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RESEARCH ARTICLE

Determinants of Service Quality and Price on Student Satisfaction with College Foodservice

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Abstract

This study aimed to examine the influence of service quality and price perception on customer satisfaction at the Universitas Brawijaya (UB) Canteen, Indonesia, by analyzing the effects of tangibles, reliability, and empathy as SERVQUAL dimensions, as well as price suitability in terms of quality, perceived benefits, and affordability. Using a quantitative explanatory approach, data were collected from 133 respondents across two UB canteen locations through a structured questionnaire and analyzed using multiple linear regression. The results showed that empathy, price-to-benefit, and price-to-affordability had significant positive effects on customer satisfaction, while tangibles, reliability, and price-to-quality did not have significant partial effects; however, all variables simultaneously influenced satisfaction, with an Adjusted R^2 of 0.486. These findings indicate that emotional interaction and value-based price perceptions are more critical determinants of satisfaction in campus foodservice settings than physical facilities or technical service consistency. This study highlighted the limited empirical research on campus foodservice satisfaction in Indonesian universities using a focused SERVQUAL and price perception framework. The study contributes theoretically by refining SERVQUAL application in higher education foodservice and practically by providing evidence-based insights to support service improvement and pricing strategies for sustainable campus canteen management.

Keywords: campus canteen, food service, price perception, SERVQUAL, student satisfaction.

INTRODUCTION

Public services in higher education have become increasingly complex due to rising demands for service quality from students, educators, and the wider academic community. Universities were no longer positioned solely as academic institutions but also as providers of support services that influenced students' learning experiences, including campus cafeterias that played a strategic role in creating a healthy, comfortable, and productive learning environ-ment. In this context, the Universitas Brawijaya Canteen functioned as a strategic business unit under PT. Brawijaya Multi Usaha (PT. BMU), and in accordance with Rector's Regulation No. 40 of 2016, was mandated to provide hygienic, halal, safe, and affordable food and beverage services based on the halalan thayyiban principle, which emphasized lawful, clean, and quality food provision.

However, the 2021 Customer Satisfaction Index showed a score of 75.24 (Category C—poor), indicating that service performance had not fully met customer expectations, particularly about service speed, presentation accuracy, perceived price fairness, and the adequacy of physical facilities, thereby highlighting the need for a systematic evaluation of service quality and pricing strategy. Furthermore, according to recent literature, Generation Z, who dominate the campus population, have higher expectations for fast service, comfortable spaces, good personal interactions, value for money, and improved food quality [1,2].

Service quality in this study was conceptual-ized using the SERVQUAL framework [3]. It was supported by developments in digital service

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theory after 2020, with empirical evidence indicating that the dimensions of tangibles, reliability, and empathy remained relevant for face-to-face services in the foodservice sector, including campus cafeterias [4,5]. However, studies conducted at several universities showed that not all SERVQUAL dimensions exerted a significant partial effect on customer satisfaction, as tangibles were increasingly perceived as basic expectations rather than key determinants of satisfaction [6–8].

Beyond service quality, customer price perception was identified as a critical factor influencing satisfaction, particularly among highly sensitive students, who are not only sensitive to nominal prices but also to perceived benefits and affordability [4,7,8]. In the campus canteen context, where students constituted the primary customer group with relatively limited purchasing power, recent research consistently demonstrated that price–benefit and price–affordability variables had a more substantial influence on satisfaction than overall price–quality fit [4,7–10], highlighting the importance of value-oriented pricing strategies.

Previous studies on service quality and pricing in the foodservice sector have primarily focused on public restaurants, hotels, and delivery services, leaving campus canteens in Indonesian state universities relatively underexplored. In addition, most research applied the complete SERVQUAL framework, despite indications that only specific dimensions were most relevant in face-to-face campus foodservice contexts [3]. This study addressed this gap by empirically examining selected service quality dimensions and pricing strategies in the UB Canteen. The low Customer Satisfaction Index score further underscored the need for evidence-based evaluation to identify the key determinants of customer satisfaction in an academic service environment.

