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TOTAL QUALITY MANAGEMENT AND SERVICE QUALITY AS PREDICTORS OF CUSTOMER SATISFACTION AMONG CUSTOMERS OF UNITED LABORERS MULTI-PURPOSE COOPERATIVE (ULMPC)

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Abstract: This study investigated how total quality management and service quality impact satisfaction among customers of United Laborers Multi-Purpose Cooperative. The research utilized a quantitative, descriptive-correlational design. Data were gathered from randomly selected members using validated Likert-scale survey questionnaires. Analysis was performed using Mean, Pearson correlation, and Multiple Regression to determine the relationship and predictive power of total quality management and service quality towards Customer Satisfaction. The results showed a strong positive relationship between total quality management and service quality towards customer satisfaction and were statistically rated highly. Increasing growth and productivity emerged as the most influential indicator of total quality management, significantly influencing customer satisfaction. Moreover, empathy appeared to have the strongest influence among the service quality indicators on customer satisfaction. These findings suggest that the business may prioritize personalized member care and modernized facilities to strengthen emotional connections and meet evolving service expectations. Additionally, management may focus on continuous organizational growth to ensure internal efficiency translates into long-term member loyalty. This study provides a roadmap for cooperative managers to enhance organizational resilience through empathetic service and strategic quality improvements.

Keywords: Customer Satisfaction; Total Quality Management; Service Quality; Philippines

I. INTRODUCTION

Businesses highly depend on their customers. As such, they must prioritize providing exceptional service to their customers (Basari & Shamsudin, 2020, p. 7). Stemming from the rapid change of the factors affecting the level of customer satisfaction over time (Hallencreutz & Parmler, 2021, p. 8), customer frustrations and dissatisfaction due to weak customer relationships (Altalhi & Basiouni, 2023, p. 3956), and expressing dissatisfaction through word-of-mouth (Syah & Wijoyo, 2021, p. 30), managers should critically analyze these underlying aspects to ensure the optimal satisfaction of customers. Hence, studying customer satisfaction is significant because it provides important insights into customer needs and expectations (Suchánek & Králová, 2019, p. 1248), customer loyalty (Supriyanto, Wiyono & Burhanuddin, 2021, p. 10), and how to improve the customer experience (Ha, 2021, p. 1032).

By understanding customers' preferences, expectations, and the enhanced customer experience, managers can formulate effective strategies to improve customer satisfaction. Thus, leading to sustainable revenue generation, which will allow them to expand market penetration (Yusoff & Nayan, 2020, p. 3) and overall business success (Ibrahim & Yusheng, 2020, p. 105).

According to Prasilowati, Suyanto, Safitri & Wardani (2021, p. 454), customer satisfaction is a key element in achieving organizational success. Additionally, this helps business leaders to formulate strategic plans in improving customer satisfaction to achieve organizational objectives (Mee-ngoen et al., 2020, p. 400; Haidar, Lestari & Utami, 2023, p. 5).

In the sector of cooperatives, prior research exhibits a significant relationship between customer satisfaction and the provision of quality service, thus suggesting that cooperatives should improve their quality of providing service and examine other factors that might help increase the level of satisfaction of customers (Mustapha, Aremu, & Brimah, 2017, p. 552). Placing strong emphasis on customer focus and developing high-quality products, as part of Total Quality Management (TQM) practices, was found to be a key factor in promoting customer satisfaction. Further, Menza & Rugami (2021, p. 74) highlighted that the integration of TQM principles into cooperatives' business practices will enable them to improve performance.

Moreover, organizational TQM positively impacts the service industry by improving service quality, adding value to the firm, and optimizing business functions and processes (Nguyen & Nagase, 2019, p. 282). Companies that place a high value on continuous improvement gain a strong market position. As a result, this will make them more resilient when faced with unpredictable changes in the market (Andreevich Surzhikov et al., 2021, p. 2457; Unnikrishnan, Tikoria & Agariya, 2019, p. 349).

