




“The influence of customer voice on educational service quality through the mediating effects of perceived trust, value, and customer relationship management”

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THE INFLUENCE OF CUSTOMER VOICE ON EDUCATIONAL SERVICE QUALITY THROUGH THE MEDIATING EFFECTS OF PERCEIVED TRUST, VALUE, AND CUSTOMER RELATIONSHIP MANAGEMENT

Abstract

The voice of the customer, trust, value, and Customer Relationship Management are essential in improving educational service quality. However, assessing their impacts remains difficult due to the intangible nature of educational service delivery and parents' rising expectations. Lebanese schools, especially in urban areas such as Akkar, often overlook the negative effects of these factors on relationships with parents as decision makers, leading to a perceived gap between promises and actual experiences. This article aims to evaluate the influence of a customer's voice on educational service quality through the mediating roles of perceived trust, perceived value, and customer relationship management. A quantitative method with a deductive approach was employed, using a questionnaire administered to parents of students enrolled in French and English private schools in Akkar, North Lebanon. Data collection was cross-sectional and concluded on November 30, 2024. The sample consisted of 390 participants, selected through simple random sampling after securing the school managers' consent for data collection. Hypotheses were tested using Structural Equation Modeling. The study confirmed that a customer's voice has a direct statistical effect ($\beta = 0.083$) on educational service quality and an indirect effect through perceived value ($\beta = 0.021$) and customer relationship management ($p < 0.001$), except for perceived trust. Parents perceive institutional responsiveness and cost-benefit optimization as crucial indicators of quality. Trust seems to function through autonomous mechanisms that are independent of formal feedback processes. The findings emphasize that schools can enhance service quality by establishing systematic feedback systems, refining CRM strategies, and leveraging perceived value to close the gap between expectations and actual experiences.

Keywords

services, intangibility, feedback, stakeholders, parents, private institutions, Akkar, North Lebanon

JEL Classification

K12, I21, M31, M14

INTRODUCTION

In this digital age, service organizations are increasingly recognizing the importance of listening to customers and gathering their feedback to improve service quality. However, this awareness remains insufficiently operationalized due to ineffective implementation of information technologies and unautomated customer relationship management systems. The customer's voice is collected without being analyzed, or analyzed without being translated into concrete actions. Additionally, data related to customers and their opinions have usually been collected and analyzed manually or through survey agencies. This meticulous process is both time-consuming and costly. Collecting customer opinions and feedback manually does not yield



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immediate results, negatively impacting the relevance of service quality (Le et al., 2024). This process also generates a relational distance, a gap between user expectations and actual quality management, which creates a perception gap in terms of customers' trust and value. These obstacles are detrimental to customers' experience and service quality. A poor experience is spread through word of mouth and negative online reviews, leading to business failure (Yin et al., 2016). Dissatisfied customers result in the loss of current and prospective clients, a decline in market share, and damage to reputation (Bhandari & Rodgers, 2019).

Despite growing attention in service industries, divergences persist regarding the precise mechanisms by which customer voice influences service quality. Some studies favor a direct relationship between customer voice and perceived service quality. In contrast, others highlight complex, indirect effects and pathways mediated by factors such as value perception and relationship management. This gap reflects a lack of consensus in the literature and creates a need for further empirical clarification. Moreover, most studies have focused on sectors such as retail, hospitality, or financial services, leaving the educational context, where service quality is equally critical, underexplored. In the education sector, the use of customers' voices remains largely underdeveloped and poorly integrated into governance and evaluation systems. Rarely has research explored its impact through several mediating variables, such as perceived trust, perceived value, and customer relationship management. Some studies favor a direct relationship between customer voice and perceived service quality, while others highlight complex indirect effects, which raises theoretical gaps. Hence, opinions differ regarding the precise mechanisms by which customers' voice affects these variables and their role in improving service quality (Harish & Dhanya, 2022).

Therefore, the relevance of the study lies in the fact that, although education is a service sector with significant social and developmental stakes, systematic feedback from parents is still poorly integrated into quality assurance systems (Khawaja et al., 2021). Parents' voices are a vital but often underused resource in Lebanese private schools for enhancing service quality. Recent research has shown that Lebanese schools often fail to incorporate parental feedback (Aouad & Bento, 2020) due to significant requirements in human and financial resources, which can be challenging to mobilize for these purposes in Lebanese institutions (Hassoun, 2022). Likewise, ignoring the input of students' families reduces trust and diminishes perceptions of fairness and transparency (Al Khalili, 2025). Therefore, a theoretical and empirical examination of the voice of the customer (VoC) as an active strategic lever of perceived trust and value, influencing the quality of educational services, is decisive in the Lebanese context.

1. LITERATURE REVIEW AND HYPOTHESES

Today, the development of information and communication technologies (ICT) and the multiplication of digital channels and platforms (social networks and media, live chat on websites, forums, and blogs) allow consumers to express themselves freely, easily, and instantly. These forms of customer interaction, such as chatbots and sentiment analysis, serve as sources for collecting customers' real-time feedback and representing their voice.

The Voice of the Customer (VOC) is a strategic approach focused on listening to customers. It involves gathering customer feedback on the company's products or services, that is, their needs, ex-

pectations, and feelings, and prioritizing actions to deliver offerings that best align with consumer desires (Thomson & Antony, 2020). The process of listening to the Voice of the Customer in marketing is divided into four steps. First, data collection relies on multiple feedback sources to gather information on customer sentiments, journeys, and multiple touchpoints (Shen et al., 2022). Feedback sources include the website, social media activities, employees, and satisfaction surveys. The second step is feedback analysis, used to generate reports (Barravecchia et al., 2022). In the third step, feedback data are categorized to highlight key insights and prioritize strategic decisions, refining actions accordingly. The fourth step involves monitoring, which assesses the return on investment of implemented actions and the relevance of strategic

choices. Monitoring tracks changes in customer satisfaction related to service attributes that have been adjusted based on the Voice of the Customer. Lastly, the analysis of new feedback confirms the effectiveness of these strategic decisions (Abdo & Yusof, 2023). Customer voice influences the organization's bottom line, and its implementation benefits both customers and the organization (Debnath et al., 2008). Three primary benefits are highlighted.