Based on this background, this study aims to: 1) analyze the influence of tangibles on customer satisfaction; 2) analyze the influence of reliability on customer satisfaction; 3) analyze the influence of empathy on customer satisfaction; 4) test the influence of price suitability with quality, benefits, and ability to pay on customer satisfaction; and 5) analyze the simultaneous influence of service quality and price on customer satisfaction. This study contributed academically by reinforcing the application of the SERVQUAL model and price perception theory in the context of higher education foodservice, and, practically, by providing evidence-based insights for UB and PT BMU to improve service quality, pricing strategies, and supporting facilities, thereby supporting more sustainable governance of campus canteen services.

THEORITICAL STUDIES

Service Quality

Service quality is a fundamental concept in the study of public service management and commercial services. First introduced the SERVQUAL model as an evaluative framework that measures the relationship between customer perceptions and expectations [3]. This model has since become the global standard for assessing service quality. With the advancement of the digital era, various studies have renewed the relevance of SERVQUAL, particularly in the food service sector and higher education institutions. Recent studies have shown that although technology is increasingly playing a crucial role in service delivery, face-to-face interactions in food service still rely on physical quality, service consistency, and employee empathy for customers [11,12].

Service quality is measured not only by the food served but also by the completeness of the facilities, the cleanliness of the environment, the speed of service, and the attention employees pay to customer needs. Modern students tend to assess service quality holistically, encompassing emotional, functional, and physical aspects [13,14]. This makes the dimensions of Tangibles, Reliability, and Empathy highly relevant variables for analysis.

Tangibles

Tangibles refer to the physical aspects of a service, such as buildings, equipment, cleanliness, employee appearance, and layout. In the context of foodservice, physical elements are the first thing customers see and often shape their initial perception of service quality. A recent study found that Generation Z prefers modern, clean, and aesthetically pleasing facilities, which can influence their intention to recreate the experience [2].

Research on campus foodservice in various countries shows that tangible factors do not always have a significant effect on satisfaction, especially when service facilities already meet a

minimum standard of comfort. This factor is called the minimum tolerable threshold, which is a condition where customers do not consider facilities to be a key differentiating factor, but will feel disappointed if the minimum standard is not met [2,15–17]. This is relevant to UB, which has adequate facilities but is not yet optimal overall.

Reliability

Reliability refers to a service provider's ability to deliver services consistently, accurately, and on time. International studies have shown that reliability is a crucial dimension in the food and beverage industry, particularly in the fast food and campus foodservice sectors [18,19].

However, recent research suggests that reliability is often considered a "basic factor" assumed to be consistently high. Consequently, while reliability is functionally important, its contribution to customer satisfaction is not always significant [20,21]. This situation may occur at UB Canteen, where reliability is adequate but not strong enough to increase satisfaction when other factors, such as empathy or perceived price, are more important.

Empathy

Empathy measures a person's attention to detail, patience, and ability to understand customer needs. In face-to-face service environments, empathy is a key indicator influencing customer experience. A recent Scopus study showed that empathy is the most dominant dimension influencing customer satisfaction in the foodservice sector, particularly among younger generations who place a high value on the emotional experience of service [22,23].

The warmth of interactions, simple attention, and willingness to help can create substantial emotional value for customers, making empathy often a key differentiating factor in campus services. These results align with this study's findings, which demonstrate that empathy significantly influences customer satisfaction at the UB Canteen.

Price Perception and Customer Value

Price plays a crucial role in shaping customer satisfaction because it reflects the economic value required to obtain a particular benefit. Customer value is determined by comparing the benefits received with the sacrifices made [24,25]. In the context of students with financial constraints, price perception becomes particularly sensitive. Research since 2020 confirms that price perception is not solely measured by nominal value but encompasses three main aspects: 1) price-quality fit, 2) price-benefit fit, and 3) price-ability fit [26,27].

