

***An Assessment of Service Quality in  
Esco Lifesciences (Bangladesh) Pvt. Ltd.***

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**Submitted To**

Mr. Riyashad Ahmed  
Assistant Professor  
Brac Business School



**Submitted By**

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Submission Date: 09-01-2019

## Declaration

This is to notify that this report title “**An Assessment of Service Quality in Esco Lifesciences (Bangladesh) Pvt. Ltd.**” has been prepared as a part of my internship formalities. It is an obligatory part of our BBA program to submit an internship report. Moreover, I was inspired and instructed by my supervisor Md. Sazedur Rahman, Business Development Manager and other employees for submitting a report of this kind. In this regard, I like to mention that this report has not been prepared for any other purpose like presentation, reproduce or investigation for any other authorities.

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## Letter of Transmittal

09 January 2019

Mr. Riyashad Ahmed  
Assistant Professor  
Brac Business School

Subject: Submission of Internship Report

Dear Sir

It is my great pleasure to submit the Internship Report titled “An Assessment of Service Quality in Esco Lifesciences (Bangladesh) Pvt. Ltd.” which has been prepared as an integrated part of my course requirement in MBA program. My internship was held in Esco Lifesciences (Bangladesh) Pvt. Ltd.; I have tried my best to follow the instruction of my supervisor in preparing this report.

Throughout the report I tried to describe the company, its service quality, its activities and the study related matter elaborately. While preparing this report I went through extensive literature survey, interviewed with officers and customers.

I sincerely hope that you will enjoy this report as I enjoyed while writing. If you need any further clarification or information in interpreting this analysis, I will be glad to answer your questions.

Sincerely Yours

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Kamrunnahar Ahmed  
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## **Acknowledgement**

My warmth gratitude goes to many people whose affable cooperation and advice helped me a lot bringing my endeavor into realization. I am very much grateful to my supervisor 'Md. Sazedur Rahman for his cordial cooperation in preparing this report.

I express my deep gratefulness to all employees of Esco Lifesciences (Bangladesh) Pvt. Ltd. And Esco Micro Pte. Ltd., for their cooperation to collect various required supportive from various sources and helped me to complete this internship report.

Finally, I express my deep gratefulness to my academic supervisor Mr. Riyashad Ahmed, I am very much pleased to him for helping me to complete this report.

## Executive Summary

Esco was founded in Singapore in 1978 and began to pioneer cleanroom technology in Southeast Asia. Esco was established to provide clean air solutions for the high-tech industrial and life sciences industries. Since its very beginning Esco has earned a reputation for innovation in the worldwide laboratory and cleanroom industry.

From our headquarters in Singapore, Esco directs a highly efficient research, product development, manufacturing and customer service program. With global offices in eight additional locations, Esco products are sold in more than 100 countries through more than 300 independent distribution partners. Esco is a world leader in biological safety cabinets, offering the industry's widest product range, with thousands of installations in leading laboratories around the globe. Our customers are the world's leading life sciences providers, hospitals, biomedical and pharmaceutical institutions, and universities. ESCO stands for Excellent Service Company.

To determine the overall service quality of the company I have made a research on the service quality of Esco Lifesciences (Bangladesh) Pvt. Ltd. Because measuring service quality is the best way to evaluate any service sector. There are four measures of service quality- SERVQUAL, importance weighted SERVQUAL, SERVPERF, and importance weighted SERVPERF. In developing country, the most useful measurement is SERVQUAL. By asking 22 expectations and perceptions questions to the customer of Esco Lifesciences (Bangladesh) Pvt. Ltd. about the performance of the company on the basis of SERVQUAL scale we find six factors are important in measuring service quality. The leading researcher in this area Parasuraman, et al After substantial factor analysis and testing, reduced the 10 service quality determinates in SERVQUAL to 5 (tangibles, responsiveness, reliability, assurance, and empathy. The original ten dimensions are Tangibles, Reliability, Responsiveness, Competence, Courtesy, Credibility, Security, Access, Communication, Understanding the Customer. And in my research I found four factors are important in regarding the service quality of Esco Lifesciences (Bangladesh)

Pvt. Ltd. And these are- tangible & empathy, responsiveness, reliability and assurance, where tangibles and empathy are working as one factor. In my research factor analysis, t-test and chi-square technique are used. The variables were 12; and 50 customers have been interviewed. The answers of them were applied in the statistical technique. And interpreting the result of these techniques we find, the customer of the company was highly satisfied with the Tangibles & Empathy of the company. And to be more delightful the customers still want some extra effort from the company like in terms of reliability, assurance and responsiveness. The reason behind of this is that Esco Lifesciences (Bangladesh) Pvt. Ltd. always believes in customer relationship and the customer always expect much higher than to the others. And without no doubt it can be said, very soon after fulfilling all the four factors the company will increase the expectation of its customer more towards them. And Esco Lifesciences (Bangladesh) Pvt. Ltd. is the company that always loves to please their customer and having better relationship with them.

