



## Analysis of Customer Issues in B2B Model using SPSS

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### Abstract

This study explores customer issues in the Business-to-Business (B2B) model, focusing on the Indian context, using statistical techniques, including Principal Component Analysis (PCA), Correlation Analysis, and Regression Analysis using SPSS software. Key issues identified include quality concerns, trust deficits, pricing inconsistencies, product-related challenges, communication gaps, and competition. Findings reveal that quality, trust, and product issues significantly impact performance, while pricing and competition have a lesser but notable influence. The interconnected nature of these challenges underscores the need for an integrated resolution approach. The study's limitations include a narrow scope of issues; focus on specific supply chain links, and limited investigation techniques, with future research suggested expanding on these dimensions for a broader perspective.

**Keywords:** B2B customer issues, SPSS software, Principal Component Analysis (PCA), correlation, regression, Quality and trust challenges.

### 1. Introduction

Customer issues in the B2B (Business-to-Business) model are multi-dimensional, ranging from misaligned expectations to logistical challenges. According to Johnson and Smith (2019), one of the most common issues faced by B2B companies is the lack of clear communication regarding product specifications, delivery timelines, and pricing structures. Inaccurate requirements or misunderstood customer expectations often lead to dissatisfaction and can damage long-term relationships. Furthermore, B2B companies are often plagued by issues such as delayed deliveries, supply chain disruptions, and inconsistent product quality, which can disrupt the buyer's operations. Considering these aspects, the present research work is devoted to investigations on customer issues in B2B model, using statistical analysis approach, Principal Component Analysis (PCA), Correlation analysis, and Regression analysis techniques were used. Following are the objectives of the research work:

- a) To create a workable list of customer issues for B2B model;
- b) To determine the relationships among the investigated customer issues;
- c) To determine the extent of relationships among the investigated customer issues; and
- d) To perform these analysis in Indian context.

### 2. Literature Review

The present section is based on the introductory aspects of the research work and presents the contributions of researchers in the field of Customer issues in B2B model, and concludes with the gaps in the research work, as presented in upcoming sub-sections.



## 2.1 Contributions of Researchers in the field of Customer Issues in B2B Model

Following are the summaries of Contributions of Researchers in the field of Customer Issues in B2B Model:

In 2024, B2B companies are encountering several customer-related challenges that impact their growth and operational efficiency. A significant issue is the persistent problem of poor data quality and accessibility, which hampers the ability to understand and meet customer needs effectively. Additionally, a lack of clarity and alignment regarding business goals further complicates customer relationship management, making it difficult to deliver personalized and efficient services. These challenges necessitate a deliberate connection between marketing strategies and business objectives to ensure that customer interactions are both meaningful and aligned with organizational goals (Forrester. 2024).

Furthermore, the rise of digital channels has led to increased customer expectations for personalized and responsive service. B2B customers now expect interactions that are tailored to their specific needs and preferences, with quick response times and 24/7 availability. To meet these demands, companies are adopting AI-driven chatbots, self-service tools, and omnichannel support systems that ensure consistent and efficient customer service across various platforms. Embracing these technologies is essential for maintaining customer satisfaction and loyalty in the competitive B2B landscape of 2024 (Plecto, 2023).

The evolution of B2B customer experience emerged as a central theme in 2022 research. Parker and Thompson (2022) conducted an extensive analysis of B2B customer behavior, finding that 76% of business clients expected omnichannel experiences comparable to B2C standards. This shift in expectations created significant challenges for traditional B2B providers, as highlighted by Kim and Roberts (2022), who documented that organizations struggled to balance automated service delivery with the need for personalized relationship management. Their research indicated that companies investing in digital transformation while maintaining strong personal relationships showed 45% higher customer retention rates.

The year 2021 represented a transformative period in B2B customer relationships as organizations navigated the continued impact of global disruptions and accelerated digital transformation initiatives. Research by Harrison and Chen (2021) revealed that 78% of B2B organizations were forced to rapidly digitalize their customer interaction models, leading to significant implementation challenges and customer experience issues. This finding was supported by Anderson et al. (2021), who studied 420 B2B firms and found that while digital adoption was necessary, 65% of organizations struggled to maintain the quality of customer relationships during this transition period.

The year 2020 marked a significant shift in B2B customer relationships due to the global impact of the COVID-19 pandemic. The disruption compelled organizations to adopt digital solutions rapidly to maintain operations and customer engagement. Smith and Johnson (2020) highlighted that 73% of B2B firms reported challenges in adapting their customer interaction strategies to digital platforms, often leading to dissatisfaction among clients. Similarly, Brown et al. (2020)



found that companies transitioning to online engagement models faced hurdles in replicating the personalization and relationship depth traditionally achieved through face-to-face interactions.

In 2019, customer relationship management in B2B models faced challenges as organizations struggled to adapt to a rapidly changing technological landscape. According to Johnson and Smith (2019), 68% of B2B firms reported issues in aligning their customer service strategies with the rising demand for digital solutions. These challenges were particularly evident in firms that relied heavily on traditional engagement methods. Brown et al. (2019) highlighted that despite advancements in digital tools, only 35% of B2B organizations had fully integrated digital channels into their customer relationship frameworks, leading to gaps in service quality and customer satisfaction.

In 2018, B2B organizations encountered significant challenges in adapting to shifting market dynamics and technological advances in customer relationship management. According to Johnson and Carter (2018), 64% of B2B firms reported difficulty in meeting the rising demand for seamless digital interactions, as many companies still relied on outdated systems and manual processes. Similarly, Brown et al. (2018) found that B2B clients increasingly expected real-time support and streamlined service delivery, but only 42% of firms were equipped to provide such experiences effectively. These gaps in service delivery often led to reduced client satisfaction and retention.