First, it emphasizes service improvements by gathering new ideas for creative solutions to increase value. Perceived value influences the psychological price, which is the amount a customer considers acceptable for a service. This value is subjective because it is not attributed to the organization but to consumers from an external perspective (Sun et al., 2021). Perceived value includes self-realization and personal fulfillment (Abdolvand & Norouzi, 2012). Defined as the overall judgment of a service's usefulness, perceived value is closely connected to the customer's voice. Using customer feedback to tailor services and enhance customers' experiences and their perception of value (Yin et al., 2016). Perceived value acts as a mediator that amplifies the customer's voice, allowing them to express their opinions more effectively. When customers perceive higher value in services tailored to their needs, they report greater satisfaction and view overall quality more favorably (Yuliansyah & Khadafi, 2023).

Second, customer voice is a persuasive tool for sustaining consumer trust. It provides social proof to reassure prospects and stimulate their purchasing intention. Elistia et al. (2023) mentioned that customer reviews establish and strengthen trust. Replying to reviews creates an open dialogue with customers, strengthening relationships and trust. Consumers trust a corporation with positive reviews, which increases conversion rates (Kee et al., 2021). Organizations demonstrate their commitment to building trust and delivering high-quality service by actively managing reviews and implementing feedback (Chen & Li, 2021). The relationship between consumer voice and service quality is significantly mediated by perceived trust (Latif et al., 2021). Building trust through the ethical and open use of consumer feedback results in improved quality of their services (Antoniadis et al., 2022).

Third, customer voice is crucial since it offers insightful information that leverages Customer Relationship Management tactics. It identifies customers' needs, wants, and expectations to improve (Barravecchia et al., 2023). Voice, mail, and face-to-face are major channels for customer relations. Customer relationship tactics collect information directly shared by consumers in the form of feedback. The goal is to convert analyzed data into concrete actions to meet customer expectations (Massoud et al., 2025). Consequently, it identifies the actions to attract and retain its target (Magatef et al., 2023). CRM facilitates the process by guaranteeing that consumer voice data are examined and applied to enhance services. Managing customer relationships involves implementing strategies to foster and maintain a positive, long-lasting relationship with stakeholders (Yuliansyah & Khadafi, 2023). Proactive and individualized communication is encouraged by an efficient CRM, backed by technology solutions such as online platforms for gathering and analyzing feedback. These benefits are valuable and represent considerable potential to strengthen brand equity, build quality circles, and establish a market position (Singh et al., 2021).

The voice of the customer is a powerful tool for implementing quality initiatives. Six Sigma is recommended, as it has proven to drive positive changes. The Six Sigma project is implemented based on customer feedback, enabling organizations to increase their market share and remain competitive (Mulay & Khanna, 2017). "The customer voice provides a continuous feedback loop." Furthermore, Six Sigma is initiated with customer requirements and monitored regularly to identify future gaps in service quality (Lestari & Dachyar, 2020).

Service quality is grounded in perceived value and trust. Service quality is perceived as a reflection of an organization's commitment and integrity toward its stakeholders (Antoniadis et al., 2022). Service quality encompasses five key dimensions: reliability, responsiveness, empathy, assurance, and tangibility (Jorge et al., 2018). First, reliability is measured by accurately delivering the promised service. Second, responsiveness refers to the promptness with which a company responds to customer requests. Third, empathy is the ability to generate a strong emotional connection. Fourth, assurance refers to the competence and

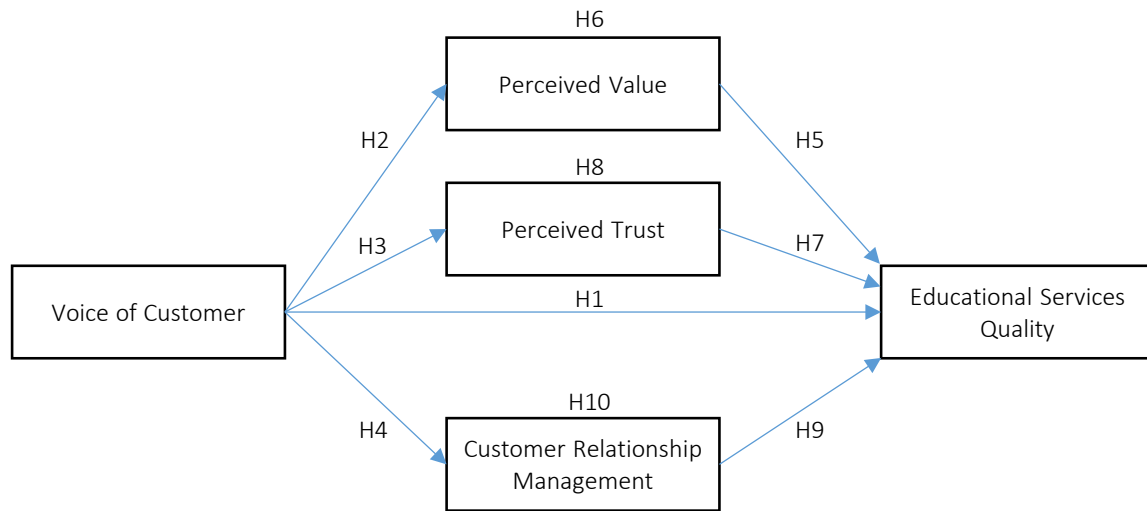


Figure 1. Conceptual framework

courtesy of staff. Fifth, tangibility is characterized by well-mannered offices, well-groomed staff, up-to-date equipment, and effective communication. Service quality is a complex concept that relies on how these dimensions intertwine to create an enhanced customer experience.