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## Organizational Overview

### Company Profile:

Esco Group is a renowned Singapore-based life science company with a diversified portfolio and sales in over 100 countries. As a world leading manufacturer of laboratory and biopharma equipment, and IVF medical devices, Esco offers tailored solutions that fit the needs of laboratories.

With three divisions, namely, Life Sciences, Medical and Healthcare, Esco contributes to meet the challenges of the 21st century by continuously innovating our products to support cutting-edge research, helping bio-pharmaceutical companies make their drugs safer and more cost effective, enabling lower cost manufacturing of vaccines, and directly through innovative medical devices and diagnostics.

Esco Life Sciences has established its name since the beginning, having strong position in laboratory equipment technology. With the most extensive product line in the industry, Esco Life Sciences is dedicated to delivering innovative solutions for the clinical, research, and industrial laboratory community. Our proudest accomplishment is the complete range of controlled environment equipment solutions which includes Biological Safety Cabinets, Fume Hoods, General Purpose Ovens and Incubators, CO2 Incubators, and ULT Freezers.

Esco Medical is the IVF Medtech Company of Esco Group, manufacturing and innovating high-quality equipment such as long-term embryo incubators, ART workstations, anti-vibration table, and time lapse incubator. Esco Medical is continuously developing advanced technologies to increase pregnancy rates and patient satisfaction and to meet the increasing demand of the IVF industry.

Esco Healthcare, comprised of 3 divisions - Esco Pharma, VacciXcell and TaPestle Rx - enables a complete translational discovery to delivery within the healthcare industry from

research and development to clinical trials, final commercial production, and pharmacy compounding or stem cell therapy.

The Group further extends its business into faster growing segments in the market by establishing a strategic investment arm, Esco Ventures.

Esco Ventures invests in biomedical startups and is also engaged in venture creation to discover and develop technologies addressing unmet medical needs.

Esco Lifesciences (Bangladesh) Pvt. Ltd. has started its journey on 1<sup>st</sup> January,2015. It has achieved a good will among its customers through its excellent service quality. Currently some of the prominent customers are Beximco Pharmaceuticals Ltd., Square Pharmaceuticals Ltd., Iccdr,b, Bangladesh Council of Scientific and Industrial Research, Bangladesh Agricultural University, University of Dhaka, Noakhali Science & Technology University, Jessore Science & Technology University, Bangladesh University of Engineering and Technology, Apollo Hospital, National Institute of Cancer Research and Hospital etc.

## Company Background

In 1978, Esco was founded in Singapore and began to pioneer cleanroom technology in Southeast Asia. Esco was established to provide clean air solutions for the high-tech industrial and life sciences industries. Since its very beginning Esco has earned a reputation for innovation in the worldwide laboratory and cleanroom industry.

From our headquarters in Singapore, Esco directs a highly efficient research, product development, manufacturing and customer service program. With global offices in eight additional locations, Esco products are sold in more than 100 countries through more than 300 independent distribution partners. Esco is a world leader in biological safety cabinets, offering the industry's widest product range, with thousands of installations in leading laboratories around the globe. Our customers are the world's leading life sciences providers, hospitals, biomedical and pharmaceutical institutions, and universities.

Today, with dedicated people filled with energy and optimism, Esco serves present markets, plans for future markets, and strengthens our position as a global force in clean air and laboratory equipment technology. Our proudest accomplishment isn't just a complete range of controlled environment equipment solutions which includes Biological Safety Cabinets, Fume Hoods, General Purpose Ovens and Incubators, CO2 Incubators, Downflow Booths, ULT Freezers, and more; it's actually our new state-of-the-art manufacturing facility. This new manufacturing site doesn't just represent how far we've come since that first laminar flow clean bench. It's also a glimpse of where are headed tomorrow.

The company has a unique history of innovations, including:

- Inventor of the cleanroom vertical laminar flow straddle unit for microelectronics production.
- One of the world's first laboratory equipment manufacturer to incorporate a proprietary antimicrobial coating – ISOCIDE™ – which eliminates 99.99% of surface bacteria within 24 hours, on the coated surfaces of all equipment.

- Pioneered energy efficient technologies on biological safety cabinets, including INNOVA™ external rotor motors and UV timers which save energy required for decontamination.
- Introduced ULPA filter technology to the mainstream biological safety and laminar flow cabinet market in North America. ULPA filters operate at >99.999% efficiency, superior to conventional HEPA filters, and therefore deliver superior protection.
- World's only biological safety cabinet manufacturer with products certified to all the leading international standards.
- Frontier Acela® - ergonomically designed, angled front, high performance low flow fume hood. Low constant volume design reduces energy consumption and carbon footprint.
- Labculture® Class II (Low Noise Series) - introduced the industry's lowest noise (~50dBA per EN) biological safety cabinets.

## Vision

Is to be a global leader in clean air, containment and controlled environment equipment solutions for the scientific, biomedical, pharmaceutical and cleanroom markets.

## Mission

- Provide employees a safe work environment that challenges, enables success, in which everyone can build a career,
- Deliver "zero-defect" quality, innovative, practical products at competitive prices offering the best value,
- Market a wide range of products for different customer segments, across multiple scientific equipment product categories,
- Achieve the industry's lowest cost structures through operational effectiveness and continuous improvement,
- Provide the best customer care before, during and especially after the sale,
- Build long-term, mutually beneficial relationships with distribution partners worldwide, supported by Esco operations in the major markets,

– Build a global brand in the scientific equipment market recognized for the above attributes.