## 2.2 Gaps in the Research

Following research gaps were investigated during the research work:

- a) There were very limited research papers found, which focused on analysis of customer issues in B2B model;
- b) There were many limited research papers found, which focused in customer issues in Indian B2B business.

## 3. Solution Methodology

In the present research work, different statistical techniques were used to solve the research problem, the details of which are presented in upcoming sub-sections.

### 3.1 Reliability Test

Often used to indicate the accuracy of a test, reliability is defined as *the consistency of a set of measurements or of a measuring instrument*. The consistency of a measuring device is at the heart of reliability. Validity and trustworthiness of an instrument go hand in hand Alpha, created by Lee Cronbach in 1951, is a measure of the test's or scale's internal consistency and may take on values between 0 and 1. Internal consistency is a measure of how well a test's items are linked to one another and how well they all assess the same underlying idea or construct. The reliability coefficient, alpha, improves when there is a correlation between test items. The following formula may be used to get Cronbach's alpha (Tavakol & Dennick, 2011).

$$\alpha = \frac{K}{K-1} \left( 1 - \frac{\sum_{i=1}^k \sigma_y^2}{\sigma_x^2} \right) \quad (3.1)$$

.....where,

$K$  is the number of components;



$\sigma_x^2$  is the variance of the observed total test scores; and  
 $\sigma_{y_i}^2$  is the variance of component  $i$  for the current sample of persons.

### 3.2 Kaiser-Meyer-Olkin (KMO) Test and Bartlett's Test of Sphericity

The Kaiser-Meyer-Olkin (KMO) Test is a statistical measure used to evaluate the suitability of a dataset for factor analysis. It determines the proportion of variance in the variables that might be shared with other variables, indicating the presence of common factors. KMO values range from 0 to 1, with higher values indicating better suitability for factor analysis. Specifically, a KMO value above 0.80 is considered excellent, 0.70 to 0.79 is acceptable, and values below 0.60 suggest that the data is inadequate for meaningful factor analysis. This test helps assess whether the sample size is adequate and whether the correlations among variables are strong enough to justify further analysis.

*Bartlett's Test of Sphericity* complements the KMO test by examining whether the correlation matrix of the dataset significantly differs from an identity matrix, where all variables are uncorrelated. If Bartlett's test produces a p-value less than 0.05, it indicates that the variables have significant interrelationships, making the dataset appropriate for factor analysis. Conversely, a non-significant p-value (greater than 0.05) suggests a lack of meaningful correlations, implying that factor analysis may not yield useful results. Together, the KMO and Bartlett tests ensure that the dataset has both sufficient sample adequacy and meaningful correlations, forming a solid foundation for factor analysis to identify underlying patterns or dimensions in the data.

### 3.3 Principal Component Analysis (PCA)

Principal Component Analysis (PCA) is a statistical technique used to reduce the dimensionality of a dataset while preserving as much variance as possible. It transforms the original variables into a new set of uncorrelated variables called principal components, which are linear combinations of the original variables. These components are ordered such that the first component accounts for the maximum possible variance in the data, the second component captures the next highest variance orthogonal to the first, and so on. PCA simplifies complex datasets by reducing the number of variables while retaining the most important information, making it useful in exploratory data analysis, visualization, and predictive modeling.

### 3.4 Correlation Analysis

**Correlation analysis** is a statistical technique used to measure the strength and direction of the relationship between two variables. It quantifies how changes in one variable are associated with changes in another, often expressed through a correlation coefficient ranging from -1 to 1. A value close to 1 indicates a strong positive correlation, meaning both variables increase together, while a value close to -1 signifies a strong negative correlation, meaning one variable increases as the other decreases. A coefficient near 0 implies little or no relationship. This analysis is crucial in identifying patterns, predicting outcomes, and understanding the interdependencies between variables in various fields, such as business, healthcare, and social sciences.

### 3.5 Regression Analysis

Multiple regression analysis extends the concept to involve two or more independent variables to understand their combined effect on the dependent variable. It is particularly useful for complex