In the context of educational services, parents who receive more value from services tailored to meet their needs report higher levels of satisfaction and a more favorable opinion of the overall quality (Seo & Um, 2023; Halimatussakdiah et al., 2018). Parents who can voice their opinions about the caliber of the courses, facilities, or administrative services at educational institutions are more likely to have faith in the establishment (Singh & Jasial, 2021). Academic institutions that respond to parents' and students' input demonstrate flexibility and responsiveness, thereby strengthening trust and service quality (Kee et al., 2021). Robust relationship management systems influence the service quality of educational institutions (Shah et al., 2024). Educational institutions modify their offerings to meet the expectations of parents and students (Atapour et al., 2023). They perceive improvements in performance metrics, such as parents' satisfaction and the student retention rate. This enhances parents' experience and improves service quality (Mulay & Khanna, 2017; Khan, 2019). Consequently, the conceptual framework illustrates the relationship between these variables.

This article aims to evaluate the influence of customers' voices on educational service quality, examining the mediating effects of perceived trust, perceived value, and customer relationship management (CRM). Ten hypotheses were formulated from the literature review.

- H1: Customer voice has a direct influence on the quality of educational services.
- H2: Customer has a statistical effect on the Perceived Value of Educational Services.
- H3: Customer has a direct statistical influence on parents' perceived trust.
- H4: Customer voice influences Customer Relationship Management positively.
- H5: Perceived value has a direct impact on the quality of educational services.
- H6: Perceived value mediates the relationship between customer voice and educational service quality.
- H7: PT has a direct influence on the service quality of Lebanese Educational Institutions.
- H8: The relationship between customers' voices and educational service quality is mediated by perceived trust.

H9: *Customer relationship management has a direct influence on the quality of educational services.*

H10: *Customer relationship management mediates the relationship between customer voice and educational service quality.*

2. METHODS

The article employs a quantitative method grounded in positivist philosophy. Data collection was completed using a questionnaire. The survey items were formulated based on the existing literature. As a result, the survey consists of 30 closed-ended statements. This survey consists of six parts. The first part examines the application of the voice of the customer using six items from Bhandari and Rodgers (2019) and Thomson and Antony (2020). Perceived Value is assessed using six items from Seo and Um (2023) and Halimatussakdiah et al. (2018). Perceived Trust was evaluated using six items from Singh and Jasial (2021) and Latif et al. (2021). Customer Relationship Management was measured using six items from Thomson & Antony (2020) and Mulay and Khanna (2017). Educational Services Quality was assessed using six items. In this questionnaire, the standardized Likert scale was chosen, which ranges from 1 to 5 (strongly disagree “1” and strongly agree “5”).

University and academic experts validated the survey. This pre-test assesses the nature of the questions, their coherence, and the time needed to answer. Several revisions were made to this survey (Younis et al., 2023). This step changed some questions and revised others. The survey was distributed through direct contact with parents of students enrolled in 40 out of 103 private educational institutions identified in Akkar, North Lebanon. A convenience sampling method was used. Targeted schools, accounting for approximately 39% of the total, were intentionally selected to ensure diversity and variation in school types. The selection of schools was based on their accessibility, management cooperation, accreditation programs, and the availability of parents. Before launching the survey, approval was obtained from the school administrators and the parents’ committee. However, they requested that their names not be disclosed

to protect their institutional identities. Still, they facilitated data collection by allowing researchers to contact parents directly.

The simple random sample was applied to the study population (6,000) of parents enrolled in English and French private schools. The questionnaires were administered face-to-face using the paper format. This method encouraged spontaneous participation and included parents from diverse backgrounds. A total of 390 parents participated in the survey, achieving a response rate of 90% (429 collected and 39 eliminated due to missing values). This rate reflects parents’ dedication and interest. Particular care was taken to ensure compliance with ethical research standards.

The sample was calculated using a 95% confidence level and a 5% margin of error. The sample size was deemed sufficient based on Cochran’s formula for finite populations. The formula determining the sample size is

$$n_0 = \frac{z^2 \cdot p \cdot (1-p)}{e^2}, \quad (1)$$

where n_0 represents an initial sample according to school managers and not an infinite size of population; $Z = z$ -score (95%: 1.96); p is equal to 0.5; e represents the margin of error, and N is 6,000 representing the population size. Hence, the targeted sample n_0 is equal to 384.16. The sample size reached 390 parents. The data were collected over three months, from September 1, 2024 to November 30, 2024.

Parents’ choice to participate in assessing the quality of services offered by a private school is justified by their central role in funding, decision-making, representing minor students, and active involvement in the educational process. First, as tuition payers, they are directly interested in evaluating the quality of the educational services. Second, parents’ assessment of the school’s quality influences their decision to keep their child in the school or seek an alternative. Third, Students are minors and lack the legal capacity to participate in a questionnaire. Parents are the legal representatives of their children, representing their interests. Lastly, parents sign contracts with the private school. Their evaluation, therefore, serves as a means to measure whether the school is fulfill-

ing its contractual commitments. As direct beneficiaries and daily observers of their children’s academic progress, parents are well-positioned to assess communication, value, and educational quality. Their perception is a key indicator of an educational institution’s quality.

The data were collected following Jinan University’s ethical standards and were reviewed and approved by Dr. Tadomri (head of the ethical committee). The confidentiality and anonymity of participants’ data were strictly guaranteed to eliminate the social desirability effect. The questionnaire introduction specified that participation was voluntary and that responses would be used for academic purposes and presented in an aggregated form. Hence, no personal identification, such as emails, was stored, and the initial data were kept confidential. Furthermore, parents as participants were assured of the right to withdraw at any time without consequences, thereby ensuring the protection of their rights and making them feel secure and protected.

