# APPLICATION OF QUALITY GAP MODEL TO MEASURE QUALITY OF PHARMACIST'S SERVICE IN RETAIL PHARMACEUTICAL SETTINGS

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## ABSTRACT

*Pharmacy retail is growing at the rate of 20-25% annually. The organized pharma retail market size has the potential to grow to $9 billion by the year 2015. The adaptive research study focused on highlighting the facts like-To analyze existence of GAP5 (Difference in between expectation and perception of customer about the service provided) in Service quality model; To identify the important factors of service quality in retail pharmacy store and Relationship between perceived services quality and customer satisfaction. The attempt of research is causal in nature i.e. cause and effect. This study based mainly on the primary data collected through a developed questionnaire. The population selected was those who visited any retail pharmacy store with some general awareness about it. The method of purposive sampling is selected whereby patients have to fill the set of questions on the basis of the determinants. An attempt is done of 175 questionnaires to administer but we only received 157 questionnaires that were complete. Tools used for data analysis was reliability test, factor analysis, regression analysis. The finding of the research revealed that the overall service quality of retail pharmacy is low as expectations exceed perceptions meaning consumers desired more than what was offered to them.*

**Keywords: Pharmacist, Pharmaceutical, Service Quality, Gap model of Service Quality, Customer Retention**

## INTRODUCTION

Pharmaceutical market in India is about $ 11.1 billion growing at the rate of 17.6% and expected to reach $20 billion (Rs. 88,820 crore) by 2015.India's pharma market is 13th largest in terms of the value and 4th largest in terms of the volume. Currently only 1%-3% of the pharma retail is in the organized sector as stated by annual report 2009-10, Department of Pharmaceuticals, Govt. of India. The size of India's pharmacy retail market is estimated at $4.5 billion, which is dominated by 12-15 big players. There are about 800,000 retail shops serving in India and more than 3,500 organized retail pharmacy outlets in India. This is expected to grow nearly three times to 10,000 outlets by end of

2012. In similar fashion we are going to experience changes in pharmacy retail service quality in expectation and perception of customer.

## Conceptual Note

Pharmacy retail is growing at the rate of 20-25% annually. The organized pharma retail market size has the potential to grow to $9 billion by the year 2015. There are remarkable changes occurring in the pharma retailing .The will lead to the emergence of the change in service quality to increase value for the customer, means of positioning in competitive environment (when most of the companies have opened their own retail), to ensure customer satisfaction and their retention. In today's time customer are more aware and demanding due to the greater number of options available to them, so it's the quality of service provided by the pharmacy that will distinguish and position their image in the mind of customer.

The adaptive research study focused on highlighting the facts like-

- Existence of GAP5 (Difference in between expectation and perception of customer about the service provided) in Service quality model.

- How to measure service quality in retail pharmacy store?

- Relationship between perceived services quality and customer satisfaction

## Hypothesis

Ho: There is no association between the quality of services provided in retail pharmacy with customer satisfaction.

H0: There is no association between the customer satisfaction and retention of customer.

## LITERATURE REVIEW

The importance of customers has been highlighted by many researchers and academicians. Zairi (2000) said "Customers are the purpose of what we do and rather than them depending on us, we very much depend on them. A good quality service provided no make the customer only happy and satisfied but also influences the next buy decision of customer in same segment from same quality service providers that help in their retention. That is the main reason why not only organizations but also retail chains of pharmacy today are focusing on fulfilling customer expectations through their quality of services that will generate the customer Satisfaction, and their retention.

## Service Quality

Parasuraman et al. (1985) defined service quality as "The global evaluation or attitude of overall excellence of services". So service quality is the difference between customer's expectations of services provider's performance and their evaluation of the services they received. Similarly Gefan (2002) defined service quality as "The subjective comparison that customers make between the quality of the service that they want to receive and what they actually get". As the research is focused on examining major

users of retail pharmacy, according to Wikipedia Retail pharmacy service quality is defined as "The overall excellence of Pharmacy services that not only satisfy user but also help in their retention.