Increasing customer satisfaction is also determined by the quality of services provided by cooperative businesses (Mustapha, Aremu & Brimah, 2017, p. 551-552). Customers tend to be delighted with the company with respect to the provision of quality service, making them become loyal customers, triggering their purchase intentions, and influencing potential customers (Afthanorhan et al., 2019:21; Supriyanto, Wiyono & Burhanuddin, 2021, p. 10). Weak customer relationships have an adverse effect on the firm, which may lead to a decline in service standards and limit customer interaction, thus, decreasing satisfaction (Altalhi & Basiouni, 2023, p. 3956). Hence, assessing the level of satisfaction among customers is highly beneficial. This information enables service providers to provide better services and enhance communication methods between employees and clients, ultimately resulting in an improved customer experience (Asnawi et al., 2019, p. 918). Service quality helps businesses to identify what they are strong in or weak in and compare themselves with their rivals (Prakash, 2019, p. 80).

This study aims to examine the impact of Total Quality Management and Service Quality on Customer Satisfaction among patrons of the United Laborers Multi-Purpose Cooperative in New Corella. Specifically, it seeks to address the following objectives: (1) to describe the level of total quality in terms of commitment to quality, customer focus, quality costs, quality system, and increasing growth and productivity; (2) to describe the level of service quality in the context of reliability, responsiveness, assurance, empathy, and tangibles; (3) to describe the level of customer satisfaction based on personnel, products, image, service, and access; (4) to establish significant relationships between total quality management and customer satisfaction; (5) to investigate whether a significant correlation exists between service quality and customer satisfaction; (6) to identify which domains of total quality management significantly influence customer satisfaction; and (7) to determine which domain of service quality best predicts customer satisfaction.

II. RESEARCH METHODOLOGY

This section discusses the methodologies used to collect the required data. It describes the research participants, resources, instruments, research design, data collection techniques, and the statistical analyses applied in the study.

2.1Population and Sample

This study was conducted in the United Laborers Multi-Purpose Cooperative, New Corella, Davao del Norte, Philippines. The respondents consisted of customers aged at least 18 years old and above, with a good standing status in the cooperative. Individuals who wish to withdraw from the study and do not meet the criteria were excluded, and those unable to understand and complete the survey questionnaire. A total of

2.2 Data and Sources of Data

A total of 384 respondents were selected as the sample size. The researcher used the Cochran Formula (Uakarn, Chaokromthong & Sintao, 2021, p. 87) to determine the sample size using the systematic random sampling method, given that the population is relatively large and to ensure equal representation across all sectors of the population (Olken & Rotem, 1986, p. 1). Additionally, the study employed a systematic random sampling technique, where every third customer of the cooperative across its four lines of business was invited to participate in the survey. This technique introduces a structured methodology into the process of randomly selecting participants, making it very straightforward for researchers and analysts to choose an acceptable sample size. The strata will consist of United Laborers Multi-Purpose Cooperative customers in good standing.

2.3 Theoretical framework

To lay the groundwork for this study, theoretical perspectives were anchored in Deming's Quality Management Theory and Expectancy-Disconfirmation Theory (EDT). Deming's Quality Management Theory holds the idea that small business managers should embrace a new quality philosophy to remain competitive in the market (Adawiyah, Pramuka & Sholikhah, Z., 2020, p. 8). Likewise, this theory strongly emphasizes the need for continuous improvement, aiming to enhance planning, production, and service to achieve superior quality and productivity while reducing costs. Supporting Deming's Quality Management Theory is Expectancy-Disconfirmation Theory (EDT), which posits that the model measures the severity of service failures and customers' expectations of a service provider. This model is also used to comprehend how effective service providers are in fulfilling customer needs and their influence on customer responses (Hien et al., 2024, p. 2). Furthermore, the anchored theories are reinforced by Contingency Theory (Sheikholeslam & Emamian, 2016, p.27-28), demonstrating that Total Quality Management (TQM) practices, especially product design and customer focus, are essential for improving organizational performance and customer satisfaction in competitive markets. The theory of the Stimulus-Organism-Response theory (Nikou, Selamat, Yusoff & Khiabani, 2016, p. 38-39) also solidifies the anchored theory, stressing that the environmental and service quality indicators function as external stimuli, activating customers' internal emotional and cognitive processes, which in turn serve as key mediators in influencing behavioral responses and directly impacting overall customer satisfaction.

2.4Statistical tools

This study calculated mean scores to evaluate the levels of the two independent variables—total quality management and service quality—and the dependent variable, customer satisfaction. Standard deviation was utilized to signify the extent of variance or dispersion of responses from the mean across the indicators of each variable. The researcher used Pearson's r to analyze the relationships among the variables, assessing the strength and direction of linear associations. A multiple regression analysis was performed to identify which indicators of the independent variables significantly affect customer satisfaction.