Table 1. Parents demographics

Variables	Category	Frequency	Percent
Gender	Male	215	55.1
	Female	175	44.9
Parents' educational level	Primary Education	97	24.9
	Secondary Education	66	16.9
	College Education	65	16.7
	Higher Education	162	41.5
Occupation	Private sector employee	117	30.0
	Public sector employee	127	32.6
	Business owner	27	6.9
	Unemployed	50	12.8
	Retired	69	17.7
Number of children enrolled in school	One (only child)	83	21.3
	Two	133	34.1
	Three	102	26.2
	Four	46	11.8
	Five or more	26	6.7
	Total	390	100.0

Table 1 shows that males represent 55.1% of the sample, while females represent 44.9%. This relatively balanced distribution captures both gender perspectives. 16.9% have a Secondary Education, and 16.7% have a College Education, followed by those with primary education (24.9%). This percentage of parents with a good education suggests that parents are receptive to educational develop-

ment initiatives. Most parents are employed in either the public sector (32.6%) or the private sector (30.0%), followed by retirees (17.7%) and those who are unemployed (12.8%). The diversity of occupations reflects the varying socio-economic levels among parents, which can impact their expectations. Families with two children in school are the most numerous (34.1%), followed by those with three children (26.2%) and one child (21.3%). Schools should consider this distribution when tailoring their services to large families that may be more sensitive to costs and the overall quality of educational services.

The reliability and validity of the measuring instrument. Reliability analysis using the Cronbach Alpha coefficient “ α ” varies between 0.00 and 1.00, and its generally acceptable minimum value is 0.70. This means that the data collected is consistent. Convergent validity is assessed using item loading, composite reliability (CR), and Average Variance Extracted (AVE). To accept convergent validity, the values of all these measures should be greater than 0.5.

After collecting the data, questions were coded for analysis using SPSS. Two analysis methods were chosen. The principal component analysis (PCA) method is an exploratory analysis technique used to verify the validity of the factor analysis test, as it provides the correlation between factors and the unique variance of the elements. First, the PCA technique selects the most highly correlated indicators with high explanatory power, with eigenvalues greater than 0.6. In this case, two tests are necessary to predict whether the data can be subjected to factor analysis. For the exploratory factor analysis (EFA) to be performed, the data must first meet the following condition: the sampling adequacy Kaiser-Meyer-Olkin (KMO) measure must be greater than 0.6. The KMO test compares the observed correlations with the partial correlations between the variables. Second, the eigenvalue of each factor must be at least 1. Third, a minimum loading factor of 0.50 for the retention of each item must be achieved, and fourth, the “Varimax” rotation must be achieved (Younis et al., 2024).

The confirmatory factor analysis (CFA) complements exploratory analyses using the Structural Equation Modeling (SEM) approach. It defines

a set of unobserved variables to account for the covariance in a set of observed variables (Singh et al., 2018). The SEM follows statistical distribution assumptions, as observations are assumed to be independent, and exogenous variables are assumed to have a multivariate normal distribution. Subsequently, SEM was implemented to test the main effect hypotheses (Bchennaty et al., 2024).

3. RESULTS

This article is based on 390 valid observations, ensuring the reliability of the results. Table 2 stipulates no missing data, ensuring consistency in calculations and analyses. Service quality (1.267) and Customer Relationship Management (1.194) values indicate a high level of agreement regarding the quality of educational services and customer relationship management. The customer’s voice value (0.601) verifies a slightly more balanced perception of their agreement. Kurtosis values are positive, reflecting overall peaked distributions with a concentration around central values. Service Quality (1.259) and Customer Voice (1.442) exhibit a concentrated distribution, indicating a high level of parental agreement. Customer Relationship Management (0.330) has a flatter distribution, indicating a greater dispersion of perceptions. Positive kurtosis reveals a generally positive and relatively homogeneous awareness of the variables studied.

Service quality reached a standard deviation of 0.65, stipulating low variability, representing consistency in perceptions. The Skewness of -1.267 marked the concentration of responses in high scores. Kurtosis of (1.259) shows a pointed distribution, confirming a high agreement.

Table 3 denotes that the correlations between the variables are significant at the 0.01 level, demonstrating statistically reliable relationships. Customer voice and Perceived Value have a moderate correlation ($r = 0.374$), which implies that listening to customers positively influences their perception of the added value of educational services. Customer voice and Perceived Trust are moderately correlated ($r = 0.403$). This correlation designates that listening to customers is associated with their trust in Lebanese educational institutions. Table 2 stipulates that Service Quality is correlated with customer voice ($r = 0.320^{**}$, moderate correlation), Perceived Value ($r = 0.594^{**}$, strong correlation), Perceived Trust ($r = 0.567^{**}$, strong correlation), and Customer Relationship Management ($r = 0.697^{**}$, strong correlation). Hence, the perceived quality of educational services is correlated with all other dimensions, including perceived value and trust.

Tolerance measures the inverse of the variance explained by other variables. A value close to 0 indicates high collinearity. A VIF (Variance Inflation Factor) value > 5 indicates problematic multicollinearity. All variables have VIFs < 5 , indicating no problematic collinearity. VIFs are slightly higher for Perceived Value (1.916) and Customer Relationship Management (1.486), probably due to their moderate correlations with other variables.

The principal component analysis (PCA) results in Table 4 after the “Varimax” rotation show that the retained measurement items of this variable have communalities greater than 0.5. Indicators such as KMO, Bartlett’s test, and Cronbach’s alpha were used to evaluate the constructs. Results were higher than 0.6 ($p < 0.0001$). This outcome allows us to apply the factor analysis method to this variable.