## Customer Satisfaction

According to Kotler (2000) satisfaction is defined as "a person's feelings of pleasure or disappointment resulting from comparing a product's/Service's perceived performance (or outcome) in relation to his or her expectations". So customer satisfaction could be considered a comparative behavior between inputs beforehand and post obtainments.

## Customer Retention

According to Wikipedia Customer Retention is the activity that a selling organization undertakes in order to reduce customer defections. Successful customer retention starts with the first contact an organization has with a customer and continues throughout the entire lifetime of relationship.

## Measures of Service Quality

Parsuraman et al. (1985) assert that service quality can be assessed by measuring the discrepancies or "gaps" existing between what the customer expects and what the consumer perceives about the received services. These gaps directly affect the service quality that the consumer perceives, A wide gap represents poor service quality and shows that the service provider needs to improve on the service offered to its customers. Based on their review of the literature, Parsuraman et al. (1985) developed the SERVQUAL scale based on difference score between customer expectations of service and their perceptions after receiving the service. However, Despite the fact that SERVQUAL has been empirically used in measuring quality of service in various studies , it has not been proven to be successfully applied in a retail setting .The need for a measurement instrument that can accurately assess service quality in a retail environment was answered by Dabholkar et al. (1996) who developed and empirically validated a tool known as Service Quality Scale (RSQS), this tool was the result of r certain modifications done to the original SERVQUAL scale to measure retail service quality distinctively. According to Dabholkar et al. (1996), retail service quality had a hierarchical factor structure which comprised of five basic dimensions. The five dimensions proposed were: Physical aspects Problem solving, Reliability, Policy, Personal interaction.

## Adapting the SERVQUAL to measure service quality

The origins of numerous instruments measuring service quality can be traced back the pioneering work of Parasuraman et al. (1988) who developed the widely popular scale termed as SERVQUAL to evaluate service quality. Since its introduction, SERVQUAL has spawned many other studies undertaken by both academicians and practitioners alike. It has been tested and applied in diverse service settings which includes hospitals (Babakus & Mangold, 1989), a dental school patient clinic, business school placement centre, tire store and acute care hospital (Carman, 1990), a utility company (Babakus & Boller, 1992), banking,

pest control, dry cleaning and fast food (Cronin & Taylor, 1992), and banking industries (Lassar et al., 2000; Zhu et al., 2002). Recently, SERVQUAL has also been expanded and applied to internet retailing (Trocchia & Janda, 2003; Long & McMellon, 2004).

*Figure showing Service Quality Gap Model*



*Source*: Parasuraman *et al.* [8]
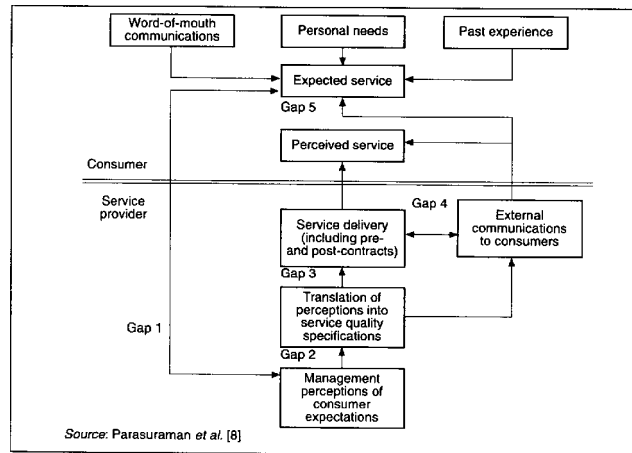
**Relationship between service quality and customer satisfaction**

Initially, Cronin and Taylor (1992) tested the causal relationship between service quality and customer satisfaction. In their article, they noted that there is no consensus on the causal order of the quality and satisfaction from the perspective of marketing researchers, and suggested that the true nature of this empirical relationship is required for further justification. The findings confirmed that perceived service quality can have powerful impact on satisfaction. Second, there are quite a number of studies exploring the relationship between service quality and satisfaction, for example, Spreng and Mackoy (1996) tested a model developed by Oliver (1993). There are two constructs reside in Oliver's model, and he proposes that perceived service quality is an antecedent of satisfaction. The results indicated that service quality leads to satisfaction.