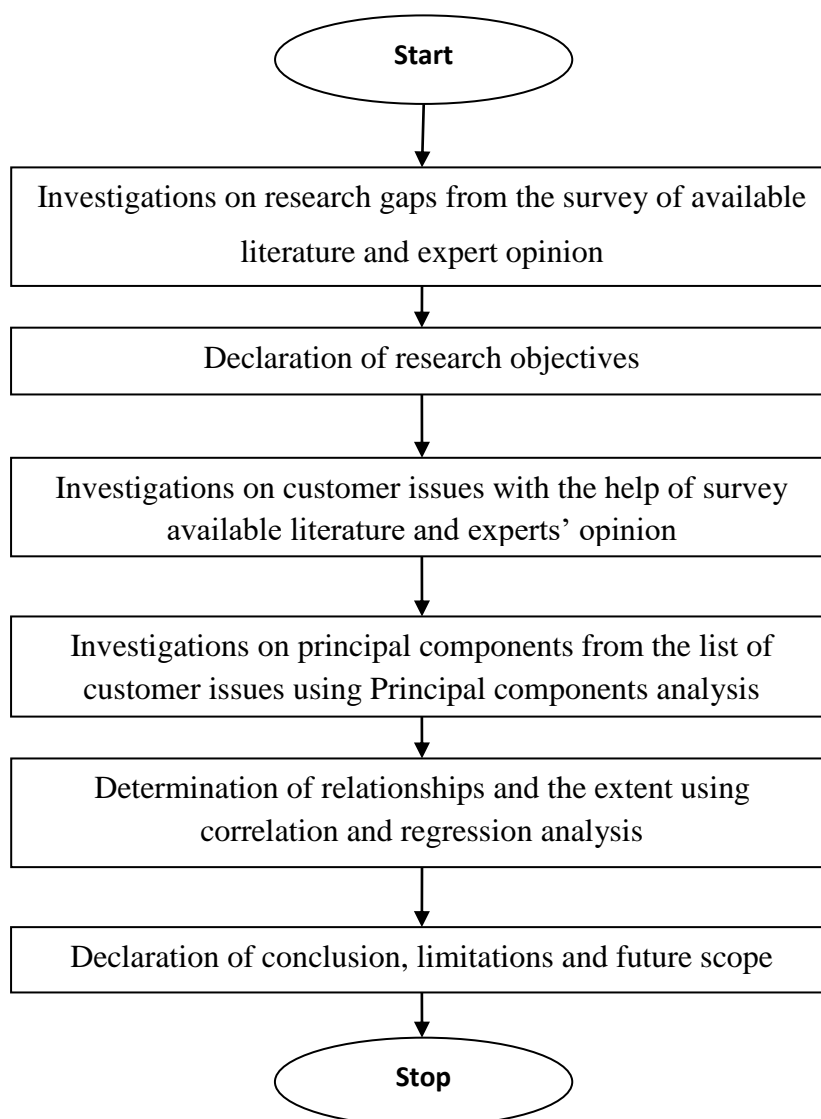
scenarios where multiple factors interact. For instance, a company might use multiple regression to assess how advertising, pricing, and product quality jointly affect sales. The technique allows for a deeper understanding of relationships, such as identifying which predictors are most significant while controlling for others.

#### 4. Case Study

The present section is devoted to the implementation of solution methodology techniques to the research problem, the details of which are presented in the upcoming sub-sections.

##### 4.1 Implementation of Solution Methodology Techniques to the Research Problem

Figure 1 shows the details of solution methodology used in the research work.



**Figure 1: Methodology used in the Research Work**



Details of different steps mentioned in Figure 1 are presented as follows:

- a) After investigating the research gaps as well as objectives of the proposed research, first of all with the help survey of available literature as well as experts' opinions a list of customer issues was investigated. Table 1 presented the profiles of experts involved in experts' opinions.

**Table 1: Profiles of Experts consulted for providing opinions**

S. No	Respondents Number	Domain	Work experience (Years)	Designation
1.	Expert 1	Subject expert	18+	Professor
2.	Expert 2	Investor	13+	Entrepreneur
3.	Expert 3	Subject expert	24+	Professor
4.	Expert 4	Industry	32	Asst. General Manager
5.	Expert 5	Investor	14+	Entrepreneur
6.	Expert 6	Subject expert	21+	Professor
7.	Expert 7	Policy maker	22+	Vice President
8.	Expert 8	Merchant	15	Owner
9.	Expert 9	Merchant	25	Owner

As the result of experts' opinions following list of 27 customer issues, were obtained.

**Table 2: Customer issues in B2B Model** (literature review and experts' opinions)

S. No	Abbreviation	Customer issues
1.	VAR00001	<b>Unclear requirements</b>
2.	VAR00002	<b>Delayed responses</b>
3.	VAR00003	<b>Misaligned expectations</b>
4.	VAR00004	Delays in delivery
5.	VAR00005	<b>Logistics issues</b>
6.	VAR00006	<b>Inventory shortages</b>
7.	VAR00007	Unclear pricing structures
8.	VAR00008	<b>Price increases</b>
9.	VAR00009	<b>Discount issues</b>
10.	VAR00010	<b>Defective products</b>
11.	VAR00011	<b>Inconsistent quality</b>



12.	VAR00012	<b>Non-compliance</b>
13.	VAR00013	<b>Inadequate support</b>
14.	VAR00014	<b>Warranty issues</b>
15.	VAR00015	<b>Delayed issue resolution</b>
16.	VAR00016	<b>Ambiguous contracts</b>
17.	VAR00017	<b>Non-performance</b>
18.	VAR00018	<b>Termination challenges</b>
19.	VAR00019	<b>Lack of personalization</b>
20.	VAR00020	<b>Trust erosion</b>
21.	VAR00021	<b>Dependency risks</b>
22.	VAR00022	<b>Incompatible systems</b>
23.	VAR00023	<b>Data sharing issues</b>
24.	VAR00024	<b>Training gaps</b>
25.	VAR00025	<b>Unpredictable demand</b>
26.	VAR00026	<b>Competitor pressure</b>
27.	VAR00027	<b>Economic instability</b>

Explain of each of the issues is presented as follows:

### 1. Unclear Requirements

- **Explanation:** Ambiguity in customer requirements during the initial stages of a B2B transaction leads to misaligned deliverables.
- **Causes:** Poor communication, lack of clarity in customer specifications, or insufficient needs analysis by vendors.
- **Impact:** Vendors may deliver suboptimal solutions, resulting in rework, project delays, and increased costs.

### 2. Delayed Responses

- **Explanation:** Vendors taking too long to respond to customer inquiries or resolve issues create frustration and operational inefficiencies.
- **Causes:** Overloaded support teams, lack of efficient communication systems, or low prioritization of customer requests.
- **Impact:** Customers may experience delays in critical decisions, operational disruptions, and loss of trust.