## Values

- ✦ Attitude
- ✦ Competence
- ✦ Commitment
- ✦ Communication
- ✦ Growth

## Products:

The products of Esco Lifesciences (Bangladesh) Pvt. Ltd are as follows:

### A. Lifesciences Products:

#### Sample Preparation

- + Class I Biological Safety Cabinet
- + Class II Biological Safety Cabinets
- + Class II Type A2 Biological Safety Cabinets
- + Class II Type B2 Biological Safety Cabinets
- + Class II Type B1 Biological Safety Cabinets
- + Class III Biological Safety Cabinets / Isolators
- + Horizontal Laminar Flow Clean Benches
- + Vertical Laminar Flow Clean Benches
- + Laboratory Centrifuge
- + Laboratory Animal Research Workstations

#### Sample Cultivation

- + CO2 Incubators Direct Heat Air-Jacketed
- + CO2 Incubators
- + CO2 Incubators with Cooling System
- + CO2 Incubators with Stainless Steel Exterior
- + Laboratory Shakers

#### Sample Analysis

- + PCR Thermal Cyclers
- + Conventional Thermal Cyclers
- + Real-time PCR Systems
- + PCR Sample Handling
- + Microplate Shakers
- + PCR Cabinets

#### Sample Storage & Protection Solutions

- + Ultra-low Temperature Freezers
- + Lab Refrigerators and Freezers



Chemical Research

- + [Ductless Fume Hoods](#)
- + [Laboratory Fume Hoods](#)
- + [Fume Hood Airflow Monitors](#)
- + [Exhaust Blowers](#)
- + [Powder Weighing Balance Enclosures](#)

General Equipment

- + [Laboratory Thermostatic Products](#)
- + [Laboratory Ovens](#)
- + [Laboratory Incubators](#)
- + [Refrigerated Incubators](#)
- + [Forensic Sciences](#)
- + [Evidence Drying Cabinet](#)

**B. Medical Products:**

Controlled Embryo Handling

- + [IVF Workstation](#)
- + [Anti-Vibration Table](#)

Safe Embryo Culture

- + [Benchtop Multi-room Embryo Incubators](#)
- + [CO2 Incubators](#)
- + [Humidified Benchtop Incubators](#)

Innovative Time Lapse Imaging

- + [Time-Lapse Embryo Incubators](#)

Accurate Quality Control

- + [CO2 / O2 Temperature Validation Unit](#)
- + [Gas Temperature Validation](#)

Unique Consumables

- + [Culture Coin](#)

### **C. Pharmaceutical Equipment:**

#### Airflow Containment

- + Downflow Booths
- + Ceiling Laminar Airflow Units
- + Laminar Flow Horizontal Trolley
- + Laminar Flow Vertical Trolley
- + Laminar Flow Straddle Units
- + Cytotoxic Safety Cabinets
- + Garment Storage Cabinet
- + Ventilated Balance Enclosure

#### Cross Contamination Facility Integrated Barrier

- + Cleanroom Air Showers
- + Air Shower Pass Box
- + Cleanroom Transfer Hatch
- + Pass Boxes
- + Soft Wall Cleanroom
- + Dynamic Passboxes and Dynamic Floor Label Hatches

#### Isolation Containment

- + Containment Barrier Isolator (CBI)
- + Cell Processing Isolator
- + Aseptic Containment Isolator (ACTI)
- + Weighing and Dispensing Containment Isolator (WDCI)
- + Healthcare Platform Isolator
- + General Processing Platform Isolator (GPPI)
- + Compounding Aseptic Containment Isolator
- + Compounding Aseptic Isolator

## Objective of the Study

### Primary Objective

This report has been prepared as a requirement of the internship program. The report is based upon the organization named “Esco Lifesciences (Bangladesh) Pvt. Ltd”.

### Secondary Objective

- ✚ To identify the customers' perception at the time of receiving service.
- ✚ To identify the level of customers' expectation from the company. It will help the company to provide the services according to their customer.
- ✚ To identify what are the factors that are related with the services of the company.
- ✚ To identify at which factors Esco Lifesciences (Bangladesh) Pvt. Ltd. is doing good job. So it can continuously be fulfilling customers' expectation.
- ✚ To identify where Esco Lifesciences (Bangladesh) Pvt. Ltd. is not fulfilling the customers' expectation. It can help the company for further improvement.
- ✚ To see the customer satisfaction level of the customer in Esco Lifesciences (Bangladesh) Pvt. Ltd.

## Scope of the Study

This study attempts to relate the expected services and perceived services by customers. The study is mainly done on perception of the customer of Esco Lifesciences (Bangladesh) Pvt. Ltd. Most of the primary information has been collected through a questionnaire survey. This study briefly highlights the various customer services of Esco Lifesciences (Bangladesh) Pvt. Ltd.