Studies have already indicated the existence of GAP5 i.e. Difference between what a customers expects and what he actually perceives from a service. This attempt is just to recheck the study and scale in Retail pharmaceutical industry.

**OBJECTIVES**

- To diagnose quality problems in the area of expectations and perceptions of the customer towards pharmacist services (GAP5) by SERVQUAL survey instrument to measure the GAP5 in pharmacist services.

- To establish the relationship between perceived service quality, customer satisfaction in retail pharmacy setting.

- To establish the relationship between customer satisfaction and customer retention.

## RESEARCH METHODOLOGY

**Type of Research Design:** The attempt of research is causal in nature i.e. cause and effect. The relationship between perceived service quality as an independent variable with the customer satisfaction as a dependent variable is evaluated. Further the relationship between customer satisfactions as independent variable and customer retention as dependent variable was establish.

**Data Collection Method -** Survey method was used for the collection of the data for the study.

**Sampling Design**

**Population-**The population selected were those who visited any retail pharmacy store with some general awareness about it.

**Sampling Frame:** The study conducted on the population who visit the retail pharmacies store.

**Sampling Element:** Individual patient or customer is considered as the sampling element for the study.

**Sampling Technique:** The method of purposive sampling is selected whereby patients have to fill the set of questions on the basis of the determinants. A proportionate stress was given on the dependent variables and a correlation was studied to draw the interpretations for generalization.

**Sample Size:** The sample size for the study was taken of 157. An attempt is done of 175 questionnaires to administer but out of these 175 questionnaires but only 157 questionnaires that were complete.

**Tool of data collection –** The questionnaire has been designed on the basis of the study of scholars such as (Berry et al., 1985; Parasuraman et al., 1985; Zeithaml and Bitner, 1996; Stafford, 1996). They identified 5 dimensions of service quality: Physical Aspect, Reliability, personal Interaction, Problem Solving and Policy. The researchers used SERVQUAL  five dimensions (Physical Aspect, Reliability, Personal interaction, Problem solving and Policy) divided into 20 items, which are used to measure service quality model. According to SERVQUAL, the statements are then divided to measure the perception and expectation scores. Questions were based on Likert scale of 1 to 5 (1 stands for Strongly Disagree & 5 stands for Strongly Agree) for each dimension. In addition to this, Customer satisfaction and retention are also measured on Likert scale comprising a total of eight questions. Entire questionnaire has 28 questions in total.

**Tools used for data analysis**
- Reliability Test
- Factor Analysis
- Regression analysis

## Empirical Description

The SERVQUAL model proposed by Parshuraman et al. was the main basis of structured questionnaire where the data collected was on the basis of what is perceived and what is expected. This has helped to find out the applicability of SERVQUAL method in retail pharmacy and to identify how the customer satisfaction and customer retention is achieved.

## Coding

Satisfaction and service quality are both treated together as functions of a customer's perceptions and expectations and when expectation and perception are equal, service quality is satisfactory. The coding of variables is as:

## Physical Aspects

PA1 - Pharmacy store having modern equipments

PA2- Pharmacy store having rest room

PA3- Pamphlets in the store are informative

PA4- Neat appearance of Retail store

RL5- Pharmacy does what it promise

RL6- Pharmacy does service at first time

RL7-Pharmacy does service at promised time

RL8-No transaction error occurs.

PI9- Employees of store to answer customer's questions.

PI10- Behavior of employee to instill confidence in customers.

PI11-Prompt service provided.

PI12-Never too busy to respond to customers

P113-Individual attention to customers

PI14-Employees are consistently courteous towards customers

PS15-information provided conveniently

PS16-Pharmacy store shows sincere interest in problem solving

PS17-Employees are able to handle customer complaints

PL18-Convenient parking for customers

PL19-Convenient operating hours

PL20-Accepts all major credit cards

CS1-Retail pharmacy has confirmed my expectations.

CS2-Satisfied with the quality of retail store.

CS3-Retail stores have variety of products.

CS4-Pharmacy stores have a good quality product.

CS5-Guidance on medicine doses to be taken.