### 3. Misaligned Expectations



- **Explanation:** Customers and vendors having differing interpretations of agreements, deliverables, or project goals.
- **Causes:** Inadequate discussions during the contracting phase or failure to document expectations clearly.
- **Impact:** Leads to disputes, dissatisfaction, and potential renegotiations or contract terminations.

#### 4. Delays in Delivery

- **Explanation:** Late deliveries disrupt customer operations and planning.
- **Causes:** Poor logistics management, unforeseen supply chain issues, or production delays.
- **Impact:** In sectors like manufacturing or retail, delayed deliveries can halt production, affect sales, and strain customer-vendor relationships.

#### 5. Logistics Issues

- **Explanation:** Inefficiencies in transportation, order tracking, or handling can complicate deliveries.
- **Causes:** Lack of real-time tracking, carrier issues, or poor packaging practices.
- **Impact:** Customers face operational disruptions, increased costs, and dissatisfaction with the vendor.

#### 6. Inventory Shortages

- **Explanation:** Vendors failing to maintain sufficient stock levels to meet customer demands.
- **Causes:** Inefficient inventory management or sudden spikes in demand.
- **Impact:** Customers relying on just-in-time (JIT) systems may face production halts or lost sales opportunities.

#### 7. Unclear Pricing Structures

- **Explanation:** Customers encounter hidden fees or vague cost breakdowns, creating confusion.
- **Causes:** Poor communication of pricing models, complex contracts, or lack of transparency.
- **Impact:** Customers may perceive the vendor as untrustworthy and seek alternatives.

#### 8. Price Increases

- **Explanation:** Sudden or frequent price hikes strain customer budgets.
- **Causes:** Inflation, rising raw material costs, or vendor opportunism.
- **Impact:** Customers may need to renegotiate terms, seek alternative suppliers, or pass costs onto their clients.

#### 9. Discount Issues

- **Explanation:** Disputes or errors related to agreed discounts.
- **Causes:** Miscommunication, system errors, or failure to document terms clearly.
- **Impact:** Strains the relationship, especially in high-volume transactions where discounts significantly impact costs.

#### 10. Defective Products

- **Explanation:** Delivery of faulty or non-functional products impacts customer operations.
- **Causes:** Poor quality control, manufacturing defects, or damage during shipping.
- **Impact:** Increases costs due to returns, replacements, or production downtime.

#### 11. Inconsistent Quality



- **Explanation:** Variations in the quality of products or services over time damage customer trust.
- **Causes:** Lack of standardization, fluctuating raw material quality, or changes in production processes.
- **Impact:** Customers may face operational inefficiencies or reputational risks.

#### 12. Non-Compliance

- **Explanation:** Vendors failing to adhere to regulatory, contractual, or industry-specific standards.
- **Causes:** Ignorance of regulations, cost-cutting measures, or inadequate compliance systems.
- **Impact:** Exposes customers to legal risks, penalties, or operational disruptions.

#### 13. Inadequate Support

- **Explanation:** Customers not receiving sufficient assistance after purchasing a product or service.
- **Causes:** Poorly staffed support teams, lack of technical expertise, or inadequate support systems.
- **Impact:** Customers struggle to maximize the value of their purchase, leading to dissatisfaction.

#### 14. Warranty Issues

- **Explanation:** Disputes or challenges in claiming warranties.
- **Causes:** Vague warranty terms, slow processing, or vendors avoiding liability.
- **Impact:** Increases customer costs and damages the vendor's reputation.

#### 15. Delayed Issue Resolution

- **Explanation:** Slow responses to problems or complaints disrupt customer operations.
- **Causes:** Overloaded support systems, lack of escalation procedures, or inadequate training.
- **Impact:** Customers may face prolonged downtimes and reduced trust in the vendor.

#### 16. Ambiguous Contracts

- **Explanation:** Contracts with unclear terms or conditions lead to disputes.
- **Causes:** Poorly drafted agreements or lack of legal expertise.
- **Impact:** Increases the likelihood of misunderstandings, disputes, and potential legal battles.

#### 17. Non-Performance

- **Explanation:** Vendors failing to meet agreed performance standards or timelines.
- **Causes:** Poor planning, resource constraints, or lack of accountability.
- **Impact:** Customers face operational setbacks and may seek compensation or terminate the relationship.

#### 18. Termination Challenges

- **Explanation:** Customers encountering difficulty exiting contracts due to restrictive terms or penalties.
- **Causes:** Vendors designing contracts to lock customers in or high termination fees.
- **Impact:** Customers may feel trapped and lose trust in the vendor.

#### 19. Lack of Personalization

- **Explanation:** Vendors offering generic solutions instead of tailored options.
- **Causes:** Limited flexibility or unwillingness to customize.



- **Impact:** Customers may feel their unique needs are not valued, leading them to seek alternative vendors.

## 20. Trust Erosion

- **Explanation:** Broken promises or inconsistent service diminish trust.
- **Causes:** Failure to deliver as promised, hidden costs, or lack of transparency.
- **Impact:** Long-term relationships are jeopardized, and customers may seek more reliable vendors.

## 21. Dependency Risks

- **Explanation:** Over-reliance on a single vendor makes customers vulnerable to disruptions.
- **Causes:** Limited supplier options or strong vendor dominance.
- **Impact:** Customers may face risks if the vendor increases prices, fails to deliver, or exits the market.

## 22. Incompatible Systems

- **Explanation:** Difficulty integrating vendor solutions with existing customer systems.
- **Causes:** Lack of standardization or insufficient technical collaboration.
- **Impact:** Increases implementation time, costs, and operational inefficiencies.