## Methodology

The type of research that is in the report is a **descriptive research**. It is conducting a probable perception of the customers in terms of service they are having in Esco Lifesciences (Bangladesh) Pvt. Ltd. The research will help to describe the service quality of the company.

The **target population** in this following research is defined as follows:

- ✚ Elements - male or female respondent client or customer
- ✚ Sampling units- customers
- ✚ Extent- Esco Lifesciences (Bangladesh) Pvt. Ltd.
- ✚ Time -1<sup>st</sup> October,2018 to 25<sup>th</sup> November,2018

Considering factor analysis application, the sample size should be at least four or five times as many as there are variables. In this research the variables are 12 and therefore the **sample size** should be 60 but for on the basis of availability the survey made on 50.

In this research, through the **convenience sampling** sample was chosen. Convenience sampling attempts to obtain a sample of convenient element. The selection of sampling units is left primarily to the interviewer. Often, respondents are selected because they happen to be in the right place at the right time. Convenience sampling unit are accessible, easy to measure, and cooperative. And moreover it is also least expensive and least time consuming of all sampling technique.

As a survey method email questionnaires and telephonic interview have been used in the research. Respondents were interviewed over telephone and email regarding the service quality.

The **statistical techniques** that are used in this are as follow:

- ✚ Factor Analysis: Factor analysis is a general name denoting a class of procedures used for data reduction and summarization. In marketing research, there may be

large number of variables but most of which are correlated and which must be reduced to a manageable level. Relationships among sets of many interrelated variables are examined and represented in terms of a few underlying factors.

- ✚ T- test: The most popular parametric test is the t test, conducted for examining hypotheses about means. The t test could be conducted on the mean of one sample or two samples of observations. In the case of two samples the sample could be independent or paired.
  
- ✚ Chi-square Test: Chi-square is used to test the statistical significance of the observed association in a cross-tabulation. In the factor analysis the Bartlett's test of sphericity is used to test the null hypothesis that the variables are uncorrelated. The test statistics of sphericity is based on chi-square transformation of determination of hypothesis.

In conducting the **statistical techniques** 25.0 version SPSS software has been used.

## Literature Review

Service marketing was the precursor leading to the study of service quality. Pioneer research in this area (George and Barksdale, 1974) identified several distinct differences between the marketing of “service” firms and “manufacturing” firms. It was Shostack’s (1977) research that brought to the fore the distinct nature of services marketing. She noted that services were intangible, rendered, experienced, and unable to be stored. Consequently, her conclusion was that services should be marketed differently from tangible products. It was her early work that gave equal weight to the components of “service” as it did to “product.” Her research concluded that service marketing strategies should deal with specific issues related to distinct elements within each product. She also concluded that changes in any single element could impact other elements within the function, and as such, services marketing should consider products more holistically, meaning to look at each item on its merits alone.

Enis and Roering (1984) were unconvinced that there is a distinction between service marketing and manufacturing marketing. It was their conclusion that the strategies used for all product is strictly a “bundle of benefits” regardless of whether they are tangible or intangible.

### **Relationship between Customer Satisfactions and Service Quality in Service Product**

The principal study by Zeithaml, et al (1985) fostered a direct relationship between customer satisfaction and service quality and broadened the unique characteristics of service products. They explained that service in its production sense and consumption occur simultaneously. Production and consumption of service products cannot exist in isolation, requiring them to be simultaneously produced and consumed. Additionally, they suggest that service production and consumption is by its own nature heterogeneous. Their research was significant in that it highlighted the differences between manufactured products and service products, and it introduced the interrelationships between customer service and customer satisfaction through the measurement of gaps.

## **Customer Satisfaction**

A key aspect in customer satisfaction is the way a customer can attain satisfaction or dissatisfaction with a company's service. If a company wants to satisfy its customers the first question it needs to answer is what it that satisfies customers is and, equally important, what it is that makes customers dissatisfied with the company and its products and services. Satisfying customers depends on the balance between customers' expectations and customers' experiences with the products and services (Zeithaml et al., 1990). When a company is able to lift a customer's experience to a level that exceeds that customer's expectations, then that customer will be satisfied. Because customers have ever increasing expectations it is necessary for companies continuously to improve their quality and hence customers' experiences with the company. The issue is what should be improved to keep the customers satisfied. What customers experience is not just one simple aspect of a company, but a whole range of aspects. Some of these aspects are concerned with the way customers experience the company itself, some are concerned with the way customers experience the physical product and, finally, some are concerned with the way customers experience the service the company offers.

Comparing customers' expectations and their perceptions of actual performance can be done by making use of the SERVQUAL scale of Berry, Parasuraman and Zeithaml (Zeithaml et al., 1990).