CR1-Only positive things about the retail pharmacy visited.

CR2-Customer of same pharmacy last visited.

CR3-Last visited retail pharmacy as first choice to make purchase.

All these items are evaluated on a scale of 1-5 Likert scale, where 1-Strongly Disagree, 2-Disagree, 3-Not agree nor Disagree, 4-Agree, 5-Strongly Agree

## *Table-1 Reliability Coefficient:*

| DIMENSIONS | NO. OF ITEMS | CRONBACH'S ALPHA | CRONBACH'S ALPHA BASED ON STANDARDIZED ITEMS |
|---|---|---|---|
| 1) Physical Aspect | 4 | .708 | .708 |
| 2) Reliability | 4 | .701 | .703 |
| 3) Personal Interaction | 6 | .819 | .821 |
| 4) Problem Solving | 3 | .694 | .698 |
| 5) Policy | 3 | .694 | .697 |
| 6) Customer Satisfaction | 5 | .523 | .532 |
| 7) Customer Retention | 3 | .447 | .446 |

## Findings

The internal consistency of the modified SERVQUAL items was assessed by computing the total reliability scale. Looking at the reliability coefficients of all six dimensions on above table, some dimensions have coefficients below 0.7, Problem solving (0.698) and policy (.697). This could as a result that some items under each dimension seemed too similar. The dimension, customer satisfaction and customer retention had a reliability coefficient, .532 and .446 respectively. Other dimensions, Physical aspects, Reliability and personal interaction showed coefficients higher than 0.7, meaning these dimensions comprising of various items show a true measure of service quality.

## *Table-2 Summary of means of customer' expectations and gap scores*

| DIMENSION | STATEMENT | PERCEPTION SCORE | EXPECTATION SCORE | GAP SCORE |
|---|---|---|---|---|
| Physical Aspect | PA1 | 2.73 | 4.10 | -1.37 |
| | PA2 | 2.56 | 3.93 | -1.37 |
| | PA3 | 3.11 | 4.17 | -1.04 |
| | PA4 | 3.11 | 4.13 | -1.21 |
| Reliability | RL1 | 2.97 | 4.29 | -1.30 |
| | RL2 | 3.10 | 4.32 | -1.23 |
| | RL3 | 3.03 | 4.32 | -1.29 |
| | RL4 | 2.86 | 4.27 | -1.40 |
| Personal Interaction | PI1 | 3.02 | 4.48 | -1.45 |
| | PI2 | 3.09 | 4.43 | -1.34 |
| | PI3 | 3.06 | 6.38 | -1.24 |
| | PI4 | 2.85 | 4.23 | -1.37 |
| | PI5 | 2.77 | 6.38 | -1.56 |
| | PI6 | 2.90 | 6.38 | -1.36 |
| Problem Solving | PS1 | 2.94 | 4.29 | -1.36 |
| | PS2 | 3.05 | 4.42 | -1.40 |
| | PS3 | 2.86 | 4.24 | -1.39 |
| Policy | PL1 | 2.50 | 3.91 | -1.43 |
| | PL2 | 3.20 | 4.29 | -1.10 |
| | PL3 | 2.71 | 4.20 | -1.41 |

## Findings

Expectations and perceptions were both measured using the 5-point likert scale whereby the higher numbers indicate higher level of expectation or perception. In general, consumer expectation exceeded the perceived level of service shown by the perception scores. This resulted in a negative gap score (Perception – Expectation). The gap scores are the difference between the perception and expectation scores with a range of values from -6 to +6 and these gap scores measure service quality and hence customer satisfaction. The more perceptions are close to expectations, the higher the perceived level of quality. According to Parasuraman et al., (1988, p.30) it is however common for consumer's expectation to exceed the actual service perceived and this signifies that there is always need for improvement. The items with the highest expectation scores were prompt service to customer, give individual attention and courteous with customer (each having 6.38). However, these scores are not very different from scores of other items and this implies generally consumers expect very high from Pharmacy stores. The items rated highest for actual service perceived were services are very informative, neat appearance of employee (3.11), does service well at first time (3.10) and behavior of employee instills confidence. There is no so much difference between the scores of perceptions but are generally lower than expectations.. The largest gaps scores were, individual attention to customer (-1.56), employees have knowledge to answer customer question (-1.45), no plenty convenient parking (1.43).