Price-Quality Appropriateness

Customers tend to assess whether the price they pay is commensurate with the quality of food, service, or convenience they receive. However, recent research shows that this factor is not always significant in the context of canteen services, especially when customers prioritize immediate benefits over overall perceptions of quality [27]. The findings of this study also indicate that this indicator does not significantly influence satisfaction.

Price-Benefit Congruence

This dimension measures the extent to which customers perceive that the price they pay provides benefits that match or exceed their expectations. International research shows that perceived benefits are the strongest price indicator influencing customer satisfaction in the foodservice sector [4].

In the context of UB, the benefits in question include food quality, service speed, convenience, and the overall dining experience. This aligns with the finding that price has a significant impact on satisfaction.

Price Appropriateness to Ability to Pay

Affordability is a key determinant of customer satisfaction on campus. Students generally have limited purchasing power, so excessively high prices can directly reduce satisfaction. A study of universities in Southeast Asia showed that affordability was the most important factor in students' assessment of campus foodservice [2,17]. The findings of this study also indicate that this indicator has the most significant influence among the price dimensions.

Customer Satisfaction

Customer satisfaction results from a comprehensive evaluation of the service experience. Satisfaction arises from a comparison between expectations and perceived outcomes [17,27,28]. In the context of campus foodservice, satisfaction encompasses convenience, food quality, employee interaction, atmosphere, and perceived economic value.

Recent research confirms that customer satisfaction impacts loyalty, word of mouth, and intention to revisit a service. In the educational services sector, customer satisfaction also reflects institutional quality and is part of a university's reputation [7, 29].

MATERIAL AND METHOD

This study uses a quantitative, explanatory research design. This approach was chosen because the research objective is to explain the causal relationship between service quality, price-perception variables, and customer satisfaction at UB. Quantitative methods enable the objective measurement of variables and the testing of hypotheses based on standardized numerical data. Furthermore, explanatory research is relevant for analyzing both direct and simultaneous influences among variables, in accordance with the characteristics of public service and foodservice research, which require statistically based empirical testing.

Location, Population, and Research Sample

The research was conducted at the Universitas Brawijaya Canteen, which operates under the business unit of PT. BMU, from 1 to 30 May 2025. This location was purposefully selected because the UB Canteen is one of the primary service facilities used by students, lecturers, and educational staff. A Customer Satisfaction Index survey had been conducted, indicating the need for a service evaluation.

The sample size was determined using the linear time function method [30]. Sampling based on the linear-time function can be applied when the population size cannot be precisely determined. This method estimates the number of samples based on the available time for data collection rather than a known population size. The linear time function formula is expressed as:

$$n = [T - t_0] / t_1$$

Description:

T = the total time available for the research (7 days × 5 hours = 35 hours)

t_o = the fixed time that does not depend on the number of samples, namely the daily data collection time (5 hours per day)

t_1 = the time required for each sampling unit, defined as the time needed by a respondent to complete the questionnaire (15 minutes or 0.25 hours per questionnaire)

Based on this calculation, a total of 120 respondents were obtained, which were distributed across two research locations. The sampling technique used was non-probability sampling with an accidental sampling approach, which involved all customers at the UB at the time of the study who were willing to complete a questionnaire. This technique is commonly used in consumer behavior research at public service locations or restaurants because it provides quick access to relevant respondents.

Data Types dan Data Sources

The data used in this study is primary data, obtained directly from respondents through a questionnaire. The questionnaire instrument was compiled based on modified SERVQUAL indicators (tangibles, reliability, empathy) and price perception indicators (price-quality ratio, benefits, and affordability). Additionally, secondary data were used as supporting evidence, including UB's IKM documents, PT BMU's profile, and relevant academic literature and previous research findings.

Data Collection and Operational Variabel Definition

Data were collected using an offline questionnaire distributed to UB customers. The questionnaire used a 1–5 Likert scale to measure respondents' level of agreement with each statement. Before distribution, the instrument was pre-tested to ensure that respondents understood each statement item. Furthermore, validity and reliability tests were conducted on the primary research data to provide the instrument's quality. The following is the operational variabel used in this study.

