annamalai Nagar, Tamil Nadu, India

[2] Professor, Department of Business Administration, Annamalai University, Annamalai Nagar, Tamil Nadu, India

*** Corresponding Author**

DOI: https://doi.org/10.51583/IJLTEMAS.2026.151000034

Received: 17 October 2026; Accepted: 22 October 2026; Published: 01 November 2026

ABSTRACT

This study examines the associations of inventory readiness, delivery reliability, technical service support, and trust and reputation with industrial buyers' machinery spare-parts purchase intention. A cross-sectional survey yielded 144 respondents across six industry categories. The achieved sample is treated as nonprobability because probability selection and state allocation cannot be established. A five-construct covariance-based model with 22 previously retained indicators was re-estimated by maximum likelihood. Fit was acceptable rather than uniformly excellent: $\chi^2(199) = 277.401$, CFI = .950, TLI = .942, RMSEA = .052 (90% CI .037–.067), and off-diagonal SRMR = .054. Trust and reputation had the largest standardized association with purchase intention ($\beta = .560$, $p < .001$); inventory, delivery and technical support were not significant at .05 in the reduced SEM. Reliability and convergent validity were satisfactory for four constructs, whereas technical support remained weak. HTMT ranged from .320 to .809; the stricter Fornell–Larcker criterion failed for trust versus purchase intention. Full seven-item composite regressions with HC3 errors and bootstrap intervals retained trust's prominence but supported inventory and technical support, revealing specification-sensitive conclusions. Exploratory industry comparisons showed no significant mean differences. Practical recommendations combine transparent supplier conduct with verified inventory, logistics and service performance. Cross-sectional self-reporting, limited geographical information and measurement weaknesses constrain causal and population-level inference.

Keywords: Supplier readiness; industrial procurement; purchase intention; machinery spare parts; structural equation modelling

INTRODUCTION

Industrial equipment reliability depends not only on machine design and maintenance practices but also on access to replacement parts, predictable logistics and expert supplier assistance. Spare-part purchasing is distinctive because a comparatively inexpensive component can protect a costly production system from downtime. Supply interruptions may therefore influence industrial purchasing priorities beyond price alone. For suppliers, readiness is a bundle of capabilities: holding or sourcing relevant inventory, fulfilling promised delivery schedules, providing technical advice, and establishing trustworthy commercial relationships.

The study examines inventory readiness (IR), delivery reliability (DR), technical service support (TS), and trust and reputation (TR) as antecedents of purchase intention (PI). It asks whether each dimension contributes independently when the four dimensions are modelled jointly. The achieved sample comprises 144 respondents.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

THEORETICAL BACKGROUND

Supplier readiness is conceptualized as the availability and dependability of operational and relational resources that enable an industrial buyer to acquire critical machinery spares when needed. The four dimensions in this study—inventory readiness, delivery reliability, technical service support, and trust and reputation—are complementary rather than mutually exclusive. Since a low-cost spare part can avert high-cost equipment downtime, buyers may consider both tangible fulfilment capabilities and confidence that a supplier will honour commitments under uncertain conditions (Kraljic, 1983; Christopher, 2016; Wagner & Bode, 2008).

The resource-based view (RBV) explains why distinctive supplier stocks, logistics coordination, diagnostic know-how and service routines may yield competitive advantage (Barney, 1991). The relational view extends this explanation by suggesting that interfirm collaboration and relationship-specific knowledge create joint value difficult to replicate (Dyer & Singh, 1998). Transaction-cost economics adds that asset specificity and uncertainty influence contractual safeguards and supplier choice (Williamson, 1985). These perspectives support testing the incremental association of each readiness dimension with purchasing intention.

Commitment–trust theory identifies trust as a central mechanism sustaining successful relational exchanges (Morgan & Hunt, 1994). Buyer–seller trust is relevant when delivery assurances, part authenticity or emergency assistance cannot be verified immediately (Doney & Cannon, 1997). Social exchange and long-term orientation perspectives also imply that dependable behaviour across transactions may shape preference and relationship continuity (Anderson & Narus, 1990; Ganesan, 1994). Thus, reputation is treated not as a substitute for logistics performance but as an evaluation of supplier conduct under risk.

Logistics service quality scholarship distinguishes timeliness, information quality, order fulfilment and handling of discrepancies (Mentzer et al., 1999). SERVQUAL identifies reliability and responsiveness as key service judgments (Parasuraman et al., 1988), while business-market value research documents how supplier offerings can be evaluated across product, service and relationship benefits (Ulaga & Eggert, 2006). The theory of planned behavior frames intention as a proximal, but imperfect, precursor to actual behaviour (Ajzen, 1991). Accordingly, the present cross-sectional SEM explains reported purchase intention, not objectively verified orders or causal effects.

Problem Statement

Industrial machinery-spare procurement is exposed to stock-outs, unpredictable lead times, incomplete technical specifications and supplier performance uncertainty. Although these risks may affect equipment uptime, purchasing departments cannot always observe supplier capabilities directly before placing or renewing an order. Evidence from general supply-chain and buyer–supplier research establishes the importance of logistics, relationship trust and supply uncertainty; however, the relative contributions of these dimensions when evaluated jointly in machinery-spare purchasing remain an empirical question.

The specific problem addressed is whether inventory readiness, delivery reliability, technical service support and trust/reputation retain independent associations with the intention to procure machinery spares from an industrial supplier. The original synopsis proposed broader South Indian coverage and a sample of 300; the available dataset comprises 144 respondents without state identifiers. This distinction limits territorial generalization and is reflected in interpretation of the results.

Need and Significance of the Study

First, the study combines operational indicators and relational assurance in a single B2B purchasing framework rather than examining stock availability or trust in isolation. Second, it applies a common measurement instrument to several manufacturing-related buyer categories, providing preliminary evidence that suppliers can use to align inventory, logistics and service commitments with buyer expectations.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

Third, the study compares the conditional strengths of these readiness dimensions using structural equation modelling, while explicitly reporting measurement-quality and model-fit limitations. Finally, its findings can motivate practical supplier scorecards that distinguish promised capability, experienced performance, and verified purchase outcomes. These are context-bound implications for the observed respondents, not claims of representativeness for all South Indian industrial buyers.