2.4.1 Design

This study used a quantitative, descriptive-correlational investigation to assess the extent of relationships among two or more variables through statistical analysis. The quantitative research method is defined in Wilson's (2019, p. 49) study as a tool that focuses on developing plans, designs, and strategies for gathering and analyzing data. This study involved data collection through questionnaires, surveys, clinical measurements, or polls, and analysis using statistical methods to examine the relationships among total quality management, service quality, and customer satisfaction. Moreover, in the study of Aggarwal & Ranganathan (2019, p. 34), a descriptive study is stressed to illustrate the distribution of one or more variables without considering any causal or other hypothesis. It is primarily used to resolve problems through observation analysis and description, without attempting to understand the reasons why the phenomenon occurs (Manjunatha, 2019, p. 867). Additionally, this study used a descriptive-correlational technique to characterize and explain the impact of total quality management and service quality on customer satisfaction. Further, Aprecia et al. (2022, p. 2) emphasized that the descriptive-correlational method involves describing variables and measuring their degree of relationship.

2.4.2 Mean

Mean scores were used to evaluate the magnitude of the variables, with total quality management and service quality identified as independent variables and customer satisfaction as the dependent variable. Standard deviation was used to measure the dispersion of responses relative to the mean for each indicator.

2.4.2.1 Pearson r Correlations

The study used Pearson's r to examine the strength and direction of the relationships among total quality management, service quality, and customer satisfaction. This statistical method determines whether variables exhibit a direct (positive correlation) or inverse (negative correlation) relationship.

2.4.2.2 Multiple Regression

A multiple regression analysis was performed to identify which specific elements of the independent variables—service quality or physical environment—most significantly predict customer happiness, in accordance with the study's primary objectives. This strategy facilitated the concurrent assessment of several predictors, yielding a thorough comprehension of their individual and collective impacts on the dependent variable.

III. RESULTS AND DISCUSSION

This portion presents the findings, interpretations, and recommended interventions derived from the research. All inferential data were examined and interpreted using a significance threshold of 0.05. The tables and their corresponding explanations were systematically organized under the following categories: Level of Total Quality Management, Level of Service Quality, Level of Customer Satisfaction, Significance of Relationship between Total Quality Management and Customer Satisfaction, Significance of Relationship between Service Quality and Customer Satisfaction, Regression Analysis on Total Quality Management to Customer Satisfaction, and Regression Analysis on Service Quality to Customer Satisfaction. Data were presented in both tabular and textual form.

Level of Total Quality Management

The overall mean score for total quality management was 4.04, with a standard deviation of 0.704, indicating a high level of perceived total quality management among United Laborers Multi-Purpose Cooperative's customers in New Corella. As shown in Table 1, ULMPC customers place significant value on organizational consistency, reliable service delivery frameworks, and tangible operational efficiency outcomes. These findings reinforce the core tenets of the TQM framework established by Goh (2000, pp. 40-48), highlighting the role of the 5 pillars of total quality management, particularly Commitment to Quality, Quality System, and Increasing growth and productivity, which significantly affect customer satisfaction.

Table 1. Level of Total Quality Management

Indicators	Mean	SD	Description
Commitment to Quality	4.09	0.803	High
Customer Focus	3.99	0.889	High
Quality Costs	3.99	0.889	High
Quality System	4.05	0.783	High
Increasing growth and productivity	4.09	0.763	High
Overall	**4.04**	**0.704**	**High**

Level of Service Quality

The overall mean score for service quality, the overall mean service quality score received 4.04, with a standard deviation of 0.708, indicating a high level of perceived service quality among ULMPC customers in New Corella. These results suggest that members of the cooperative place a high value on the dependability and promptness of service delivery while also prioritizing the professional trust established by staff competency and the standard of the organization's physical facilities. These results support the fundamental principles of the SERVQUAL framework, particularly Reliability, Responsiveness, and Assurance, supported in the study of Ramseook Munhurrun, Naidoo & Lukea-Bhiwajee (2019, p. 53), Afthanorhan et al., (2019, p.21), and Supriyanto, Wiyono & Burhanuddin (2021, p. 10), which found service quality domains to have a direct effect on customer satisfaction.