Service Quality (X_1–X_3) is divided into three dimensions: tangible, reliability, and empathy.

- Tangibles (X_1): indicators include physical facilities, Cleanliness and condition of equipment, and employee appearance.
- Reliability (X_2): the ability to provide timely, accurate, and reliable service.
- Empathy (X_3): employee attention, friendliness, and understanding of customer needs.

Price Perception (X_4–X_6) divides into three aspects: Price according to quality, Price according to benefits, Price according to ability to pay.

- Price according to quality (X_4): Price suitability in relation to quality and Price suitability about the expected outcomes.
- Price according to benefits (X_5): Price is suitable with regard to perceived benefits, and Price offers better benefits compared to other product.

- Price according to ability to pay (X_6): Price is competitive with other products, and Price is more economical.

Customer Satisfaction (Y) is measured from customer perceptions of their overall experience when using UB centeen services and defined as Customer loyalty, Willingness to recommend, Service performance in line with expectations, Satisfaction with the service provided, and Positive service experience.

To test the effect of independent variables on the dependent variable, multiple linear regression analysis was used. The regression model used in this study is written as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \varepsilon$$

Description:

Y	= Customer satisfaction
X_1	= Tangibles
X_2	= Reliability
X_3	= Empathy
X_4	= Price according to quality
X_5	= Price according to benefits
X_6	= Price according to ability to pay
β_0	= Constant
$\beta_1...\beta_6$	= Regression coefficients
ε	= Error term

RESULT AND DISCUSSION

This study aims to analyze the influence of service quality (tangibles, reliability, empathy) and price perception (price-to-quality, benefits, affordability) on customer satisfaction at UB canteen. This study involved 133 respondents distributed across two canteen locations, namely the *Halalan Thoyyiban* Academic Canteen (26.32%) and the Creative Land Canteen (73.68%). The majority of respondents were aged 21–25 years (59.40%) and consisted of 96 students (72.18%), 33 staff members (24.81%), and four alumni (3.01%). Regarding gender, 61.65% of respondents were female, while 38.35% were male.

This study differed from previous research by showing that customer satisfaction in campus canteens was driven more by affective service elements and value-based price perceptions than by physical facilities alone. Its main advantage lies in the focused selection of service quality dimensions and detailed price indicators tailored to face-to-face campus foodservice, providing more precise and practical insights for service improvement in higher education settings.

Data were analyzed using multiple linear regression to examine the partial and simultaneous effects of all independent variables. Validity test results showed that all statement items had a corrected item-total correlation value above 0.30, indicating that each instrument indicator was valid for use. Reliability tests showed Cronbach's Alpha values above 0.70 for all variables, indicating the instrument's reliability. Furthermore, classical assumption tests indicated that the data were normally distributed, that multicollinearity (VIF < 10) was absent, and that heteroscedasticity was absent based on the Glejser test. Therefore, the data met the requirements for multiple linear regression. The results of the hypothesis test are explained in Table 1.

From the Table 1, it can be concluded that the variables empathy (X_3), price according to benefits (X_5), and price according to ability to pay (X_6) have a statistically significant effect on customer satisfaction ($p < 0.05$). The other variables, namely tangibles (X_1), reliability (X_2), and price according to quality (X_4), partially have a significant effect. However, all variables collectively have a significant impact on customer satisfaction, as indicated by an F-value of 18.620 and a p-value of 0.000.

The Adjusted R^2 value of 0.486 indicates that this research model can explain 48.6% of the variation in customer satisfaction at UB. In comparison, the remaining 51.4% is influenced by other factors such as food taste, menu variety, kitchen cleanliness, dining room atmosphere, and digital service quality (e.g., payment systems).