## **Service Quality**

Recent debates in the marketing literature regarding the service quality concept have raised important issues for both academics and practitioners. Leading researchers in this area, including Parasuraman, Zeithaml, and Berry (1994), Cronin and Taylor (1992, 1994) and Teas (1994), have provided significant but sometimes conflicting insights into related conceptual, methodological, analytical, and practical issues. Although marketing scholars have proposed additional research on many of these issues, there has been little research on the generalizability of such findings across countries, especially those with developing economies. The four alternative measures of service quality (SERVQUAL, importance weighted SERVQUAL, SERVPERF, and importance weighted SERVPERF) were tested by taking the 22 expectation and performance measures from the

SERVQUAL scale (Parasuraman, Zeithaml, and Berry 1988) and adapting the importance weights used by Cronin and Taylor (1992). These 22 expectations and performance items measure perceptions regarding five factors believed important in service quality: reliability, responsiveness, empathy, assurance, and tangibles.



## Data Analysis

### Customer Response Data

Customer	Perception												Expectation											
	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12
1	4	4	4	5	5	4	4	4	4	5	4	5	5	6	5	6	5	5	5	5	5	5	6	6
2	3	4	3	4	6	4	5	3	3	5	3	6	5	6	5	6	5	5	6	5	5	5	6	6
3	4	4	4	5	5	5	4	4	5	5	4	6	5	6	5	6	5	5	6	5	5	5	6	6
4	2	4	2	4	6	4	5	2	4	6	3	5	5	6	5	6	5	5	5	5	5	5	6	6
5	5	4	5	4	5	5	4	5	3	5	4	5	5	6	5	6	5	5	6	5	5	5	6	6
6	5	4	5	5	6	4	5	5	5	6	3	6	5	6	5	6	5	5	5	5	5	5	6	6
7	2	2	2	4	5	4	5	2	4	5	4	6	5	6	5	6	5	5	6	5	5	5	6	6
8	3	2	3	4	6	5	5	3	5	6	5	5	5	6	5	6	5	5	5	5	5	5	6	6
9	5	3	5	5	5	3	5	5	4	5	3	6	5	6	5	6	5	5	6	5	5	5	6	6
10	5	5	5	4	6	5	5	5	3	6	5	3	5	6	5	6	5	5	5	5	5	5	6	6
11	5	5	5	6	4	3	5	5	5	5	4	2	5	6	5	6	5	5	6	5	5	5	6	6
12	4	5	4	5	6	4	5	4	4	6	4	2	5	6	5	6	5	5	6	5	5	5	6	6
13	4	4	4	4	5	4	5	4	4	5	5	2	5	6	5	6	5	5	5	5	4	5	6	6
14	3	5	4	6	4	6	6	4	6	3	5	5	5	6	5	6	5	5	6	5	4	5	6	6
15	4	5	5	5	6	5	6	5	5	5	5	5	5	6	5	6	5	5	5	5	4	5	6	6
16	2	5	4	4	5	6	6	6	4	5	5	5	5	6	5	6	5	5	6	5	4	5	6	6
17	5	5	5	6	4	6	6	6	5	3	5	6	5	6	5	6	5	5	6	5	4	5	6	6
18	5	5	4	5	6	5	6	4	4	6	5	4	5	6	5	6	5	5	5	5	5	5	6	6
19	2	5	5	4	5	5	5	4	5	6	5	4	5	6	5	6	5	5	6	5	5	5	6	6
20	3	5	4	6	4	4	5	5	4	6	5	5	5	6	5	6	5	5	6	5	5	5	6	6
21	5	5	5	5	6	5	5	5	5	5	5	5	5	6	5	6	5	5	5	5	5	5	6	6
22	5	5	4	4	5	6	4	6	4	6	6	5	5	6	5	6	5	5	6	5	5	5	6	6
23	5	5	6	6	4	5	5	5	5	3	5	5	5	6	5	6	5	5	5	5	5	5	6	6
24	4	5	6	5	6	4	4	5	4	3	6	5	5	6	5	6	5	5	6	5	5	5	6	6
25	4	5	6	4	5	5	4	4	5	6	6	6	5	6	5	6	5	5	5	5	5	5	6	6
26	4	5	3	6	4	4	5	5	4	4	6	4	5	6	5	6	5	5	6	5	5	5	6	6

Customer	Perception												Expectation											
	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12
27	4	5	3	5	6	5	4	6	5	6	6	4	5	6	5	6	5	5	5	5	5	5	6	6
28	4	5	3	4	5	4	5	5	6	5	5	4	5	6	5	6	5	6	5	5	5	5	6	6
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40	6	2	5	6	5	5	5	4	5	4	5	4	5	5	5	5	5	5	5	5	5	5	5	
41	5	2	4	5	5	5	4	5	4	6	5	5	5	6	5	5	5	5	5	5	5	4	5	
42	4	6	4	5	6	5	5	5	5	6	5	5	5	6	5	5	5	5	5	4	5	6	6	
43	6	5	4	5	6	5	6	5	4	6	4	5	5	6	5	5	5	5	5	5	5	6	6	
44	5	6	5	4	3	5	6	5	3	6	5	5	5	6	5	5	5	5	5	5	5	6	6	
45	4	5	2	4	5	5	6	5	3	5	6	5	5	6	5	5	5	5	5	5	5	6	6	
46	6	2	3	2	6	4	6	4	3	5	4	5	5	6	5	5	5	5	5	4	5	6	6	
47	5	3	5	4	5	4	6	6	3	5	5	5	5	6	5	5	5	5	5	5	5	6	6	
48	4	5	3	5	6	4	4	6	3	5	1	5	5	6	5	5	5	5	5	5	5	6	6	
49	6	5	3	5	4	4	5	6	3	5	3	5	5	6	5	5	5	5	5	5	5	6	6	
50	5	5	3	5	5	4	4	6	5	5	2	4	5	6	5	6	5	6	5	5	5	6	6	