Table 2. Descriptive statistics

Descriptive indices		VOC Voice of Customer	PV Perceived Value	PT Perceived Trust	CRM Customer Relationship Management	SQ Educational Services Quality
N	Valid	390	390	390	390	390
	Missing	0	0	0	0	0
Mean		3.4868	3.7662	3.6107	3.7915	3.9996
Median		3.5000	3.8333	3.6667	4.0000	4.0000
Std. Deviation		0.677	0.667	0.696	0.616	0.658
Skewness		0.601	-0.932	-0.838	1.194	1.267
Std. Error of Skewness		0.124	0.124	0.124	0.124	0.124
Kurtosis		0.330	1.442	0.932	1.405	1.259
Std. Error of Kurtosis		0.247	0.247	0.247	0.247	0.247

Table 3. Correlations

Variables	VOC	PV	PT	CRM	Collinearity Statistics	
					Tolerance	VIF
VOC Voice of Customer	1	–	–	–	0.976	1.025
PV Perceived Value	0.374**	1	–	–	0.522	1.916
PT Perceived Trust	0.403**	0.775**	1	–	0.391	1.558
CRM Customer Relationship Management	0.345**	0.769**	0.788**	1	0.402	1.486
SQ Educational Services Quality	0.320**	0.594**	0.567**	0.697**	–	–

Note: ** Correlation is significant at the 0.01 level (2-tailed). VIF – Variance Inflation Factor.

Three items were eliminated from the Voice of Customer block, and three items were retained for this variable. All the coefficients are greater than 0.5. The matrix determinant is 0.05, and the KMO value is 0.753, which reflects the good integrity of the items. The same results of the Principal Component Analysis (PCA) show that four items measuring “Educational Services Quality” have good commonality because > 0.5, except for two items, “SQ 5, SQ6,” whose commonality value < the standard of 0.5. These two items were eliminated from the block of items. The table below summarizes all the results of the PCA.

Table 4. Convergent validity (PCA)

Statements (the questionnaire is attached in the appendix)	Factor loadings	E	TVE/KMO	“α”
Voice of Customer VOC				
VOC1.	0.908	0.825	72%/0.753	0.794
VOC2.	0.821	0.675		
VOC3.	0.815	0.664		
Perceived Value PV				
PV4.	0.855	0.731	68.3%/0.790	0.768
PV6.	0.814	0.662		
PV3.	0.811	0.657		
Perceived Trust PT				
PT4.	0.840	0.706	66%/0.883	0.829
PT3.	0.821	0.674		
PT2.	0.804	0.646		
PT6.	0.786	0.618		
Customer Relationship Management CRM				
CRM1.	0.862	0.743	70%/0.800	0.789
CRM2.	0.837	0.701		
CRM3.	0.819	0.670		
Educational Services Quality				
SQ1.	0.884	0.782	75%/0.838	0.890
SQ2.	0.874	0.764		
SQ3.	0.869	0.756		
SQ4.	0.841	0.708		

Note: E = Extraction; TVE = Total Variance Explained; KMO = Kaiser-Meyer-Olkin; “α” = Cronbach Alpha.

Table 4 presents variables with factor loadings exceeding 0.7, demonstrating a strong correlation with their respective dimensions. The results confirm the structure and relevance of the dimensions for measuring the concepts. The items with the highest loadings are VOC1 (0.908), SQ1 (0.884), and SQ2 (0.874), which highlight their key role in perception. Strengthening feedback tools (VOC1) or teaching quality (SQ1) greatly influences parents’ satisfaction.

A TVE (Total Variance Explained) greater than 60% is considered satisfactory. Total variance explained (TVE) values (customer voice: 72%, Perceived Value: 68.3%, Perceived Trust: 66%, Customer Relationship Management: 70%, Service Quality: 75%) denote that the variables explain a substantial percentage of the variance. Results postulate a high consistency and representativeness of the items. The high TVE indicates that the variables used effectively capture parents’ perceptions.

The KMO indices are greater than 0.7 for all dimensions. These values specify an excellent fit of the data for factor analysis (values > 0.70 are acceptable, values > 0.80 are excellent). For instance, Service Quality (0.838) shows the highest KMO, reflecting strong interrelationships between items. Cronbach’s Alpha, “α,” is greater than 0.75. This index confirms the internal consistency between items.

Figure 2 displays the Structural Equation Modeling (SEM) of the second-order latent variables, with a focus on the model fit indicators. The CMIN/DF value of 2.06, which is less than 3, specifies an acceptable fit. Hence, the model is consistent with the collected data. The RMSEA score of 0.043, which is less than 0.05, indicates an excellent fit and a low approximation error. The CFI (comparative fit in-