Research Questions

RQ1. How do surveyed industrial buyers perceive inventory readiness, delivery reliability, technical service support and trust/reputation?

RQ2. To what extent do the four supplier-readiness dimensions show independent associations with machinery spare-parts purchase intention?

RQ3. Which readiness dimension has the largest standardized association with purchase intention in the reported structural model?

RQ4. Do the available measurement diagnostics offer sufficient support for interpreting the latent constructs and their relationships?

RQ5. What supplier-development and purchasing implications can reasonably be drawn from the observed associations?

Objectives of the Study

1. To describe industrial buyers' perceptions of four supplier-readiness dimensions and purchase intention.

2. To examine the measurement properties of the inventory, delivery, technical support, trust/reputation and purchase-intention constructs.

3. To estimate the conditional associations of the four supplier-readiness dimensions with purchase intention.

4. To assess robustness using full-scale composite regressions, covariate adjustment, bootstrap confidence intervals and influence sensitivity.

5. To formulate evidence-proportionate managerial implications and identify requirements for stronger future validation.

REVIEW OF LITERATURE

Supplier Readiness as a Multidimensional B2B Capability

Supplier readiness in machinery spare-parts markets can be understood as a combination of operational capability and relational assurance rather than the simple possession of stock. The resource-based view holds that valuable organizational resources and capabilities can underpin competitive advantage (Barney, 1991), while the relational view extends the explanation to resources developed across buyer–supplier boundaries (Dyer & Singh, 1998). In industrial purchasing, supply importance and exposure to disruption influence how sourcing relationships should be governed (Kraljic, 1983). Transaction-cost reasoning similarly suggests that uncertainty and asset specificity make reliable exchange arrangements especially consequential (Williamson, 1985). Together, these perspectives justify examining inventory readiness, delivery reliability, technical service support, and trust and reputation as distinct, related antecedents of purchase intention.

Industrial purchasing decisions often involve more than an individual buyer or a single product attribute. Sheth (1973) presented industrial buying as a process influenced by organizational and individual conditions, while Anderson and Narus (1990) emphasized cooperation and relationship outcomes in

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

manufacturer–distributor partnerships. Anderson et al. (1994) placed dyadic exchanges within broader business networks. These insights are relevant to spare parts because buyers depend on supplier responses across recurrent operational emergencies, technical uncertainties, and organizational approval processes. The current study treats the four readiness dimensions as correlated explanatory factors and tests their independent associations with the stated intention to purchase.

Inventory Readiness (IR)

Inventory readiness concerns the supplier's perceived capacity to maintain critical spares, anticipate replenishment needs, provide credible availability information, and respond to emergency demand. Cachon and Fisher (2000) demonstrated the managerial value of shared information for inventory decisions, providing a rationale for treating visibility and accuracy as part of readiness rather than merely physical stockholding. Chopra and Meindl (2016) explained the interaction of inventories, transport, responsiveness, and costs in supply-chain design. In spare-parts markets, the aftermarket perspective of Cohen et al. (2006) highlights the strategic importance of matching service availability with customer needs. These works suggest that improved stock planning and information quality may reduce uncertainty for buyers, although they do not directly establish an effect on purchase intention in the present sample.

The risk of unavailable components is amplified when production assets are highly specific or substitutes are limited. Kraljic (1983) argued for differentiated purchasing strategies according to supply risk, and Zsidisin (2003) conceptualized supply risk around potentially adverse supply-related outcomes. Jüttner et al. (2003) situated such exposures within supply-chain risk management. Applied to the present inventory-readiness dimension, these insights suggest that anticipation, emergency stock, and reliable inventory disclosures can become valued signals of supplier capability. Accordingly, a positive association between perceived inventory readiness and purchase intention is theoretically plausible (H1), while the empirical magnitude remains a question for analysis.

Delivery Reliability (DR)

Delivery reliability refers to adherence to promised schedules, dependable logistics, appropriate handling, and timely communication regarding shipment status. Mentzer et al. (1999) developed a logistics service-quality framework that recognizes timeliness and order-related performance as central aspects of customer evaluations. Parasuraman et al. (1988), though studying general service quality rather than industrial spares, identified reliability and responsiveness as recurring elements of perceived service performance. Lai et al. (2004) further addressed supply-chain performance in transport logistics. These studies support the distinct measurement of delivery reliability as experienced by business buyers, including whether spares reach a plant as promised and whether exceptions are communicated.

Delivery reliability also functions as a response to procurement and continuity risks. Christopher (2016) emphasizes responsiveness and coordination in supply networks, whereas Wagner and Bode (2008) empirically examine supply-chain performance in relation to several risk dimensions. Rajesh and Ravi (2015) show how resilience considerations may be incorporated into supplier selection. For a buyer of replacement machinery components, consistent dispatch and transparent logistics can reduce exposure to unplanned interruptions; however, delivery and inventory perceptions may overlap when several supplier attributes enter the same statistical model. The literature therefore supports the directional expectation that delivery reliability is positively related to purchase intention (H2), without predetermining whether it will have an independently significant coefficient.

Technical Service Support (TS)

Technical service support comprises advice about spare-part compatibility, installation assistance, troubleshooting, documentation, and after-sales assistance. Ulaga and Eggert (2006) examine value-based differentiation in business relationships and show why supplier value includes benefits beyond price and core product attributes. Anderson and Narus (1990) similarly highlight cooperative working arrangements in

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

industrial distribution. Cohen et al. (2006) frame aftermarket service as a strategic domain in which capabilities surrounding the installed product matter to customer experience. This body of literature suggests that technically capable suppliers may lower the practical uncertainty of ordering, installing, and operating machinery spares.