## Factor Analysis

✚ Factor analysis is an appropriate technique  
For the factor analysis to be appropriate, the variables must be correlated. So this is the first condition that must be assured. In that case the null (Ho) hypothesis is that the variables are uncorrelated. In other words the population correlation matrix is an identity matrix. In an identity matrix, all the diagonal terms are 1, and all the off-diagonal terms are 0.

Ho: The variables are uncorrelated in the population

**Correlation Matrix**

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
Correlation V1	1.000	.236	.412	.308	-.184	.179	.136	.464	.066	-.036	.214	.144
V2	.236	1.000	.395	.551	.000	.157	.300	.363	.288	.020	.494	.392
V3	.412	.395	1.000	.480	-.166	.243	.165	.292	.330	-.263	.513	.299
V4	.308	.551	.480	1.000	-.205	.097	.221	.303	.417	-.294	.404	.380
V5	-.184	.000	-.166	-.205	1.000	-.284	-.053	-.269	-.070	.335	-.186	.000
V6	.179	.157	.243	.097	-.284	1.000	.163	.267	.345	-.100	.458	.160
V7	.136	.300	.165	.221	-.053	.163	1.000	.020	.115	-.095	.314	.170
V8	.464	.363	.292	.303	-.269	.267	.020	1.000	.080	-.107	.168	.030
V9	.066	.288	.330	.417	-.070	.345	.115	.080	1.000	-.187	.341	.126
V10	-.036	.020	-.263	-.294	.335	-.100	-.095	-.107	-.187	1.000	-.131	-.107
V11	.214	.494	.513	.404	-.186	.458	.314	.168	.341	-.131	1.000	.380
V12	.144	.392	.299	.380	.000	.160	.170	.030	.126	-.107	.380	1.000

**table-1.0**

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.720
Bartlett's Test of Sphericity Approx. Chi-Square	315.511
df	66
Sig.	.000

**table1.1**

.From the results of Factor Analysis that are given in the table 1.0 we find the approximate chi-square is 315.511 with 66 degrees of freedom, which is significant (0.000) at the 0.05 level.

It means the null hypothesis, that the population correlation matrix is an identity matrix, is rejected by the Barlett’s test of sphericity.

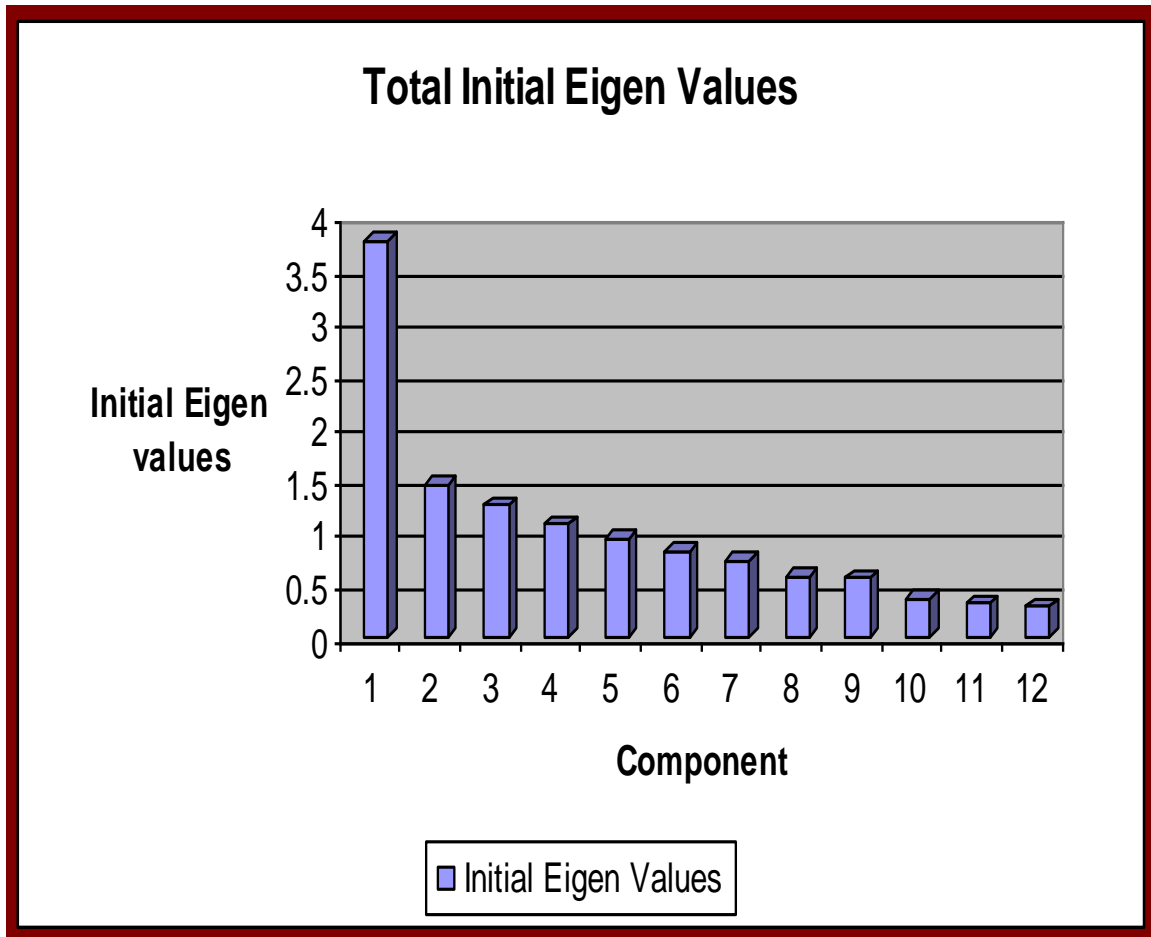
Again the value of KMO statistic (0.720) which is also large (>0.5). Thus factor analysis may be considered an appropriate technique for analyzing the correlation matrix of the given table 1.1.