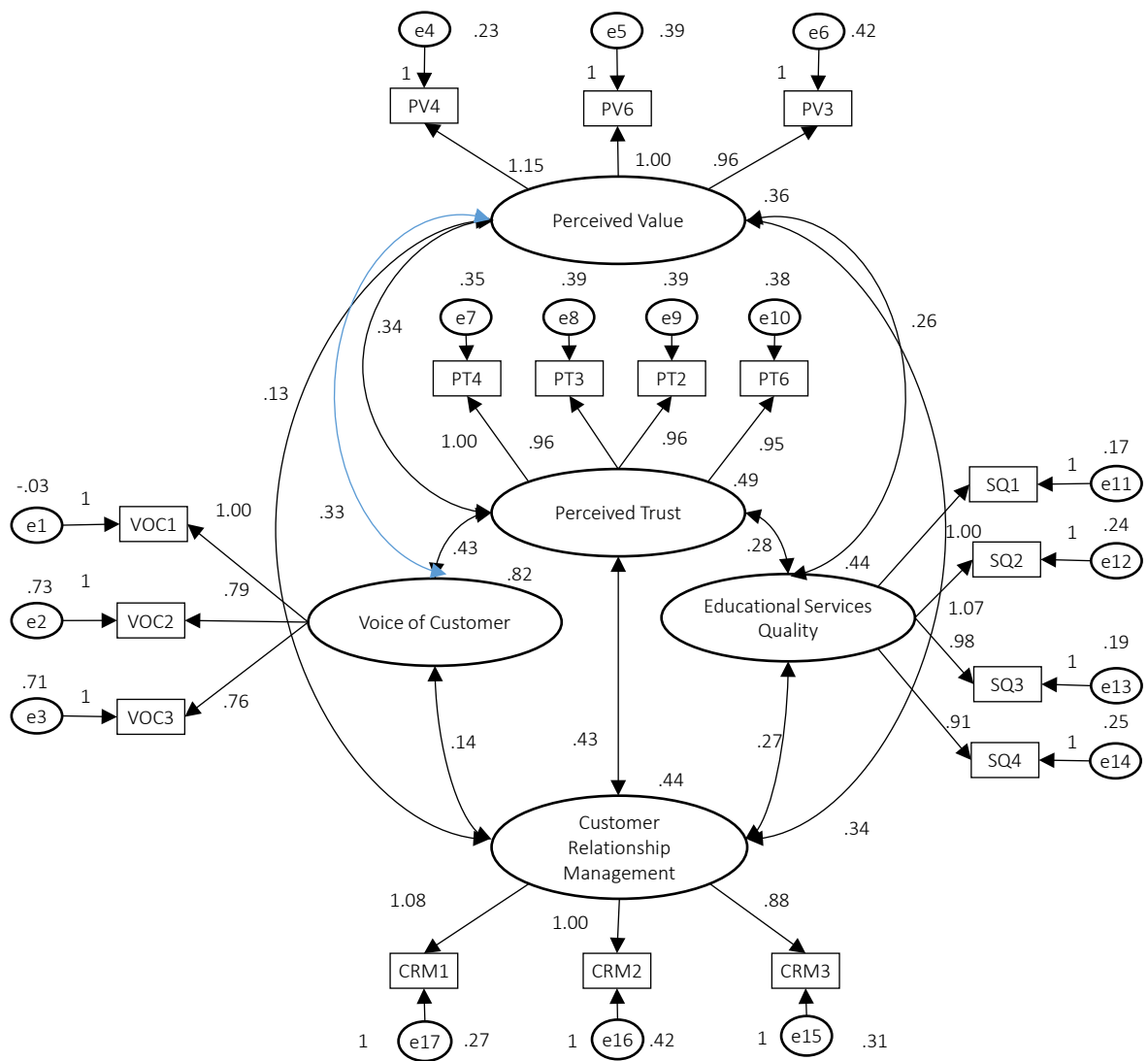


Figure 2. Structural equation modeling of latent variables

dex) (0.966), NFI (Normed Fit Index) (0.936), IFI (incremental fit index) (0.966), and TLI (Tucker-Lewis index) (0.957) indices exceed 0.90, demonstrating a very good model fit. GFI (goodness of fit) (0.935) and AGFI (adjusted goodness) (0.909) scores confirm an adequate fit, particularly considering the degrees of freedom. The model in Figure 2 is valid for explaining the relationships between the dimensions (Voice of the customer, Customer relationship management, Perceived value, Perceived trust, and Quality of educational services).

Table 5 shows that all relationships have C.R. (Critical Ratio) values greater than 1.96 and p-values equal to 0.00, indicating strong statistical significance. Therefore, the items effectively

measure their related latent dimensions. Table 5 highlights the contribution of each item. Among perceived value items, PV4 (1.150) has the highest factor loading, indicating that additional services significantly enhance the perceived value for parents. PV6 (1.000) and PV3 (0.957) also show significant contributions. This implies that the balance between educational quality and cost is vital for maximizing perceived value. For the customer voice, results confirm that parents' opinions influence the school's decisions and initiatives, increasing their involvement and satisfaction. In terms of the quality of educational services, SQ2 (1.073) and SQ3 (0.976) are prominent, indicating that the appropriateness of services to individual needs and consistency in quality are viewed as es-

Table 5. Regression weights

Items		Constructs	Estimate	S.E.	C.R.	P
PV4	←	Perceived Value	1.150	0.085	13.530	0.00
PV6	←	Perceived Value	1.000	–	–	–
PV3	←	Perceived Value	0.957	0.083	11.495	0.00
VOC1	←	Voice of the Customer	1.000	–	–	–
VOC2	←	Voice of the Customer	0.785	0.070	11.230	0.00
VOC3	←	Voice of the Customer	0.755	0.068	11.080	0.00
SQ1	←	Educational Services Quality	1.000	–	–	–
SQ2	←	Educational Services Quality	1.073	0.056	19.193	0.00
SQ3	←	Educational Services Quality	0.976	0.050	19.381	0.00
SQ4	←	Educational Services Quality	0.906	0.052	17.414	0.00
CRM3	←	Customer Relationship Management	0.880	0.067	13.131	0.00
CRM2	←	Customer Relationship Management	1.000	–	–	–
CRM1	←	Customer Relationship Management	1.075	0.074	14.561	0.00
PT4	←	Perceived Trust	1.000	–	–	–
PT3	←	Perceived Trust	0.956	0.067	14.373	0.00
PT2	←	Perceived Trust	0.962	0.067	14.434	0.00
PT6	←	Perceived Trust	0.945	0.066	14.413	0.00

Note: C.R. – Critical Ratio, S.E. – Standard Error.

sential. For example, SQ1 (1.000) and SQ4 (0.906) affirm the school’s reputation as a model of education and the competence of its staff. Lebanese educational institutions focus on tailoring services to individual needs, maintaining consistent delivery, and enhancing perceptions of staff quality.

Hypotheses H1 to H4, H5, H7, and H9 are all supported by positive and significant regression coefficients ($p < 0.05$). Customer voice has a direct influence on the quality of educational services ($\beta = 0.083, p = 0.013$). H1 is supported. Customer voice has a positive effect on Perceived Value ($\beta = 0.106, p = 0.010$). The results confirm that feedback has a significant influence on the perception of educational paybacks. H2 is supported. The cus-

tomers’ voice has a positive influence on perceived trust ($\beta = 0.127, p = 0.003$). Listening to customers’ voices strengthens parents’ perceptions of trust in Lebanese schools. H3 is supported. This variable has a positive impact on customer relationship management ($\beta = 0.105, p = 0.013$). Managers focus on collaborative initiatives to involve parents in school activities. H4 is supported.