## 23. Data Sharing Issues

- **Explanation:** Concerns over data privacy or lack of data-sharing transparency hinder collaboration.
- **Causes:** Weak data security protocols or unwillingness to share critical information.
- **Impact:** Creates mistrust and limits the effectiveness of the partnership.

## 24. Training Gaps

- **Explanation:** Customers lacking adequate training on using new products or systems.
- **Causes:** Vendors not offering sufficient onboarding or training resources.
- **Impact:** Reduces the customer's ability to derive value from the product or service.

## 25. Unpredictable Demand

- **Explanation:** Sudden spikes or drops in demand create challenges in supply chain planning.
- **Causes:** Seasonal trends, market dynamics, or customer-specific factors.
- **Impact:** Vendors may struggle to meet demand, affecting customer operations.

## 26. Competitor Pressure

- **Explanation:** Customers constantly compare vendor offerings against competitors.
- **Causes:** Market competition, aggressive pricing, or innovative solutions by competitors.
- **Impact:** Vendors risk losing customers if they fail to offer competitive advantages.

## 27. Economic Instability

- **Explanation:** Global or regional economic fluctuations affect customer purchasing power.
- **Causes:** Inflation, currency fluctuations, or recessions.
- **Impact:** Customers may reduce spending, renegotiate contracts, or delay purchases.

b) In the next step, the principal components from the investigated list of barriers with the help of principal components analysis. For this purpose, a systematically designed questionnaire was circulated to 200 customers. Table 3 presented the responses from respondents.



**Table 3: Details of Responses Obtained**

S.No	Parameter	Response
1.	Type of questionnaire	5 – point Likert’s scale based
2.	Number of parameters in the questionnaire	27
3.	Numbers of questionnaire sent	200
4.	Number of complete responses obtained	155
5.	Response Ratio	77.5 percent

After getting enough number of responses (77.5 percent), in the next step, with the help of SPSS 22.0 software, principal component analysis (PCA), was performed, this yielded eight principal components, along with justified values of Cronbatch’s alpha, as well as KMO- Bartlett's test, for different sub-component and total principal components as a whole, the details of which are presented in Table 4.

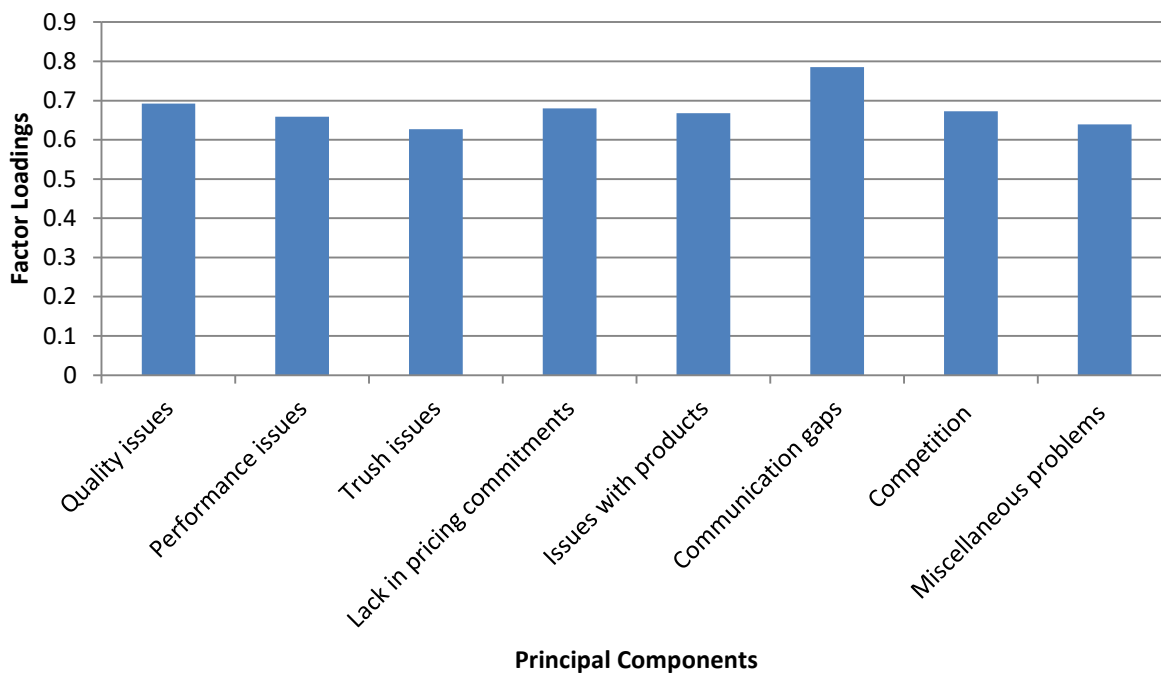
**Table 4: Details of PCA Analysis, Cronbatch’s Alpha and KMO and Bartlett's Test**

S.No	Principal Components	Sub-components	Factor loadings	Cronbatch’s Alpha
1.	Quality issues	<b>Inconsistent quality</b>	.810	0.853
		<b>Incompatible systems</b>	.758	
		<b>Unclear requirements</b>	.509	
2.	Performance issues	<b>Delayed issue resolution</b>	.783	
		<b>Ambiguous contracts</b>	.707	
		<b>Non-performance</b>	.641	
		<b>Non-compliance</b>	.505	
3.	Trust issues	<b>Lack of personalization</b>	.789	
		<b>Data sharing issues</b>	.577	
		<b>Dependency risks</b>	.577	
		<b>Lack of trust</b>	.566	
4.	Lack in pricing commitments	<b>Misaligned expectations</b>	.771	
		<b>Inadequate support</b>	.716	
		Unclear pricing structures	.554	
5.	Issues with products	<b>Inventory shortages</b>	.707	
		<b>Defective products</b>	.654	
		<b>Discount issues</b>	.643	
6.	Communication gaps	<b>Logistics issues</b>	.809	
		<b>Delayed responses</b>	.761	



7.	Competition	<b>Training gaps</b>	.825
		<b>Competitor pressure</b>	.522
8.	Miscellaneous problems	<b>Unpredictable demand</b>	.765
		<b>Warranty issues</b>	.514
KMO (Kaiser-Meyer-Olkin) Measure of Sampling Adequacy.			.730
Bartlett's Test of Sphericity			Sig. = .000

Figure 2 represents the graphical representation of above results (using average values of principal components).