### Determining Factors Based on Eigenvalues

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	<b>3.758</b>	31.320	31.320
2	<b>1.436</b>	11.963	43.284
3	<b>1.247</b>	10.392	53.675
4	<b>1.065</b>	8.877	62.552
5	.930	7.747	70.300
6	.809	6.742	77.042
7	.707	5.889	82.930
8	.566	4.716	87.646
9	.549	4.578	92.225
10	.354	2.951	95.176
11	.303	2.525	97.701
12	.276	2.299	100.000

table-1.2

From the total variance explained we find the initial eigenvalue and also extraction and rotation sums of squared loadings. And on the base of eigenvalue approach, only factors with **eigenvalues greater than 1.0** are retained; the other factors are not included in the model.



**Graph-1.0**

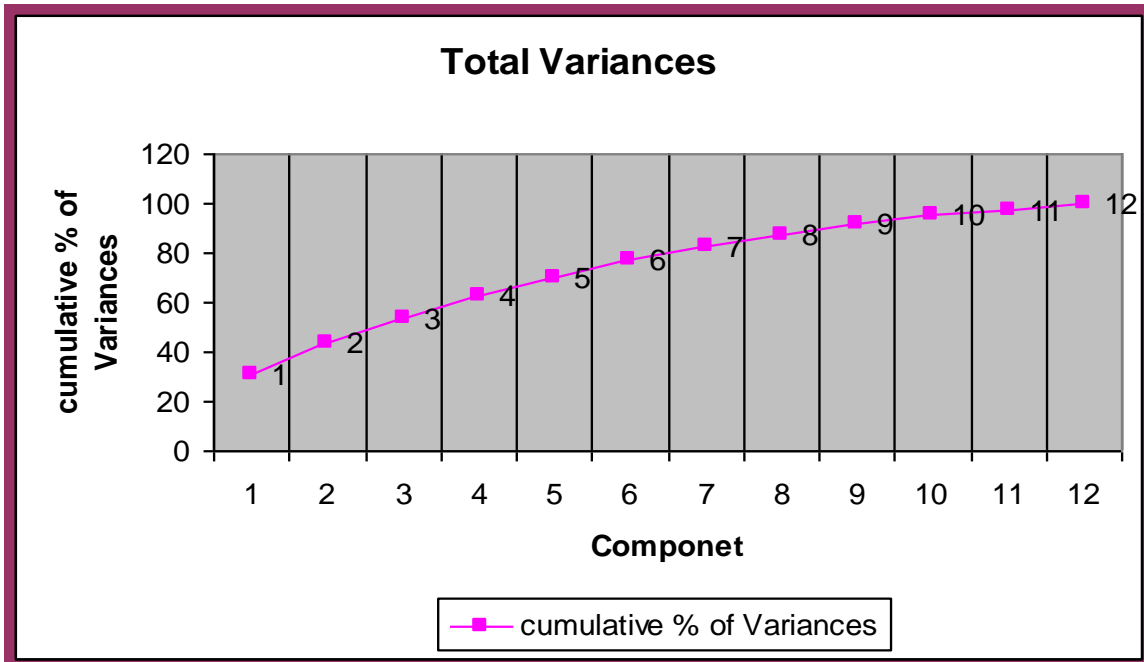
The table 1.2 shows that there are 4 factors that are having greater than 1.0 eigenvalue. So the number of factors should be 4 in this factor analysis. An eigenvalue represents the amount of variance associated with the factor.

### **✚ Determining Factors Based on Percentage of Variance**

Number of factors can be determined on the basis cumulative percentage of variance extracted by the factors reaches a satisfactory level. It is recommended that the factors extracted should account for at least **60** percent of (from appendix B) variance.