Perceived value directly influences educational service quality ($\beta = 0.285, p < 0.001$). Consequently, the perception of benefits is crucial in elevating perceived quality. H5 is supported. Perceived trust has a direct, positive influence on Service Quality ($\beta = 0.196, p < 0.001$). Perceived trust contributes significantly to a positive perception of the quality

Table 6. Hypotheses testing

Variables	→	Variables	E	S.E.	C.R.	P	Result
Voice of the Customer	→	Services Quality	0.083	.033	2.488	0.013	H1 supported
Voice of the Customer	→	Perceived Value	0.106	0.041	2.588	0.010	H2 supported
Voice of the Customer	→	Perceived Trust	0.127	0.043	2.954	0.003	H3 supported
Voice of the Customer	→	Customer Relationship Management	0.105	0.042	2.481	0.013	H4 supported
Perceived Value	→	Service Quality	0.285	0.040	7.142	0.00	H5 supported
Perceived Trust	→	Service Quality	0.196	0.038	5.153	0.00	H7 supported
Customer Relationship Management	→	Service Quality	0.155	0.039	4.013	0.00	H9 supported
Voice of the Customer X Perceived Value	→	Service Quality	0.021	0.007	2.948	0.003	H6 supported
Voice of the Customer X Perceived Trust	→	Service Quality	-0.001	0.007	-0.075	0.940	H8 rejected
Voice of the Customer X Customer Relationship Management	→	Service Quality	0.097	0.008	12.694	0.00	H10 supported

of education. *H7* is supported. Customer relationship management has a significant but relatively weaker direct impact ($\beta = 0.155, p < 0.001$). *H9* is supported. Lebanese schools prioritize actions that increase perceived value and trust, while utilizing Relationship Management to enhance engagement and satisfaction.

Perceived Value mediates the relationship between customer voice and Service Quality ($\beta = 0.021, p = 0.003$). *H6* is supported. The interaction between customer voice and perceived value improves the perceived quality of educational services. Customer relationship management (CRM) mediates the relationship between customer voice and Service Quality ($\beta = 0.097, p < 0.001$). Results validate that strong relationships strengthen the effect of parental listening on service quality. *H10* is supported. Perceived trust does not mediate the relationship between customer voice and Service Quality ($\beta = -0.001, p = 0.940$). *H8* is rejected. The interaction between customer voice and Perceived Trust is not significant. Perceived trust does not directly amplify the customer's voice effect on the quality of educational services.

4. DISCUSSION

Customer voice, effective customer relationship management, perceived value, and perceived trust are strategic components in improving educational service quality. A notable finding was the significant influence of customer voice on customer relationship management, as well as the role CRM plays in enhancing service quality. Results highlight the strategic importance of linking listening mechanisms to actionable, relationship-building initiatives, such as involving parents more directly in school activities or decision-making processes. Perceived value acted as an important mediator, strengthening the connection between customer voice and service quality. Schools that effectively convert parental feedback into clear, high-value outcomes are likely to reap the greatest benefits from how their services are perceived.

Findings emphasize that customer-focused innovation and personalization are essential to maintaining educational quality. Trust, while vital, functions independently and requires tailored

strategies to build credibility and transparency. Trust is built through multiple interactions, observable results, and long-term institutional consistency. Building trust requires investments in transparent practices and institutional commitment to educational excellence. Results align with the study by Xavier et al. (2025), which confirms that trust is a key dimension in the perception of service quality in education. Schools should gather periodic insights and incorporate them into their proactive strategies to enhance perceptions of trust and the quality of educational services. Managers should share parents' feedback transparently and ethically to build trust, which in turn improves perceptions of service quality. Research by Antoniadis et al. (2022) similarly emphasized that actively listening to students' families builds trust and improves perceptions of transparency in educational governance.

This article contributes to the literature on educational service quality by introducing an integrated approach that examines the voice of the customer (VoC) as an active strategic lever influencing the perceived quality of educational services. The results contradict the empirical evidence from Chen and Li (2021) and Shen et al. (2022), which have verified that customers' voice has the strongest impact, indirectly through the mediating roles of perceived trust. However, these results partially support that customer relationship management and perceived value mediate this relationship. This integrated model enriches existing service quality research by situating the customer's perspective as a core driver of value creation in educational institutions.

Theoretically, this research enhances the conceptual foundations of quality management in educational services by proposing an integrated model that connects the voice of the customer to perceived service quality through relational mediators. This model transcends traditional marketing frameworks by demonstrating that, in education, value and relationships are not transactional but socially embedded, necessitating ongoing collaboration between schools and families. Therefore, the outcome of this article contributes to filling a theoretical gap by positioning parents' voices as evaluators and active participants in the value creation process.

This article has practical relevance for educational institution leaders, public decision-makers, and practitioners in the education sector. Managers should develop strategies based on active listening, value creation, and fostering trust with end-users. Educational institutions can integrate customer-centric management practices while adapting relationship marketing concepts to the reality of education services. It thus paves the way for future research to test this model in other geographical or cultural contexts, thus strengthening the generalizability and robustness of the findings.

The outcome of this article aligns with the study conducted by Mulay and Khanna (2017), which highlights the crucial role that Customer Relationship Management, perceived value, and trust play in service quality. These results match the conclusions of Atapour et al. (2023), who established CRM's mediating role between customers' voice and service quality. Results align with those of Bhandari and Rodgers (2019) and Thomson and Antony (2020). These studies corroborated that customer voice is an imperative an-

tecedent of service quality. Policymakers can rely on these findings to develop integrated strategies that strengthen trust and customer relationships, while maintaining high standards of educational quality.

The limitations of this study mainly lie in its methodology, data collection, and the time factor. The time required to collect additional data and analyze significant trends represented a major limitation, making it challenging to observe lasting impacts. These limitations underscore the need for future studies to develop robust approaches that integrate diverse samples, advanced analytical tools, and longitudinal studies to understand these complex dynamics better. Further investigation is also required to understand why trust, although influential independently, does not mediate the relationship between voice and quality. Future research endeavors should expand their scope beyond private educational institutions to include a diverse range of settings. Exploring perceived risk as a mediating factor may aid in the development of targeted educational interventions.