Technical support may additionally be enhanced by information systems and interorganizational coordination. Davis (1989) links perceived usefulness and ease of use to acceptance of information technology, and Rogers (2003) explains how innovations spread among potential adopters; neither directly tests industrial-spare supplier support, but both illuminate how digital manuals, diagnostics, and service platforms might gain buyer acceptance. Flynn et al. (2010) show that supply-chain integration is associated with performance under particular contextual conditions. These perspectives motivate considering technical support as a separate predictor of purchase intention (H3). Any interpretation must also account for the comparatively weak reliability reported for the reduced technical-support scale in this study.

Trust and Reputation (TR)

Trust and reputation capture beliefs that a supplier is honest, keeps commitments, behaves ethically, and remains dependable when disruption occurs. Morgan and Hunt (1994) position trust and commitment at the center of successful relationship marketing, and Doney and Cannon (1997) specifically investigate the nature and antecedents of trust in buyer–seller relationships. Ganesan (1994) examines trust and dependence in explaining long-term orientation in marketing channels. For industrial spares, where the buyer may be unable to verify a supplier's promised performance in advance, these theories offer a strong basis for expecting relational confidence to shape intended supplier selection.

The broader trust literature explains why supplier credibility may retain value even after operational attributes are considered. Rousseau et al. (1998) synthesize trust across disciplinary approaches, while Sako (1992) analyzes the role of trust in interfirm exchange. Sirdeshmukh et al. (2002) link trust, perceived value, and loyalty in relational service settings; those findings do not automatically generalize to machinery spares, but they establish a plausible behavioral mechanism. Pavlou (2003) likewise incorporates trust and perceived risk into transaction intention in electronic commerce. Applied cautiously to business procurement, this evidence underpins the hypothesis that trust and reputation are positively associated with purchase intention (H4).

Industrial Buyers' Purchase Intention (PI)

Purchase intention is the buyer's reported willingness or plan to select, continue purchasing from, recommend, or develop a longer-term arrangement with a supplier. Ajzen (1991) distinguishes behavioral intention from actual behavior in the theory of planned behavior, an important conceptual boundary for cross-sectional questionnaire studies. Sheth (1973) demonstrates that industrial buying operates within a complex organizational setting, so stated preference may not translate directly into an approved purchasing decision. Dodds et al. (1991) establish the relevance of evaluative information to purchase judgments, while Zeithaml (1988) connects perceived quality and value to customer evaluations. These findings collectively support modeling intention as an outcome, not as an observed purchase or verified repeat order.

Buyer intentions can also evolve through supplier performance and post-purchase assessments. Oliver (1980) analyzes how expectation-related evaluations contribute to satisfaction decisions, offering a conceptual bridge from delivered service to future intentions. Ulaga and Eggert (2006) provide a business-relationship perspective on value-based supplier preference, while Ganesan (1994) emphasizes the long-term orientation of buyers and sellers. Thus, intended purchase from an industrial spare-parts supplier may reflect operational assurance and relational confidence simultaneously. The present measures address expressed purchasing intentions on a five-point response scale; actual expenditure, retention, downtime, and contract renewal were not measured.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

Measurement and Structural Equation Modelling (SEM)

Because the constructs are measured by multiple survey statements, measurement quality is central to drawing responsible conclusions. Cronbach (1951) developed coefficient alpha as an index of internal consistency, and Fornell and Larcker (1981) provided a framework for evaluating latent constructs and measurement error. Nunnally and Bernstein (1994) further discuss psychometric requirements for scale development. Discriminant validity should be distinguished from internal consistency: Henseler et al. (2015) introduced the heterotrait–monotrait ratio as an additional tool in variance-based SEM. These methodological sources justify reporting reliability, convergent validity, and discriminant validity separately, rather than assuming that positive path estimates validate the measures.

Model-fit indices must describe the same specification as the substantive pathways. Reliability, average variance extracted (AVE), HTMT and Fornell–Larcker comparisons are evaluated for all five constructs. A satisfactory global fit does not resolve weak factor measurement or common-method bias (Fornell & Larcker, 1981; Hu & Bentler, 1999; Henseler et al., 2015; Podsakoff et al., 2003).

Recent Evidence on Supplier Evaluation, Procurement Risk and Resilience

Onukwulu et al. (2025) synthesize supplier-evaluation approaches involving sustainability, risk assessment, technology and cross-functional collaboration. Their review supports evaluating readiness through several observable dimensions rather than a single supplier rating. As a secondary qualitative synthesis, it does not establish the causal magnitude of any readiness–intention relationship. For machinery spares, the relevant procurement risks include inaccurate stock information, interrupted supply, part incompatibility and delayed recovery. A supplier scorecard should connect each risk to a verifiable capability and a named response owner.

Becerra and Diaz (2025) formulate an optimization model integrating sustainability and resilience into mining-industry supplier selection. Their sector-specific approach supports contingency-based evaluation: critical equipment, recovery requirements and feasible substitutes should shape selection priorities. The present survey measures buyer perceptions and cannot infer which optimization weights or sourcing policies are optimal. These newer approaches extend the traditional cost, quality and delivery perspective toward continuity under disruption.

Barakat et al. (2024), using questionnaires from 468 Egyptian SMEs, report that resilience capabilities can mediate relationships between supply-chain integration and operational performance. This evidence makes an indirect operational pathway plausible, but it cannot verify mediation in the present dataset. Accordingly, inventory, delivery and technical service may protect continuity even when their direct adjusted paths to intention are uncertain. Operational performance and resilience are not measured as outcomes here; they motivate future tests using fulfilment, downtime and recovery records.

Ivanov et al. (2023) frame supply-chain viability around resilience, adaptability and sustainability. Their conceptual synthesis encourages attention to maintaining activity through prolonged disruptions. Applied here, trust may signal credible crisis response, while stock, delivery and technical competence provide the resources for that response. This interpretation is a theoretical explanation to be tested longitudinally, rather than a mechanism demonstrated by the current cross-sectional model.