### Table-3 Factor analysis for the difference between perceptions and expectations (Gap scores)

**KMO and Bartlett's Test**

| KMO and Bartlett's Test | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .929 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1.223E3 |
| | Df | 190 |
| | Sig. | .000 |

The KMO and Bartlett test of sphericity indicates that the data is suitable for factor analysis. The KMO measures the sampling adequacy, which should be greater than 0.5 for a satisfactory factor analysis to proceed. Looking at the table above, the KMO measure is 0.929. From the same table, we can see that the Bartlett's test of sphericity is significant. That is, its associated probability is less than 0.05. In fact, it is actually 0.000. This means that the correlation matrix is not an identity matrix. The above facts indicate that the data collected on service quality is suitable for factor analysis.

## Table-4 Rotated Component Matrix

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Gap score of pharmacy store gives customers individual attention | .676 | | |
| Gap score of pharmacy employees give prompt service to customers | .660 | | |
| Gap score of pharmacy employees are courteous with customer | .644 | | |
| Gap score of Pharmacy store shows sincere interest, when customer has problem | .633 | | |
| Gap score of behavior of pharmacy employees instills confidence in customers | .632 | | |
| Gap score of Pharmacy employee able to handle customer complaints directly and immediately | .627 | | |
| Gap score of Pharmacy employees have the knowledge to answer customer's question | .612 | | |
| Gap score of pharmacy employee inform you conveniently | | | |
| Gap score of Pharmacy store does the service well at first time | | | |
| Gap score of material associated with the service is informative at Pharmacy store | | .692 | |
| Gap score about neat appearance of employee at Pharmacy store | | .658 | |
| Gap score of Pharmacy store does what it promises | | .647 | |
| Gap score of Pharmacy store has modern equipment and fixtures | | | |
| Gap score of Pharmacy store does the service in promised time | | | |
| Gap score of Pharmacy does not commit any transaction record error | | | |
| Gap score of pharmacy store has convenient operating hours for customer | | | |
| Gap score of pharmacy store accepts all major credit cards | | | .755 |
| Gap score of Pharmacy store provide plenty of convenient parking for customer | | | .726 |
| Gap score of Pharmacy store's physical facilities are visually attractive | | | |
| Gap score of pharmacy employees are never too busy to respond to customer's request | | | |
| Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. | | | |
| a. Rotation converged in 6 iterations. | | | |

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

## Table-5 Total Variance Explained

| Component | Initial Eigen values | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 8.008 | 40.041 | 40.041 | 4.449 | 22.247 | 22.247 |
| 2 | 1.290 | 6.451 | 46.492 | 3.251 | 16.253 | 38.500 |
| 3 | 1.070 | 5.348 | 51.840 | 2.668 | 13.339 | 51.840 |
| 4 | .943 | 4.717 | 56.556 | | | |
| 5 | .924 | 4.620 | 61.177 | | | |
| 6 | .776 | 3.879 | 65.056 | | | |
| 7 | .708 | 3.542 | 68.598 | | | |
| 8 | .684 | 3.419 | 72.017 | | | |
| 9 | .632 | 3.160 | 75.177 | | | |
| 10 | .601 | 3.006 | 78.183 | | | |
| 11 | .580 | 2.902 | 81.085 | | | |
| 12 | .535 | 2.674 | 83.759 | | | |
| 13 | .510 | 2.548 | 86.307 | | | |
| 14 | .484 | 2.420 | 88.727 | | | |
| 15 | .463 | 2.314 | 91.041 | | | |
| 16 | .420 | 2.099 | 93.140 | | | |
| 17 | .411 | 2.054 | 95.194 | | | |
| 18 | .365 | 1.824 | 97.018 | | | |
| 19 | .349 | 1.745 | 98.763 | | | |
| 20 | .247 | 1.237 | 100.000 | | | |
| Extraction Method: Principal Component Analysis. | | | | | | |

Table 4 denotes how much of the total data fit into the three factors and this is carried using variance (Table 5). The total variance percentage accumulated in the six factors is 51.840% and the factor one carries 22.247% of data indicating that most of the data fits into that factor. Hence personal interaction is the main determining factor to ensure the service quality of a retail pharmacy.