CONCLUSION

This article investigates the influence of the customer's voice on educational service quality, examining the mediating effects of perceived trust, perceived value, and customer relationship management. Results verified that perceived value, trust, and customer relationship management have a positive impact on service quality. Educational institutes should capitalize on CRM by connecting parental feedback to relational actions to strengthen the perceived impact on quality. Personalization and consistency are priorities for the quality of educational services. Educational institutes consolidate the perception of added value (Perceived Value) through campaigns focused on customer benefits. The analysis demonstrated that although the customer's voice has a direct impact on service quality, its most substantial indirect influence is mediated through perceived value and customer relationship management. Although perceived trust did not achieve statistical significance as a mediating factor, it remains a conceptually vital element that influences the overall perception of the service. Building and maintaining trust requires dedicated efforts, which are essential for a positive perception of quality and warrant a distinct approach. Transparency and reliability are fundamental. Educational institutions should cultivate parental trust through transparent procedures, dependable commitments, and consistent adherence to high-quality standards. The adoption of these principles facilitates the development of trust and promotes long-term success.

Findings corroborated that parents' voices are powerful drivers of change in educational service quality. Organizations can close the gap between expectations and experiences by formalizing feedback, encouraging value creation, and incorporating CRM into their strategies, thereby ensuring long-term trust. They can create a customer-centric culture that meets customers' expectations and fosters a culture receptive to customer-driven change.

AUTHOR CONTRIBUTIONS

Conceptualization: Khaled Moussa, Mazen Massoud.
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 Formal analysis: Khaled Moussa, Mazen Massoud.
 Investigation: Khaled Moussa.
 Methodology: Khaled Moussa.
 Software: Mazen Massoud.
 Supervision: Khaled Moussa.
 Validation: Khaled Moussa, Mazen Massoud.
 Visualization: Mazen Massoud.
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APPENDIX A. Questionnaire

Dear Parents,

We sincerely thank you for taking the time to complete this questionnaire. Your contribution is valuable and will help us gain a better understanding of your perceptions and experiences. The information collected is intended solely for academic research purposes and will be processed with scientific rigor. We would like to emphasize that your responses will remain strictly confidential: no personal data will be disclosed, and your comments will only be used anonymously. This means that no parent will be individually identified. The estimated time required to complete this questionnaire is 15 to 20 minutes. We encourage you to respond honestly and spontaneously, as there is no “right” or “wrong” answer. What matters to us is your experience and your opinion. We sincerely thank you for your trust and collaboration.

Table A1. Demographics

Characteristics	Category	Choice
Gender	Male	
	Female	
Parents Educational Level	Primary Education	
	Secondary Education	
	College Education	
	Higher Education	
Occupation	Private sector employee	
	Public sector employee	
	Business owner	
	Unemployed	
	Retired	
Number of Children Enrolled in the School	One (only child)	
	Two	
	Three	
	Four	
	Five or more	

For each of the following statements, please indicate the extent to which you agree by selecting one of the responses below:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Table A2. Questionnaire statements

Items	Voice of the Customer VOC	1	2	3	4	5
VOC1	The school uses tools such as surveys to collect our feedback as parents	1	2	3	4	5
VOC2	Parents’ opinions are considered when making decisions or improvements to the school	1	2	3	4	5
VOC3	Parents’ feedback influences initiatives and changes within the school	1	2	3	4	5
VOC4	Parents’ needs and expectations are listened to and taken into consideration in the school’s projects	1	2	3	4	5
VOC5	The school encourages me to express my concerns or suggestions regarding educational services	1	2	3	4	5
VOC6	The school regularly solicits parents’ opinions on the educational services it offers	1	2	3	4	5

Table A2 (cont.). Questionnaire statements

Items	Perceived Value PV					
PV1	Parents are generally satisfied with the educational value my child receives from the school	1	2	3	4	5
PV2	As parents, we believe that the school offers a better quality of service than other educational institutions	1	2	3	4	5
PV3	The school offers a good balance between the quality and cost of educational services	1	2	3	4	5
PV4	The additional services provided by the school increase its value to me	1	2	3	4	5
PV5	The educational services offered by the school justify the school fees	1	2	3	4	5
PV6	The school's unique advantages meet my child's educational needs	1	2	3	4	5
Items	Perceived Trust PT					
PT1	The school manager ensures a relationship of trust between parents and the school	1	2	3	4	5
PT2	Parents feel safe entrusting their child's education to this school	1	2	3	4	5
PT3	Parents trust the school to meet its educational commitments to their child	1	2	3	4	5
PT4	Parents trust the school to provide quality educational services	1	2	3	4	5
PT5	The school acts responsibly and ethically in its interactions with parents and students	1	2	3	4	5
PT6	The school is transparent in its practices and communications with parents	1	2	3	4	5
Items	Customer Relationship Management CRM					
CRM1	Parents are regularly invited to participate in activities or events organized by the school	1	2	3	4	5
CRM2	The school is actively working to develop a lasting relationship with parents	1	2	3	4	5
CRM3	The school addresses parents' concerns or problems promptly and efficiently	1	2	3	4	5
CRM4	The school tracks parents' comments and suggestions.	1	2	3	4	5
CRM5	The school sympathizes with parents when academic problems occur	1	2	3	4	5
CRM6	The school maintains proactive communication with parents	1	2	3	4	5
Items	Service Quality SQ					
SQ1	Parents consider this school an example of the quality of private education	1	2	3	4	5
SQ2	The educational services offered are tailored to my child's individual needs	1	2	3	4	5
SQ3	The school provides a consistent, high-quality education for my child	1	2	3	4	5
SQ4	The school staff are competent and professional in interacting with parents and students	1	2	3	4	5
SQ5	The school's facilities meet parents' expectations in terms of quality and safety	1	2	3	4	5
SQ6	The school's responses to parents' concerns or requests are prompt and satisfactory	1	2	3	4	5