Literature Synthesis and Research Gap

Collectively, the reviewed literature supports four explanatory pathways: operational stock competence, delivery dependability, specialized service capability, and relational trust. Research on logistics and inventory supplies mechanisms for operational readiness; relationship marketing and transaction-cost perspectives explain the role of credibility. Yet the empirical literature reviewed here does not resolve which component dominates once all four are entered simultaneously for machinery-spare purchasing. This motivates H1–H4 in the existing conceptual framework. The contribution is a comparative analysis of

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

conditional readiness–intention associations in 144 respondents, complemented by five-factor measurement assessment and full-scale sensitivity analyses. It does not establish a general South Indian causal model.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

The resource-based view suggests that well-developed inventory, logistics and technical-support capabilities can provide distinct value to industrial customers (Barney, 1991). Relationship marketing emphasizes trust in creating and sustaining buyer–supplier commitment (Morgan & Hunt, 1994), while Doney and Cannon (1997) explain the role of trust in industrial buyer–seller relationships. Logistics service quality research connects reliable fulfilment with supplier evaluation (Mentzer et al., 1999). The integrated framework predicts purchase intention from four correlated supplier-readiness dimensions. The predictions are associational because the research design is cross-sectional.

H1: Inventory readiness is positively associated with industrial buyers' purchase intention.

H2: Delivery reliability is positively associated with industrial buyers' purchase intention.

H3: Technical service support is positively associated with industrial buyers' purchase intention.

H4: Trust and reputation are positively associated with industrial buyers' purchase intention.

RESEARCH METHODOLOGY

Design, Sampling and Geographical Coverage

The design is cross-sectional, quantitative and observational. The unit of analysis is an individual purchasing or related professional's supplier evaluation; respondents are not necessarily distinct firms or suppliers. The study was framed around industrial buyers in South India. The research plan named Tamil Nadu, Karnataka, Kerala and Andhra Pradesh, proposed industry-stratified sampling and targeted 300 responses. The achieved dataset contains 144 unique respondent IDs. Recruitment through email and professional contacts is described in the study documentation; selection probabilities, invitation counts and completed recruitment logs are unavailable. We therefore treat the achieved sample as nonprobability, with purposive targeting of relevant professional roles, rather than claiming an executed stratified random sample.

No state or district identifiers occur in the respondent records. Multi-state participation, state proportions and geographical representativeness cannot be verified, and no state-weighted inference is made. South India denotes the intended study setting. Automotive and Tyre respondents together account for 48.6% of the sample; Leather has only five cases. Sector coverage does not establish proportional industry representation. The ratio 144/300 = 48.0% describes achievement against the planned target and is not a response rate, since 300 is not a documented invitation denominator.

Sample size and analytical sensitivity

The sample size was determined by the 144 available completed responses, not a documented a priori SEM power calculation. The 22-indicator covariance model estimates 54 free parameters and has 199 degrees of freedom; the case-to-parameter ratio is 2.67, which is descriptive and not evidence of adequacy. A sensitivity calculation for a four-predictor fixed-design regression, testing one incremental association at $\alpha = .05$ with 80% power, gives detectable Cohen f^2 of approximately .055 (noncentral F; numerator df = 1, denominator df = 139, noncentrality = Nf^2). This is a regression benchmark and does not establish power for latent-variable paths. Small associations, weak indicators and subgroup differences may remain undetected. No post hoc observed-power claim is made.

Measures, Data Checks and Model Specification

Each of IR, DR, TS, TR and PI was initially measured using seven five-point agreement items. Seven-item

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

arithmetic means are used for descriptive statistics, sector comparisons and composite sensitivity analyses. All 35 item responses are complete and fall within 1–5; respondent IDs are unique. JASP category codes were decoded using their stored original-value labels before analysis. Neither missing-data imputation nor deletion of incomplete cases was needed. The absence of firm and supplier identifiers prevents assessment of within-firm or within-supplier dependence.

The principal measurement specification retains IR2–IR7, DR3/DR5/DR6/DR7, TS1/TS2/TS6, TR1/TR3/TR6 and PI1–PI6, matching the previously selected SEM. No further fit-driven item deletion or residual covariance was added in this revision. Retained content covers stock access and information, logistics and communication, advice/installation/documentation, honesty/reputation/crisis dependability, and purchase/relationship intentions. Removing items narrows content coverage, especially for TS and TR; because selection and evaluation use the same sample, this is a provisional measurement model requiring independent replication.

The five latent constructs were fitted simultaneously by normal-theory maximum likelihood to the covariance structure, with uncorrelated indicator residuals and correlated supplier-readiness factors. A standardized latent correlation parameterization is equivalent to the structural model PI regressed on all four correlated antecedents: its four regression paths and residual variance exactly reparameterize PI's covariances and variance. Consequently, the five-factor CFA and this structural model share global fit; this equivalence would not hold for a more constrained structural model. Numerical optimization converged, factor correlations were positive definite, and all fitted indicator residual variances were positive. The reproduced model χ^2 and standardized paths agree with the earlier JASP estimates. Earlier four-factor fit indices are not used.

We report χ^2, df, p, χ^2/df, CFI, TLI, RMSEA with a noncentral-χ^2 90% confidence interval, and SRMR defined over standardized off-diagonal residuals. Cronbach alpha, standardized composite reliability (CR), AVE, all ten HTMT ratios and latent correlation comparisons assess measurement properties. CR uses squared summed standardized loadings divided by that quantity plus summed standardized residual variances. Cutoffs are screening references rather than proof of validity. Normal-theory path p values and 95% intervals are retained from the matched JASP structural output; bootstrap intervals described below refer to composite regressions, not the SEM.

Robustness and Exploratory Comparisons

Full seven-item scores were standardized and regressed on the four standardized antecedents using ordinary least squares with HC3 heteroskedasticity-consistent standard errors. We also fitted a model with dummy-coded sector, designation, experience and procurement-value controls; estimated 2,000 case-bootstrap percentile intervals using a fixed random seed; checked variance inflation factors (VIF); and refitted after excluding cases with Cook's distance above 4/N. Exclusion is sensitivity analysis rather than a data-cleaning rule. One-way sector ANOVAs use full-scale scores and report η^2; these exploratory mean comparisons do not test equality of SEM paths. The small and unbalanced sectors do not support reliable multi-group SEM or measurement-invariance assessment.