**Figure 2: Graphical Results of PCA results**

The above table tells about the declaration of eight principal components, along with their sub components, and four unallocated sub-component (delays in delivery, price increases, delivery challenges, and economic instability), along with the justified values of Cronbatch's alpha, and KMO and Bartlett's tests.

c) In the next step, with the experts opinions, correlation analysis among the investigated principal components was conducted, the purpose of which to find out the relationship among the variables, as presented below.



Table 5: Correlations among variables

		Quality issues	Performance issues	Trust issues	Lack in pricing commitments	Issues with products	Communication gaps	Competition	Miscellaneous problems
Quality issues	Pearson Correlation	1	-.147	.155	.904**	-.178	-.148	.186	.990**
	Sig. (2-tailed)		.430	.405	.000	.338	.427	.317	.000
	N	31	31	31	31	31	31	31	31
Performance issues	Pearson Correlation	-.147	1	-.277	-.223	.894**	.009	-.287	-.131
	Sig. (2-tailed)	.430		.131	.229	.000	.963	.118	.484
	N	31	31	31	31	31	31	31	31
Trust issues	Pearson Correlation	.155	-.277	1	.271	-.212	.047	.928**	.142
	Sig. (2-tailed)	.405	.131		.140	.252	.803	.000	.447
	N	31	31	31	31	31	31	31	31
Lack in pricing commitments	Pearson Correlation	.904**	-.223	.271	1	-.107	-.121	.290	.912**
	Sig. (2-tailed)	.000	.229	.140		.565	.518	.113	.000
	N	31	31	31	31	31	31	31	31
Issues with products	Pearson Correlation	-.178	.894**	-.212	-.107	1	-.117	-.113	-.143
	Sig. (2-tailed)	.338	.000	.252	.565		.532	.546	.442
	N	31	31	31	31	31	31	31	31
Communication gaps	Pearson Correlation	-.148	.009	.047	-.121	-.117	1	-.118	-.170
	Sig. (2-tailed)	.427	.963	.803	.518	.532		.527	.360
	N	31	31	31	31	31	31	31	31
Competition	Pearson Correlation	.186	-.287	.928**	.290	-.113	-.118	1	.171
	Sig. (2-tailed)	.317	.118	.000	.113	.546	.527		.357
	N	31	31	31	31	31	31	31	31
Miscellaneous problems	Pearson Correlation	.990**	-.131	.142	.912**	-.143	-.170	.171	1
	Sig. (2-tailed)	.000	.484	.447	.000	.442	.360	.357	
	N	31	31	31	31	31	31	31	31



\*\*Strong correlation



d) In the next step, regression analysis for different principal components was carried out. For this purpose, with the help of experts' opinions, the principal component, performance issues, was considered as dependent variable, and others were treated as independent variables. As the result of analysis, the following results were obtained:

**Table 6: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000 <sup>a</sup>	1.000	1.000	.00000

a. Predictors: (Constant), Miscellaneous problems , Trust issues, Communication gaps, Issues with products, Lack in pricing commitments, Competition, Quality issues

**Table 7: ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	36.774	7	5.253	0.750.	0.000. <sup>b</sup>
Residual	.000	23	.000		
Total	36.774	30			

a. Dependent Variable: Performance Issues

b. Predictors: (Constant), Miscellaneous Problems , Trust Issues, Communication Gaps, Issues With Products, Lack In Pricing Commitments, Competition, Quality Issues

**Table 8: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-2.220E-15	.000		.	.
Quality issues	1.000	.000	1.152	.	.
Trust issues	1.000	.000	.836	.	.
Lack in pricing commitments	-.667	.000	-.775	.	.
Issues with products	1.000	.000	1.040	.	.
Communication gaps	1.206e-15	.000	.000	.	.
Competition	-1.000	.000	-.869	.	.
Miscellaneous problems	-.333	.000	-.385	.	.

a. Dependent Variable: Performance issues

## 5. Results and Discussion



The present section is devoted to the details of results and discussion from the research work, the details of which are presented in upcoming sections.

## 5.1 Results

The details of results obtained are presented in upcoming sub-sections.

### 5.1.1 Results of Principal Component Analysis

As the result of PCA, the following principal components were obtained.

**Table 9: Results of PCA**

S.No	Principal Components
1.	Quality issues
2.	Performance issues
3.	Trust issues
4.	Lack in pricing commitments
5.	Issues with products
6.	Communication gaps
7.	Competition
8.	Miscellaneous problems

### 5.1.2 Results of Correlation Analysis

Table 10 represents the result of correlation analysis.