**Perceived service quality (GAP) relation with customer satisfaction in case of Retail Pharmacy**

**Ho**: There is no association between the quality of services provided in retail pharmacy with customer satisfaction.

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .250ª | .062 | .056 | .48111 | .062 | 10.294 | 1 | 155 | .002 | .902 |
| a. Predictors: (Constant), gap | | | | | | | | | | |
| b. Dependent Variable: satisfaction | | | | | | | | | | |

**ANOVA**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2.383 | 1 | 2.383 | 10.294 | .002ª |
| | Residual | 35.877 | 155 | .231 | | |
| | Total | 38.259 | 156 | | | |
| a. Predictors: (Constant), gap | | | | | | |
| b. Dependent Variable: satisfaction | | | | | | |

**Coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | 3.244 | .082 | | 39.573 | .000 | | |
| | gap | .174 | .054 | .250 | 3.208 | .002 | 1.000 | 1.000 |
| a. Dependent Variable: satisfaction | | | | | | | | |

**The regression equation showing relationship between Perceived Service Quality and customer Satisfaction**

$$Y = a + b X + e$$
$$Y = 3.244 + .174X + e$$

X = Service Quality (Independent Variable)
Y = Customer Satisfaction (Dependent Variable)
e = Standard error

The significant difference (.002) is less than .005 hence the model is fit and has predictive ability. A linear regression equation is established to states that service quality has closely related with customer satisfaction. Hence the null hypothesis is rejected, there is positive significant relationship between service quality and customer satisfaction.

**Customer satisfaction relation with customer retention in case of Retail Pharmacy**

**H0:** There is no association between the customer satisfactions in retail pharmacy with customer retention.

| ANOVA | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 8.953 | 1 | 8.953 | 39.133 | .000[a] |
| | Residual | 35.461 | 155 | .229 | | |
| | Total | 44.413 | 156 | | | |
| a. Predictors: (Constant), CUSTOMER SATISFACTION | | | | | | |
| b. Dependent Variable: VAR00002 | | | | | | |

| Coefficients | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. | Collinearity Statistics | |
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | 1.409 | .236 | | 5.973 | .000 | | |
| | Customer Satisfaction | .484 | .077 | .449 | 6.256 | .000 | 1.000 | 1.000 |
| a. Dependent Variable: VAR00002 | | | | | | | | |

**The regression equation showing relationship between Customer Satisfaction and Retention**

$Y = a + b\ X + e$

$Y = 1.987 + .013X + e$

X = Customer Satisfaction (Independent Variable)

Y = Customer Retention (Dependent Variable)

e=Standard error

The significant difference (.000) is less than .005 hence the model is fit and has predictive ability. A linear regression equation is established to states that customer satisfaction has closely related with customer retention. Hence the null hypothesis is rejected; there is positive significant relationship between customer satisfaction and customer retention.

**CONCLUSION**

From the above findings, it is found that overall perceived service quality by consumer is low in Retail Pharmacy stores and hence there is low customer satisfaction. Consumers have higher expectations than what they actually receive from Pharmacy stores. To answer our research questions which are; how consumers perceive service quality, are consumers satisfied with service offered by Pharmacy stores and does it help in their retention, the gap scores analysis carried out provided answers to these questions. The overall perceived service quality is low as expectations exceed perceptions meaning consumers desired more than what was offered to them. As a result of this gap, it is clear that consumers are not satisfied. Evaluating the perceptions and expectations of consumers, it can be seen that no dimension of service quality brings customer satisfaction and the dimension with which customer has high expectation and can bring a significant

improvement in pharmacy store is Personal interaction. Evidence from the study show that, pharmacy stores have to improve performance on all the dimensions of service quality in order to increase customer satisfaction since consumers expect more than what is been offered by these stores. This will enable them maintain high level of competitiveness.

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