Five-category items need not meet multivariate normality. HC3 and case-bootstrap checks address composite-model uncertainty, but they do not provide ordinal or robust SEM inference. Common-method sensitivity includes first-component variance in the full 35-item correlation matrix and a one-factor CFA on the same 22 indicators. These diagnostics cannot establish absence of common-method bias; no marker variable, temporal separation or multi-source outcome is available.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

RESULTS

Respondent Profile and Descriptive Statistics

Table 1 Respondent sector distribution

Sector	n	%
Automotive	35	24.3
FMCG	23	16
Food	21	14.6
Leather	5	3.5
Others	25	17.4
Tyre	35	24.3

Respondents include 52 supply-chain executives (36.1%), 41 purchase officers (28.5%), 35 maintenance professionals (24.3%) and 16 others (11.1%). Experience is below five years for 16 respondents, 5–10 years for 62, 11–15 years for 31 and above 15 years for 35. Annual procurement value is below ₹10 lakh for five respondents, ₹10–50 lakh for 47, ₹51 lakh–₹1 crore for 54 and above ₹1 crore for 38. These are respondent characteristics, not population distributions.

Table 2. Full-scale construct descriptives (N = 144)

Construct	Mean (1–5)	SD of respondent means	Items
Inventory readiness	3.559	0.667	7
Delivery reliability	3.6	0.593	7
Technical service support	3.568	0.507	7
Trust and reputation	3.55	0.564	7
Purchase intention	3.632	0.642	7

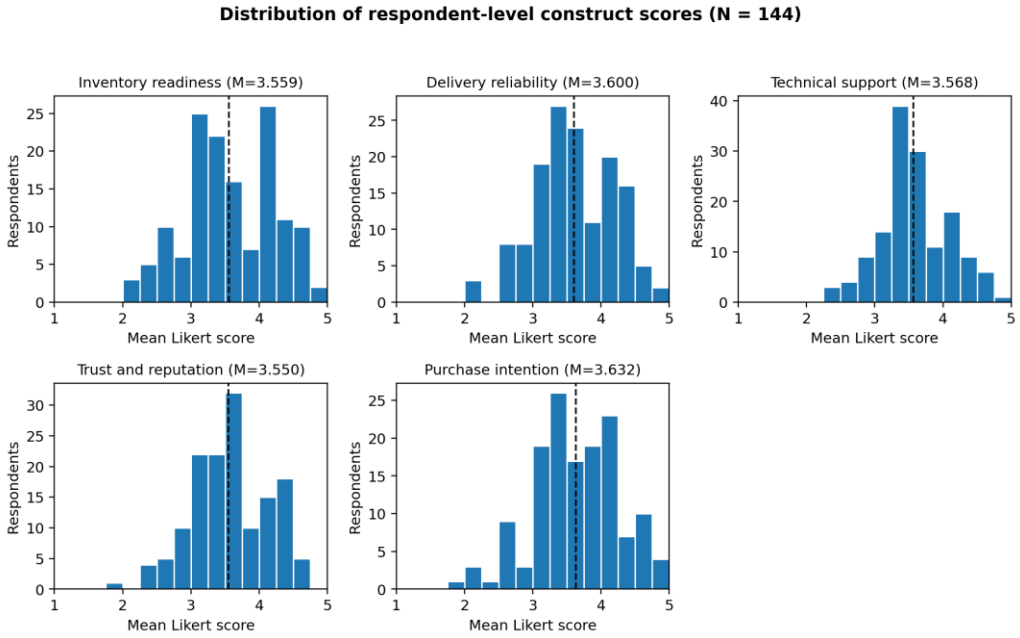


Figure 1. Histograms of respondent-wise seven-item mean scores. Dashed lines show construct means. Source: primary survey (N = 144).

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

Five-Construct Model Fit and Measurement Quality

Table 3 Five construct model fit

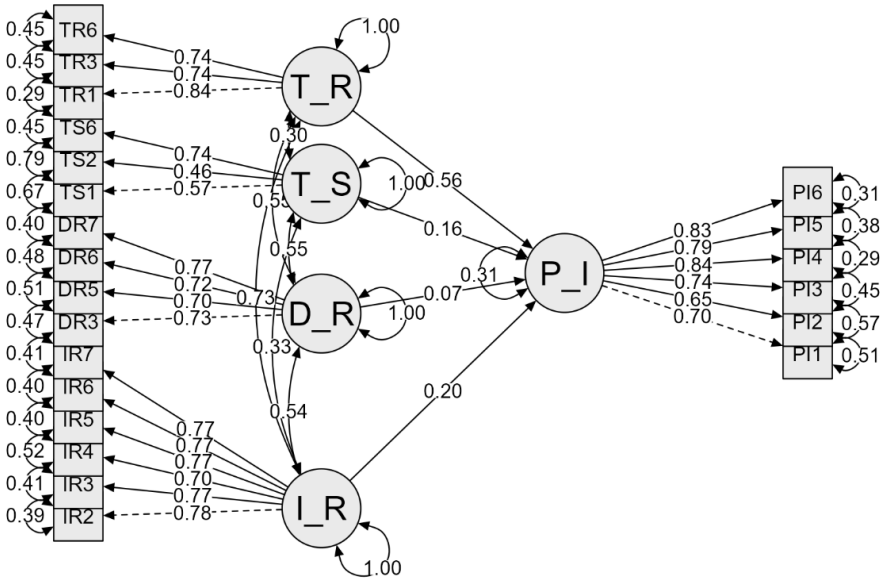
Fit statistic	Estimate
Model χ^2 df p	277.401; 199; .00020
χ^2 divided by df	1.394
CFI and TLI	.950 and .942
RMSEA and 90% CI	.052; .037–.067
Off diagonal SRMR	0.054
N and free parameters	144 and 54

The indices support acceptable approximate fit, with TLI below the more demanding .95 reference.Significant χ^2 rejects exact covariance fit. Global fit does not establish substantive validity or compensate for weak technical-support measurement. The reproduced $\chi^2(199) = 277.401$ is the fitted five-factor model test, correcting the earlier ambiguous "baseline test" description; the independently fitted covariance model establishes its scope.