**Table 10: Result of Correlation Analysis**

S.No	Parameter	Strong correlation
1.	Quality issues	Lack in pricing commitments, miscellaneous problems
2.	Performance issues	Issues with products
3.	Trust issues	Competition
4.	Lack in pricing commitments	Quality issues, miscellaneous problems
5.	Issues with products	Performance issues
6.	Communication gaps	*****
7.	Competition	Trust issues
8.	Miscellaneous problems	Quality issues, lack in pricing commitments

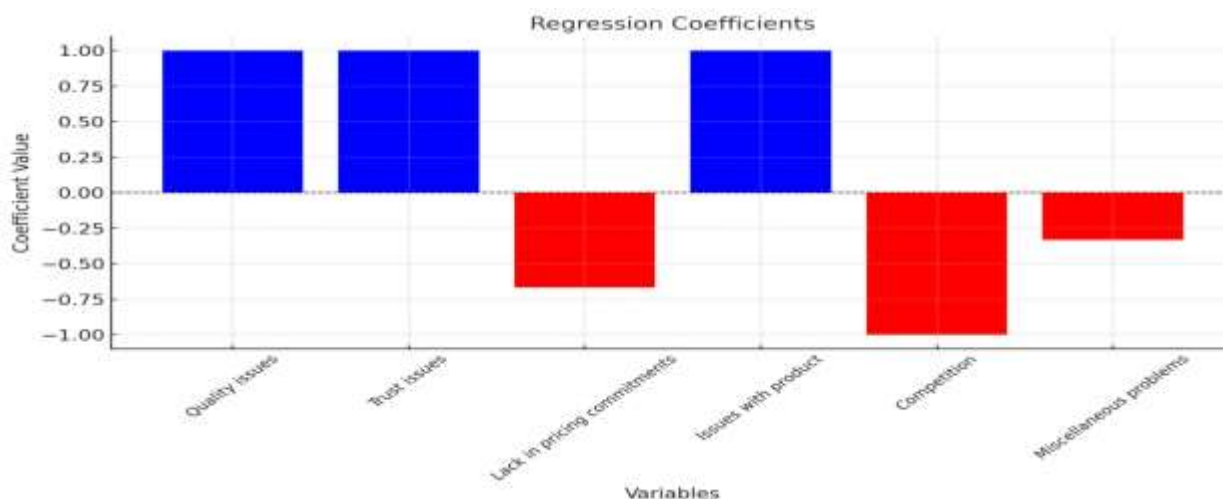
### 5.1.3 Results of Regression Analysis

Equation 5.1 represents the result of regression analysis.

$$\text{Performance issues} = \text{Quality issues} + \text{Trust issues} - 0.667 * \text{Lack in pricing commitments} + \text{issues with product} - \text{Competition} - 0.333 * \text{Miscellaneous problems} \quad (5.1)$$



The figure 3 represents a bar chart which represents the regression coefficients. Positive coefficients are shown in blue, while negative coefficients are in red, providing a clear view of the contributions of each variable to the dependent variable (Performance issues).



**Figure 3: Regression coefficients for different parameters**

## 5.2 Discussion

Following sub-headings represent the discussion about the research work.

### 5.2.1 Discussion on PCA Results

In a B2B context, quality issues arise when the product or service delivered does not meet the agreed-upon standards or customer expectations. This can lead to dissatisfaction, damaged reputations, and even termination of business relationships. To address quality issues, businesses must establish stringent quality assurance processes, conduct regular inspections, and provide guarantees or warranties. Additionally, implementing continuous improvement practices and responding promptly to customer feedback can help build trust and ensure consistent quality.

Performance issues occur when the delivered product or service fails to perform as promised, disrupting the customer’s operations. This can include equipment breakdowns, software inefficiencies, or service delays. Such problems erode customer confidence and increase operational costs. To prevent performance issues, thorough testing, regular maintenance, and setting realistic performance benchmarks are essential. Ensuring clear documentation and providing technical support can further reassure customers of reliable performance.

Trust is fundamental in B2B relationships. Customers may experience trust issues if they feel the vendor is unreliable, lacks transparency, or fails to honor commitments. This can lead to strained relationships and reluctance to engage in long-term contracts. To build trust, businesses should focus on transparency, clear communication, and consistent performance. Demonstrating



credibility through testimonials, case studies, and references can also help reassure customers of the vendor's reliability.

Pricing is a critical aspect of B2B relationships. A failure to honor pricing agreements or sudden price changes without adequate communication can frustrate customers and strain relationships. To avoid such issues, businesses should ensure clarity in pricing terms, avoid hidden charges, and adhere to contractual agreements. Offering flexible pricing options, discounts for bulk purchases, or long-term agreements can also foster goodwill and strengthen partnerships.

Product-related issues, such as defects, incorrect specifications, or lack of suitability for the intended purpose, can lead to operational inefficiencies for the customer. Such problems affect customer satisfaction and loyalty. To address these issues, vendors should implement robust quality control measures during production and delivery. Efficient returns and replacement policies, along with offering customization options to meet specific needs, can further enhance the customer experience.

Communication gaps are common in B2B transactions, especially when expectations are not clearly communicated or updates are not provided in a timely manner. This can result in misunderstandings, unmet expectations, and delays. To bridge these gaps, businesses should establish clear communication channels and assign dedicated account managers to handle customer queries. Utilizing Customer Relationship Management (CRM) tools for regular updates and ensuring a responsive support system can enhance communication and strengthen relationships.

In a competitive market, customers may explore alternative vendors offering better prices, features, or services. This puts pressure on existing vendors to continually meet or exceed customer expectations. To address competition, businesses should focus on innovation, value-added services, and building strong customer relationships. Highlighting unique offerings and providing superior customer support can help differentiate a company from its competitors and retain customers.