Table 1. Hypothesis Test Results

Independent Variable	Coefficient (β)	Sig.	Description
Tangibles (X_1)	0.076	0.323	No significant effect
Reliability (X_2)	0.152	0.098	No significant effect
Empathy (X_3)	0.354	0.001	Significant effect
Price according to quality (X_4)	0.089	0.287	No significant effect
Price according to benefits (X_5)	0.299	0.004	Significant effect
Price according to ability to pay (X_6)	0.365	0.000	Significant effect
F-count	**18.620**	**0.000**	Simultaneous significant model
Adjusted R^2	**0.486**	—	Can explain 48.6% of the variation in satisfaction

The Influence of Tangibles on Customer Satisfaction

The results of the study indicate that tangibles do not significantly influence customer satisfaction. This suggests that the physical facilities at the UB Canteen — including cleanliness, seating availability, lighting, and layout — are considered adequate by customers and therefore not a major factor in determining satisfaction. This finding aligns with who found that Generation Z has a minimum service threshold for physical aspects: they will only be satisfied if minimum standards are met, but do not consider tangibles a primary differentiating factor [4,17].

Furthermore, campus canteen customers prioritize functional aspects such as speed of service, friendly staff, and affordable prices. This shows that strategically, UB can maintain the current facility standards but needs to improve non-physical service aspects to increase satisfaction.

The Effect of Reliability on Customer Satisfaction

The reliability variable did not significantly influence satisfaction. This result is interesting because reliability is theoretically a key pillar of service quality. However, as shown in other campus foodservice research, reliability is often considered a basic need that must be met by service providers [16,27]. Therefore, while reliable order delivery and timely service are important, these factors are insufficient to increase satisfaction if they are not supported by the emotional state and perceived economic value of the customer.

Research by Kim et al. [16] and Kim [31] in the context of a university cafeteria showed similar results: students responded more to the emotional aspects of service than to the technical aspects of service. In the context of the UB Canteen, *fairly good* reliability did not contribute additionally to satisfaction, so service improvements could be directed at personalizing service and individualizing customer attention.

The Influence of Empathy on Customer Satisfaction

Empathy has the most significant influence among the other dimensions of service quality. This underscores the importance of human interaction in campus foodservice. Employees' friendly demeanor, attentiveness, and ability to understand customer needs create a positive experience that significantly increases satisfaction.

This finding aligns with previous studies [10,16,31], which show that Generation Z values emotional connection in service, including smiles, quick responses, and personalized assistance. These results also reflect that in a campus environment, customers are more sensitive to employee soft skills than technical aspects. Therefore, customer service training for UB Canteen employees has the potential to have the greatest impact on increasing satisfaction.

The Effect of Price-to-Quality Relationship on Satisfaction

The analysis results indicate that price-to-quality relationship does not impact customer satisfaction. This can be explained through two perspectives. First, campus canteen customers are relatively less likely to consider objective food quality (e.g., ingredient quality and cooking techniques), but rather to consider direct benefits such as taste and portion size. Second, recent literature, such as research by several studies [16,23,31], suggests that perceived quality in food service is less of a determining factor once customers are accustomed to certain standards. Thus, customers at the UB Canteen appear to assess price more based on perceived value and affordability than on technical food quality.

The Effect of Pricing According to Benefits on Customer Satisfaction

Pricing according to benefits has been shown to have a significant impact on satisfaction. Customers are satisfied when the price they pay delivers benefits that match or exceed expectations, such as adequate portions, appropriate taste, and convenient service. This finding aligns with value-based pricing theory, which states that customers evaluate products based on total benefits, not just objective quality or nominal price [1,15,26]. These results reinforce the importance of UB maintaining consistency in taste, portion sizes, and the dining experience so that customers feel they are receiving reasonable value for their money.

The Effect of Pricing According to Ability to Pay on Customer Satisfaction

Research findings that empathy and price perception — especially the appropriateness of price to benefits and ability to pay — are key determinants of customer satisfaction open up strategic opportunities for UB to further develop its role beyond simply being a regular canteen,

but rather as a vital part of campus facilities that support student well-being and experience. Recent studies have shown that campus canteen services contribute significantly to students' well-being, comfort, and sense of social connection to the institution [1,26].