Table 4 Construct reliability and convergent validity

Construct	Items	Alpha	CR	AVE	Loading range
IR	6	0.890	0.891	0.577	0.696–0.783
DR	4	0.821	0.822	0.535	0.703–0.774
TS	3	0.620	0.622	0.363	0.460–0.743
TR	3	0.817	0.820	0.604	0.742–0.843
PI	6	0.891	0.892	0.580	0.654–0.840

IR, DR, TR and PI meet the .70 CR and .50 AVE reference values. TS does not (CR = .622, AVE = .363); its lowest loading is .460. TS is retained to preserve the theoretically specified dimension, with its structural results interpreted cautiously. Reliability and AVE are reported for the actual 22-indicator five-factor specification and should not be combined with reliability values from the earlier four-factor CFA.



ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

Table 5 Standardized indicator loadings

Indicator	Standardized loading
IR2	0.783
IR3	0.765
IR4	0.696
IR5	0.773
IR6	0.773
IR7	0.765
DR3	0.726
DR5	0.703
DR6	0.723
DR7	0.774
TS1	0.57
TS2	0.46
TS6	0.743
TR1	0.843
TR3	0.742
TR6	0.743
PI1	0.698
PI2	0.654
PI3	0.744
PI4	0.84
PI5	0.788
PI6	0.828

Table 6 HTMT discriminant validity ratios

Construct pair	HTMT
IR DR	0.529
IR TS	0.349
DR TS	0.529
IR TR	0.73
DR TR	0.559
TS TR	0.32
IR PI	0.69
DR PI	0.574
TS PI	0.434
TR PI	0.809

All point-estimate HTMT ratios are below .85, including TR–PI = .809. This is partial support for discriminant validity, without bootstrap HTMT inference. The Fornell–Larcker test gives a more cautious conclusion: √AVE is .760 (IR), .732 (DR), .602 (TS), .777 (TR) and .762 (PI), whereas the TR–PI latent correlation is .793. That pair fails the criterion for both constructs. The other pairs satisfy it. Trust and purchase intention are therefore related but not unambiguously distinct on every criterion; overlapping favorable supplier evaluations may contribute to their association.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

Structural Associations

Table 7 Structural path estimates

Hypothesis	Standardized β	95% CI	p	At .05
H1 IR	.200	−.016 to .416	.069	Not supported
H2 DR	.067	−.139 to .272	.524	Not supported
H3 TS	.163	−.025 to .350	.089	Not supported
H4 TR	.560	.343 to .778	<.001	Supported

Purchase-intention latent R^2 is .694, computed as the predictor–outcome correlation vector multiplied by the standardized regression coefficients. This is in-sample explained variance, not predictive accuracy. Trust has the largest path point estimate; no formal test of pairwise path differences is claimed. The other SEM intervals span zero and do not establish independent positive associations at .05.

Robustness, Influence and Common-Method Sensitivity

Table 8 Full scale regression sensitivity

Predictor	Full scale β	HC3 p	Bootstrap 95% CI	With controls β and p
IR	0.172	0.020	0.030 to 0.321	0.155; 0.056
DR	0.094	0.229	-0.064 to 0.228	0.095; 0.282
TS	0.131	0.010	0.034 to 0.235	0.148; 0.009
TR	0.519	<.001	0.346 to 0.693	0.530; <.001

The composite model explains 59.7% of PI score variance. Trust remains positive and prominent with HC3 inference, bootstrap intervals and controls. Unlike the reduced SEM, the uncontrolled full-scale composite analysis supports IR and TS; with controls, IR is borderline (p = .056) and TS remains positive (p = .009). These differences arise across measures and model assumptions and prevent treating operational dimensions as consistently insignificant. Composite regressions do not correct measurement error and are sensitivity checks rather than replacements for SEM.

Composite predictor VIF values range from 1.25 to 2.21, offering no evidence of severe multicollinearity. Nevertheless, the latent IR–TR correlation is .735 and DR–TR is .548, so shared substantive variance can still reduce unique path precision. Nine cases exceed Cook's 4/N screening value (.0278); maximum Cook's distance is .0513. Excluding these cases leaves 135 respondents and a positive trust coefficient of .506 (HC3 $p < .001$); IR and TS remain positive and significant, while DR remains uncertain. These observations are retained in the principal analysis.

The first principal component explains 37.5% of the 35-item correlation-matrix variance. A single-factor CFA on the same 22 indicators fits poorly, $\chi^2(209) = 614.064$, compared with 277.401 for five factors. The descriptive χ^2 reduction is 336.663 across ten degrees of freedom; a conventional nested χ^2 significance claim is avoided because a one-factor model corresponds to a boundary case of perfectly correlated factors. Neither the component percentage nor the one-factor comparison excludes method effects. The TR–PI validity concern and common-source design remain material limitations.

Exploratory Industry Comparisons

Table 9 Sector construct means

Sector	n	IR	DR	TS	TR	PI
Automotive	35	3.53	3.55	3.58	3.47	3.53

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

FMCG	23	3.52	3.67	3.52	3.61	3.62
Food	21	3.47	3.78	3.59	3.45	3.54
Leather	5	3.69	3.26	3.4	3.29	3.71
Others	25	3.62	3.51	3.45	3.57	3.71
Tyre	35	3.6	3.61	3.69	3.67	3.73

Table 10 Exploratory sector comparisons

Construct	F with df 5 and 138	p	η^2
IR	0.203	0.961	0.007
DR	0.936	0.460	0.033
TS	0.823	0.536	0.029
TR	0.857	0.512	0.030
PI	0.512	0.767	0.018

None of the five exploratory sector mean tests is significant at .05; η^2 ranges from .007 to .033. Unequal groups, including Leather n = 5, and limited precision prohibit concluding sector equivalence. These comparisons do not establish invariant measurement or equal readiness–intention effects across industries. No industry is ranked as intrinsically more trusting or procurement-ready on this evidence.