Table 2. Level of Service Quality

Indicators	Mean	SD	Description
Reliability	4.11	0.929	High
Responsiveness	4.05	0.764	High
Assurance	4.03	0.860	High
Empathy	4.01	0.832	High
Tangibles	4.03	0.795	High
Overall	**4.04**	**0.708**	**High**

Level of Customer Satisfaction

The overall mean score for customer satisfaction was 4.04, with a standard deviation of 0.644, indicating a high level of satisfaction among customers of ULMPC in New Corella. These findings indicate that Image, Access, and Personnel are the most important indicators influencing customer satisfaction, stressing the organizational trustworthiness, easy access to services, and high levels of staff competence. These results reinforce the Expectancy-Disconfirmation Theory proposed by Hien et al. (2024, p. 2), which states that customer satisfaction is primarily driven by the alignment of service quality with expectations.

Table 3. *Level of Customer Satisfaction*

Indicators	Mean	SD	Description
Personnel	4.05	0.765	High
Products	4.03	0.799	High
Image	4.08	0.743	High
Service	4.02	0.774	High
Access	4.05	0.763	High
Overall	**4.04**	**0.644**	**High**

Satisfaction Significance of the Relationship Between Total Quality Management and Customer Satisfaction

The findings in Table 4 reveal a strong positive association between total quality management and customer satisfaction among United Laborers Multi-Purpose Cooperative customers in New Corella. The indicators of Total Quality Management have shown a significant positive correlation with customer satisfaction, where Increasing Growth and Productivity received the highest R-value of 0.825, Customer Focus, r=0.817, Quality System, r=0.812, Quality Costs, r=0.788, and Commitment to Quality, r=0.786, confirming the rejection of the null hypothesis in each scenario. These findings align with the theoretical frameworks and empirical studies on total quality management and customer satisfaction. The TQM framework developed by Goh (2000, pp. 40-48) highlights Increasing Growth & Productivity and Customer Focus as fundamental factors in shaping total quality management and satisfaction, particularly within the cooperative business.

Table 4. *Significance of the Relationship between Total Quality Management and Customer Satisfaction*

Independent Variables	Dependent Variable	*r-value*	*p-value*	*Decision*
Commitment to Quality	Customer Satisfaction	0.786	<.001	H_0 is rejected
Customer Focus		0.817	<.001	H_0 is rejected
Quality Costs		0.788	<.001	H_0 is rejected
Quality System		0.812	<.001	H_0 is rejected
Increasing growth and productivity		0.825	<.001	H_0 is rejected

Satisfaction Significance of the Relationship Between Service Quality and Customer Satisfaction

Table 5 has shown a statistically significant and strong positive relationship between service quality and customer satisfaction among members of United Laborers Multi-Purpose Cooperative in New Corella. Among the five indicators of service quality, Empathy was rated the highest with r-value of 0.887, Tangibles, r=0.851, Assurance, r=0.825, Responsiveness, r=0.803, and Reliability, r=0.661, which exhibited a significant positive correlation with customer satisfaction, resulting in the rejection of the null hypothesis for all variables. These findings illustrate the significant influence of service quality on customer satisfaction, supporting the empirical evidence presented by Ramseook-Munhurrun, Naidoo, and Lukea-Bhiwajee (2010, p. 53), emphasizing the predictive power of service domains on customer perceptions.

Table 5. *Significance of the Relationship between Service Quality and Customer Satisfaction*

Independent Variables	Dependent Variable	*r-value*	*p-value*	*Decision*
Reliability	Customer Satisfaction	0.661	<.001	H_0 is rejected
Responsiveness		0.803	<.001	H_0 is rejected
Assurance		0.825	<.001	H_0 is rejected
Empathy		0.887	<.001	H_0 is rejected
Tangibles		0.851	<.001	H_0 is rejected

Regression Analysis on the Influence of the Domains of Total Quality Management on Customer Satisfaction

Table 6 demonstrates that the domains of total quality management significantly influence customer satisfaction at the United Laborers Multi-Purpose Cooperative. The model was statistically significant, as evidenced by an F-ratio of 310.3 and a p-value of <.001, indicating that the domains of total quality management are valid indicators of customer satisfaction. Furthermore, a 0.804 R-squared value suggests 80.4% of the variance in customer satisfaction is accounted for by the TQM domains. Individual analysis of the domains shows that all five indicators are significant predictors of satisfaction, leading to the rejection of the null hypotheses. These results support Deming's Quality Management Theory, which demonstrates how the collective and individual significance of Total Quality Management (TQM) dimensions drives customer satisfaction through a systemic commitment to continuous improvement (Adawiyah, Pramuka & Sholikhah, 2020, p. 8).