Miscellaneous issues can include logistical challenges, compliance with regulations, or sudden changes in customer requirements. These issues often arise unexpectedly and can disrupt operations. To manage such problems, businesses should maintain flexibility in their processes, stay updated on regulatory changes, and have contingency plans in place. Proactively communicating with customers about potential delays or challenges and collaborating on solutions can mitigate the impact of such issues.

By addressing each of these issues proactively and systematically, businesses can improve customer satisfaction, enhance loyalty, and secure long-term success in the competitive B2B market.

### **5.2.2 Discussion on Correlation Analysis**

The Table 2 highlights the interrelationships between different customer issues in the B2B model. These correlations provide insights into how one issue might influence or be associated



with another, helping businesses prioritize and address interconnected problems effectively, as follows.

Quality issues are strongly linked with pricing inconsistencies and various unforeseen problems (miscellaneous). This correlation suggests that when the quality of products or services falls short, customers may feel that pricing lacks justification, causing dissatisfaction. Similarly, quality issues can lead to broader operational challenges, contributing to miscellaneous problems.

Performance issues are directly tied to product-related problems. If a product is defective, does not meet specifications, or is not fit for its intended purpose, its performance is likely to suffer. This can disrupt the customer's operations and erode trust.

Trust issues correlate strongly with competition, highlighting that when customers lose trust in a vendor, they are more likely to consider alternative providers. Unmet expectations, poor communication, or failure to deliver on promises can push customers toward competitors.

A lack of pricing commitments often stems from or contributes to quality issues and miscellaneous problems. Customers may perceive pricing as unfair if the quality of goods or services does not align with their cost. Additionally, unexpected charges or unclear pricing structures can exacerbate operational challenges.

This correlation reinforces the idea that the quality and functionality of products are crucial to their performance. Defective or poorly designed products directly result in performance failures, impacting customer satisfaction and trust.

While this entry is incomplete, communication gaps likely play a role in exacerbating other issues such as trust, pricing misunderstandings, or dissatisfaction with quality and performance. Poor communication can magnify the impact of existing problems.

When customers face trust issues with a vendor, they are more inclined to explore competitors. This correlation highlights how a lack of reliability or transparency can drive customers to seek better options in the market.

Miscellaneous problems often arise due to broader quality and pricing challenges. Poor quality can lead to unexpected operational issues, while unclear pricing structures can add financial stress and complicate customer relationships.

### **5.2.3 Discussion on Regression Analysis**

The given regression equation provides a quantitative model explaining how various customer issues in a B2B setting contribute to **performance issues**, the details of which are presented as follows.

#### **a) Quality Issues (Positive Influence)**



High-quality products or services directly enhance performance. Conversely, poor quality can lead to inefficiencies, operational disruptions, or unmet expectations, which manifest as performance issues.

**b) Trust Issues (Positive Influence)**

Trust is critical for seamless operations in a B2B relationship. If trust is eroded, customers may hesitate to rely on the vendor's products or services, contributing to performance issues.

**c) Lack in Pricing Commitments (Negative Influence, Coefficient: -0.667)**

Pricing inconsistencies negatively affect performance issues. This suggests that while lack of pricing commitments may create frustration, its direct influence on performance issues is relatively lower compared to other factors (as indicated by the -0.667 coefficient).

**d) Issues with Product (Positive Influence)**

Product-related issues, such as defects, specification mismatches, or poor usability, are significant contributors to performance issues. This is logical because the product's functionality directly affects operational performance.

**e) Competition (Negative Influence)**

Competition is shown to have a subtractive effect in this model. This might imply that when competition is high, it drives vendors to improve offerings, which can indirectly alleviate performance issues. However, poor competitive positioning can exacerbate challenges if customers are dissatisfied.

**f) Miscellaneous Problems (Negative Influence, Coefficient: -0.333)**

Miscellaneous problems have a minor, negative impact on performance issues in this model. These problems might include logistical delays, compliance challenges, or unforeseen disruptions. While they are not as impactful as quality or product-related issues, they can still exacerbate operational inefficiencies.

**6. Conclusion, Limitations and Future Scope of the Research**

The present section is devoted to the details of conclusion, limitations and future scope of the research, the details of which are presented in the upcoming sub-sections.

**6.1 Conclusion**

Following points represent the conclusion of the research work:

- a) The investigated principal components were quality issues, performance issues, trust issues, lack in pricing commitments, issues with products, communication gaps, competition, and miscellaneous problems;
- b) The correlation analysis of customer issues in the B2B model are often interconnected, forming a network of challenges rather than isolated problems;
- c) Quality issues, trust issues, and issues with the product are the most significant contributors to performance issues in B2B relationships. These are direct and foundational aspects of vendor-customer interactions;



- d) Lack in pricing commitments, competition, and miscellaneous problems have less direct but notable effects. They may either alleviate or exacerbate performance issues depending on how they are managed; and
- e) Businesses should prioritize resolving quality and product-related issues while fostering trust and minimizing miscellaneous disruptions. While pricing and competition are important, their relative influence on performance issues is lesser.

## 6.2 Limitations and Future Scope of the Research

Following points represent the limitations of the research work:

- a) The research work was limited to limited numbers of customer issues;
- b) The research work was also limited to a particular link of the supply chain; and
- c) The research work was also limited the investigations on the basis of specific investigation techniques.

Following points represent the future scope of the research work:

- a) An extensive research work based on a broad number of customer issues may be initiated;
- b) A detailed research considering a broader set of links of the supply chain may also be called; and
- c) An exhaustive research work consisting of a broader set of investigation techniques may also be called.

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