DISCUSSION

Trust and reputation provide the clearest association with intention across the reduced SEM and full-scale sensitivity models. For machinery spares, a buyer may be unable to verify availability, authenticity, compatibility or emergency response before committing. Honesty, industry reputation and crisis dependability can reduce perceived vulnerability to such uncertainty, consistent with commitment–trust theory (Morgan & Hunt, 1994) and buyer–seller trust research (Doney & Cannon, 1997). This explanation remains theoretical: perceived procurement risk was not measured as a mediator, and reverse association is possible when buyers already inclined to purchase rate their suppliers more favorably.

Inventory, delivery and service may operate as minimum qualification conditions. A supplier already considered by the purchasing department may need acceptable stock access, predictable delivery and basic assistance before relational confidence differentiates continued preference. Restricted variation among qualified suppliers could weaken incremental associations. However, supplier eligibility thresholds and prior screening were not recorded, so this is a plausible explanation rather than a tested finding. Trust may also summarize repeated fulfilment experience, leaving less unique variance for operational perceptions in a joint model.

The statistics offer additional explanations. The .735 latent IR–TR correlation indicates substantial shared variance. Technical support has limited reliability and convergence, increasing uncertainty about what its path represents. The achieved sample is smaller than planned and cannot exclude modest effects. Further, the seven-item HC3 and bootstrap regressions support inventory and technical service, demonstrating that the statement “only trust matters” is too broad. The defensible result is that trust is the most consistently supported association, while the independent operational associations depend on measurement and adjustment choices.

Recent resilience scholarship further explains why a weak direct intention path need not imply weak operational value. Barakat et al. (2024) distinguish direct effects from pathways through resilience capabilities; Ivanov et al. (2023) emphasize adaptability and continuity. Operational readiness may improve recovery or uptime without directly changing stated preference, or may influence intention through

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

experienced service and trust. The present model tests neither mediation nor realized operational performance; longitudinal procurement and maintenance records are needed to distinguish these possibilities.

Practical Implications

Supplier managers should build credibility through verifiable conduct: accurate stock disclosures, written lead-time commitments, prompt exception notices, traceable part specifications and accountable crisis resolution. Procurement managers should compare these commitments with realized performance rather than relying solely on a relationship rating. Trust deserves explicit attention, but this association does not justify reducing inventory, logistics or technical-support investment.

A balanced supplier scorecard should track critical-spare fill rate, promised versus actual delivery, response and restoration time, technical-document accuracy, warranty resolution and communication transparency. Weights should reflect equipment criticality, substitutability and downtime exposure, rather than the four SEM coefficients. The coefficients estimate conditional intention associations and are not economic benefits, causal returns or optimized selection weights. Becerra and Diaz (2025) support context-dependent resilience criteria, while Onukwulu et al. (2025) emphasize broad supplier evaluation.

Industry-specific application should be based on operating needs rather than unsupported mean rankings. Automotive and Tyre plants could pilot emergency replenishment and maintenance-window commitments; Food and FMCG plants could validate traceability, compatibility and timely restoration; Leather and miscellaneous industries require further diagnosis before priorities are assigned. These are proposed applications, not tested sector treatment effects. Managers should track purchase conversion, supplier retention, stockouts and downtime before and after implementation to evaluate practical value.

LIMITATIONS AND FUTURE RESEARCH

The achieved nonprobability sample has unknown geographical composition and no valid invitation-based response rate. Neither state representativeness nor industry proportionality is established. Firm and supplier clustering cannot be assessed. Cross-sectional self-reporting limits temporal order and may produce common-method and social-desirability effects. Purchase intention includes recommendation and relationship preference and is broader than observed purchase volume; no order, downtime or operational-performance outcome was recorded.

The 22-item selection is sample-dependent and has not been cross-validated. Technical-support reliability and AVE are low, while trust and intention fail the Fornell–Larcker criterion despite acceptable HTMT point estimates. Normal-theory SEM errors may be sensitive to ordinal nonnormality; robust ordinal SEM, bootstrap latent-path intervals and independent replication remain needed. Composite sensitivity analyses improve transparency without resolving those weaknesses. Small sector cells preclude credible multi-group SEM; future sampling should record state, firm, supplier and equipment-criticality information, recruit balanced sector strata, justify sample size with model-specific simulation, and test measurement invariance before path comparisons.

CONCLUSION

Among 144 industrial purchasing respondents, trust and reputation have the most consistently supported positive association with spare-parts purchase intention. The five-factor model achieves acceptable approximate fit, but technical-support measurement and trust–intention separation remain concerns. Operational dimensions are not consistently insignificant across specifications, and exploratory sector comparisons reveal no supported mean differences. Supplier development should integrate transparent relational conduct with verified stock, delivery and technical performance. Causal, geographical and industry-wide claims require stronger sampling, measurement and longitudinal evidence.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

Declarations

The study documentation describes confidential, academic use of questionnaire responses. The authors must confirm the institutional ethics approval or exemption decision and the documented informed-consent procedure before submission. No ethics approval identifier has been supplied for verification.

Conflict of interest: The authors declare no conflict of interest. Funding: No funding support was received. Data availability: De-identified responses are held by the researchers for academic use; access is subject to participant consent and institutional requirements. Correspondence: Guruprasad S.,

Prasadguru80@gmail.com.