Table 6. *Regression Analysis on the Influence of the Domains of Total Quality Management on Customer Satisfaction*

TOTAL QUALITY MANAGEMENT	Unstandardized	Standard Error	Standardized	t-value	p-value	Decision
(Constant)	0.489	0.096				
Commitment to Quality	0.150	0.038	0.172	3.980	<.001	H_0 is rejected
Customer Focus	0.180	0.037	0.228	4.829	<.001	H_0 is rejected
Quality Costs	0.157	0.039	0.166	3.992	<.001	H_0 is rejected
Quality System	0.123	0.043	0.138	2.894	0.004	H_0 is rejected
Increasing growth and productivity	0.266	0.040	0.290	6.618	<.001	H_0 is rejected
R-value = 0.897	$R^{2.}$ = 0.804					
F-ratio = 310.3	P-value = <.001					

Regression Analysis on the Influence of the Domains of Service Quality on Customer Satisfaction

Table 7 demonstrates that the service quality domains exert a significant influence on customer satisfaction at the United Laborers Multi-Purpose Cooperative. The model was statistically significant, as evidenced by an F-ratio of 418.6 and a p-value of <.001, indicating that the service quality domains are valid and robust predictors of satisfaction levels. Furthermore, the R2 value of 0.847 suggests that 84.7% of the variance in customer satisfaction is accounted for by these service quality domains. Individual analysis of the domains shows that four out of five indicators– Reliability, Responsiveness, Empathy, and Tangibles– are significant predictors of satisfaction, leading to the rejection of the null hypotheses. However, while Assurance shows a positive relationship, its p-value of 0.052 indicates it does not meet the threshold for statistical significance, failing to reject the null hypothesis in that domain. The Expectancy-Disconfirmation Theory validates the results by demonstrating that ULMPC's high satisfaction scores are a direct result of "positive disconfirmation," which occurs when the cooperative's strategic performance across the five SERVQUAL dimensions consistently meets customers' expectations (Hien et al, 2024, p. 2).

Table 7. *Regression Analysis on the Influence of the Domains of Service Quality on Customer Satisfaction*

SERVICE QUALITY	Unstandardized	Standard Error	Standardized	t-value	p-value	Decision
(Constant)	0.588	0.021				
Reliability	0.067	0.033	0.089	3.199	0.001	H_0 is rejected
Responsive-ness	0.128	0.034	0.14	3.851	<.001	H_0 is rejected
Assurance	0.067	0.039	0.082	1.952	0.052	H_0 is not rejected
Empathy	0.356	0.039	0.424	9.246	<.001	H_0 is rejected
Tangibles	0.24	0.035	0.273	6.905	<.001	H_0 is rejected
R-value = 0.920	$R^{2.}$ = 0.847					
F-ratio = 418.6	P-value = <.001					

IV. CONCLUSION

This study concludes that the management of United Laborers Multi-Purpose Cooperative may establish formal feedback mechanisms and a robust complaint-resolution system to ensure that consumer concerns and grievances are addressed systematically. By proactively addressing complaints and incorporating customer feedback into operational strategies, the organization can significantly improve the overall customer experience. Moreover, the management may consider investing in employee training in quality control and adopting organized quality systems, such as ISO 9001, which are critical for maintaining standards. Moreover, integrating automated quality-tracking technology may enable immediate problem detection and improve overall management control. The cooperative may also establish performance appraisal criteria that go beyond transactional volume and incorporate member-centric KPIs, specifically rewarding employees who display a "customer-first" mindset and customized attention. Furthermore, the cooperative may formalize its support for vulnerable demographics by establishing a clearly marked "Priority Lane," staffed by well-trained personnel for elderly, pregnant, and PWD care, to ensure timely, high-quality responses to their specific needs. In addition to these physical interventions, the use of digital appointment systems, SMS, or mobile application appointment slots may provide service flexibility outside normal office hours. Another recommendation may be the use of an advanced queuing system by using high-visibility electronic displays and mobile notifications to reinforce clarity in information channels. Expanding the use of new technology beyond online payments to encompass a wide range of digital channels, such as mobile account management and automated service tracking, is also crucial in optimizing accessibility, thereby ensuring that service procedures are conducted in an orderly manner. Finally, to improve procedural transparency, management may strategically deploy a formalized Customer Service Charter across all physical and digital channels by prominently displaying standardized workflows to ensure that communication channels remain clear.

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