First, from a human service perspective, the research finding that empathy is the most significant variable confirms that UB employees should act as *agents of experience*, not simply serving food. Empirical findings in university canteens indicate that service quality — including friendliness, quick response to customers, and attention to cleanliness — has a direct impact on student satisfaction levels [15]. Therefore, UB needs to provide structured training for employees, such as interpersonal communication, friendly service, and complaint handling. Strengthening these soft skills will enhance the emotional service experience, a key preference for Generation Z students [22,32].

Second, from a value and price perception perspective, because the alignment of price with benefits and purchasing power has been shown to significantly influence satisfaction, UB can implement adaptive pricing strategies and scaled menus. Examples include student value packages, affordable menus, and price differentiation based on portion size and dish category. Studies in Malaysia and Indonesia show that students assess satisfaction primarily based on value for money and affordability, rather than on the technical quality of the food [1]. With an adaptive pricing strategy, UB can accommodate student groups with varying purchasing power while maintaining service quality.

Third, UB can be developed as a multifunctional campus space not just a dining area, but also a social space, an informal study area, and a hub for student interaction. Literature shows that a comfortable, safe, and flexible campus dining room design can enhance students' sense of belonging, psychosocial well-being, and social engagement [33,34]. Therefore, the UB Canteen's layout can be redesigned with a more inclusive approach: group discussion areas, quiet study zones, outdoor or semi-open areas, and improved lighting and ventilation. Such a design can establish the UB Canteen as an integral part of the academic ecosystem, enhancing student comfort and productivity.

Fourth, amidst increasing attention to environmental sustainability issues, the UB Canteen can adopt environmentally friendly practices as part of the institution's social responsibility. Recent studies emphasize that campus foodservice faces challenges related to food waste, single-use plastics, and waste management efficiency [35]. Implementing biodegradable packaging, reducing plastic waste, separating organic and inorganic waste, and collaborating with local suppliers are strategies that the UB Canteen can adopt. In addition to enhancing a positive image, these strategies also educate students about sustainable consumption.

Fifth, from a managerial perspective, literature shows that service quality and perceived value for money are significant factors influencing customer loyalty and visit frequency [4]. Thus, UB can consider a long-term business model based on collaboration with related study programs—such as Nutrition, Food Technology, and Management—and form partnerships with local MSMEs. This collaborative business model will not only improve service quality but also have a social and economic impact on students and the community.

Overall, the development of UB based on the findings of this study can make it a modern campus dining hub that supports academic, social, economic, and environmental aspects. Through a combination of improved empathy-based interpersonal services, adaptive pricing strategies, space design that supports learning activities and social interactions, and the implementation of sustainable practices, UB can increase customer satisfaction, student loyalty, and strengthen the campus's image as an institution that cares comprehensively about the student experience and well-being.

CONCLUSION

The conclusions of this study can be summarized into the following main points. Empathy was the most influential service quality dimension affecting customer satisfaction at the UB Canteen, highlighting the central role of employee personal attention and interpersonal interaction in the campus foodservice context.

Price perception significantly influenced customer satisfaction, particularly through price-to-benefit and price-to-affordability dimensions, indicating that students prioritized value for money and economic accessibility over price-

to-quality considerations. Tangibles, reliability, and price-to-quality did not have significant partial effects on customer satisfaction, suggesting that these factors functioned as basic service requirements rather than differentiating elements once minimum standards were met. Simultaneously, service quality and price perception variables had a significant collective influence on customer satisfaction, with the regression model explaining 48.6% of the variation in satisfaction levels.

This study was limited to a single campus canteen, which may restrict the generalizability of the findings to other universities or foodservice settings. In addition, the use of self-reported questionnaire data may have introduced response bias. Future research should consider expanding the scope to include multiple universities or comparative studies across different campus foodservice models. Additional variables such as food taste, menu variety, dining atmosphere, digital service quality, and psychological factors should be incorporated to enhance explanatory power. Longitudinal studies are also recommended to examine changes in student satisfaction and expectations over time.

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