REFERENCES

1. Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211.
2. Anderson, J. C., & Narus, J. A. (1990). A model of distributor firm and manufacturer firm working partnerships. Journal of Marketing, 54(1), 42–58.
3. Anderson, J. C., Håkansson, H., & Johanson, J. (1994). Dyadic business relationships within a business network context. Journal of Marketing, 58(4), 1–15.
4. Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. Journal of the Academy of Marketing Science, 16, 74–94.
5. Barakat, M., Ali, A. H., Madkour, T., & Eid, A. (2024). Enhancing operational performance through supply chain integration: The mediating role of resilience capabilities under COVID-19 pandemic. International Journal of Logistics Systems and Management, 47(2), 161–184. https://doi.org/10.1504/IJLSM.2024.136486
6. Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99–120.
7. Becerra, P., & Diaz, J. (2025). Supplier selection model considering sustainable and resilience aspects for mining industry. Systems, 13(2), 81. https://doi.org/10.3390/systems13020081
8. Bentler, P. M. (1990). Comparative fit indexes in structural models. Psychological Bulletin, 107(2), 238–246.
9. Bollen, K. A. (1989). Structural Equations with Latent Variables. Wiley.
10. Byrne, B. M. (2016). Structural Equation Modeling With AMOS: Basic Concepts, Applications, and Programming (3rd ed.). Routledge.
11. Cachon, G. P., & Fisher, M. (2000). Supply chain inventory management and the value of shared information. Management Science, 46(8), 1032–1048.
12. Chopra, S., & Meindl, P. (2016). Supply Chain Management: Strategy, Planning, and Operation (6th ed.). Pearson.
13. Christopher, M. (2016). Logistics & Supply Chain Management (5th ed.). Pearson.
14. Cohen, M. A., Agrawal, N., & Agrawal, V. (2006). Winning in the aftermarket. Harvard Business Review, 84(5), 129–138.
15. Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16(3), 297–334.
16. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340.
17. Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of price, brand, and store information on buyers' product evaluations. Journal of Marketing Research, 28(3), 307–319.
18. Doney, P. M., & Cannon, J. P. (1997). An examination of the nature of trust in buyer–seller relationships. Journal of Marketing, 61(2), 35–51.
19. Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. Academy of Management Review, 23(4), 660–679.
20. Flynn, B. B., Huo, B., & Zhao, X. (2010). The impact of supply chain integration on performance: A contingency and configuration approach. Journal of Operations Management, 28(1), 58–71.

21. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), 39–50.
22. Ganesan, S. (1994). Determinants of long-term orientation in buyer–seller relationships. Journal of Marketing, 58(2), 1–19.
23. Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural equation modeling and regression: Guidelines for research practice. Communications of the Association for Information Systems, 4, Article 7.
24. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate Data Analysis (8th ed.). Cengage.
25. 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, 115–135.
26. Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. Electronic Journal of Business Research Methods, 6(1), 53–60.
27. Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling, 6(1), 1–55.
28. Ivanov, D., Dolgui, A., Blackhurst, J. V., & Choi, T.-M. (2023). Toward supply chain viability theory: From lessons learned through COVID-19 pandemic to viable ecosystems. International Journal of Production Research, 61(8), 2402–2415. https://doi.org/10.1080/00207543.2023.2177049
29. Jüttner, U., Peck, H., & Christopher, M. (2003). Supply chain risk management: Outlining an agenda for future research. International Journal of Logistics Research and Applications, 6(4), 197–210.
30. Kline, R. B. (2015). Principles and Practice of Structural Equation Modeling (4th ed.). Guilford Press.
31. Koufteros, X., Vonderembse, M., & Jayaram, J. (2005). Internal and external integration for product development: The contingency effects of uncertainty, equivocality, and platform strategy. Decision Sciences, 36(1), 97–133.
32. Kraljic, P. (1983). Purchasing must become supply management. Harvard Business Review, 61(5), 109–117.
33. Lai, K.-H., Ngai, E. W. T., & Cheng, T. C. E. (2004). An empirical study of supply chain performance in transport logistics. International Journal of Production Economics, 87(3), 321–331.
34. MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. Psychological Methods, 1(2), 130–149.
35. Mentzer, J. T., Flint, D. J., & Kent, J. L. (1999). Developing a logistics service quality scale. Journal of Business Logistics, 20(1), 9–32.
36. Morgan, R. M., & Hunt, S. D. (1994). The commitment–trust theory of relationship marketing. Journal of Marketing, 58(3), 20–38.
37. Nunnally, J. C., & Bernstein, I. H. (1994). Psychometric Theory (3rd ed.). McGraw-Hill.
38. Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of Marketing Research, 17(4), 460–469.
39. Onukwulu, E. C., Odochi-Agho, M., & Eyo-Udo, N. L. (2025). Innovations in supplier evaluation: Frameworks and techniques for supply chain resilience. International Journal of Research and Scientific Innovation, 11(12), 610–623. https://doi.org/10.51244/IJRSI.2024.11120056
40. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1), 12–40.
41. Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. International Journal of Electronic Commerce, 7(3), 101–134.
42. Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5), 879–903.
43. Rajesh, R., & Ravi, V. (2015). Supplier selection in resilient supply chains: A grey relational analysis approach. Journal of Cleaner Production, 86, 343–359.
44. Rogers, E. M. (2003). Diffusion of Innovations (5th ed.). Free Press.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue X, October 2026

45. Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. Academy of Management Review, 23(3), 393–404.
46. Sako, M. (1992). Prices, Quality and Trust: Inter-firm Relations in Britain and Japan. Cambridge University Press.
47. Sheth, J. N. (1973). A model of industrial buyer behavior. Journal of Marketing, 37(4), 50–56.
48. Sirdeshmukh, D., Singh, J., & Sabol, B. (2002). Consumer trust, value, and loyalty in relational exchanges. Journal of Marketing, 66(1), 15–37.
49. Srivastava, S. K. (2007). Green supply-chain management: A state-of-the-art literature review. International Journal of Management Reviews, 9(1), 53–80.
50. Ulaga, W., & Eggert, A. (2006). Value-based differentiation in business relationships: Gaining and sustaining key supplier status. Journal of Business Research, 59(1), 119–128.
51. Wagner, S. M., & Bode, C. (2008). An empirical examination of supply chain performance along several dimensions of risk. Journal of Business Logistics, 29(1), 307–325. https://doi.org/10.1002/j.2158-1592.2008.tb00081.x
52. Williamson, O. E. (1985). The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting. Free Press.
53. Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means–end model and synthesis of evidence. Journal of Marketing, 52(3), 2–22.
54. Zsidisin, G. A. (2003). A grounded definition of supply risk. Journal of Purchasing and Supply Management, 9(5–6), 217–224.