Component	Cumulative % of Variance
1	31.320
2	43.284
3	53.675
4	62.552
5	70.300
6	77.042
7	82.930
8	87.646
9	92.225
10	95.176
11	97.701
12	100.000

table1.3

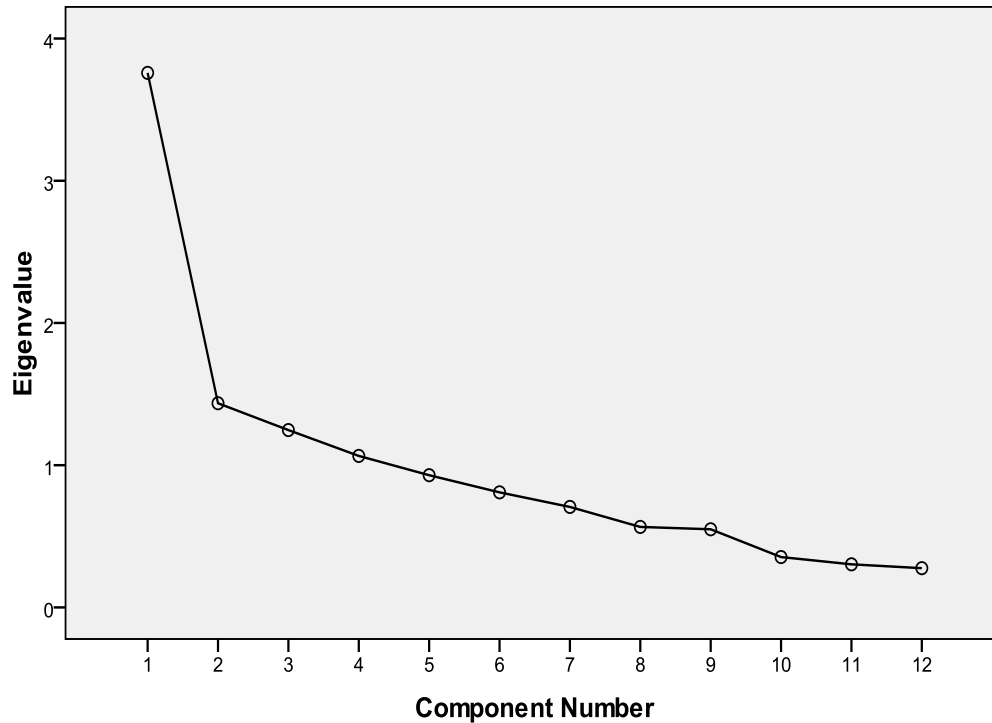


Graph-1.1

### Determining factor Based on Scree Plot

Generally, the number of factors determined by scree plot will be one or few more than that he determined by the eigenvalue creation. Here in this research according to the given scree plot (graph 1) from the 5<sup>th</sup> factor the distinct break between the steep slope of factors are started. And the number factors suggested by the scree plot is 5.

**Scree Plot**



**Graph-1.2**

## ✚ Categorizing Variable into Four Factors

**Rotated Component Matrix<sup>a</sup>**

	Component			
	1	2	3	4
V1	.186	.789	.028	-.010
V2	.748	.317	.108	.164
V3	.559	.372	.171	-.276
V4	.725	.276	-.046	-.359
V5	.167	-.331	-.317	.628
V6	.030	.186	.891	-.071
V7	.419	-.045	.296	.062
V8	.061	.838	.109	-.092
V9	.421	-.103	.445	-.259
V10	-.147	.049	.020	.876
V11	.585	.121	.574	-.052
V12	.682	-.022	.029	-.004

**Table-1.4**

From above Rotated Component Matrix in this research (table 1.4) the factor can be interpreted in terms of variables that load high on it. This interpretation are given bellow-

Factors	High coefficient of variables	Labeled
1	V2 (Showing Concern in Solving Problem) V3(Responding Quickly to Request) V4 (Employee's Willingness to Help) V7 (Suiting of Operating Hour) V11 (Attractiveness of Printed Material) V12 (Office Employees are friendly and have good manner)	<b>Reliability</b>



2	V1 (Performing Service without Error) V8( Easily Accessibility)	<b>Responsiveness</b>
3	V6(Employees are Knowledgeable Enough) V9(Showing Understanding of Specific Needs)	<b>Assurance</b>
4	V5(Employees are Kind and Polite) V10(Modern-Looking Technical Equipment)	<b>Tangible &amp; Empathy</b>

## T –test

### **Gap between expectation and perception:**

From the two sample mean test we find the differences between the expectation and perception of the customers towards their company. In considering all the variables, the null (Ho) hypothesis is there is no difference between the expectation and perception. In other words, the customers are fully satisfied with service quality of their company. It means there is no need for further improvement.

### **Ho: There is no difference between the expectation and perception.**

The result of two sample mean test of the research (Table 2.0, 2.1) are given in the following page-

## ✚ Measuring Service Quality in Factor 1(Reliability)

<b>T-Test</b>					
<b>Group Statistics</b>					
	Questioner Status	N	Mean	Std. Deviation	Std. Error Mean
Showing Concern in Solving Problem	expectation	50	5.9400	.31364	.04435
	perception	50	4.3400	1.15370	.16316
Responding Quickly to Request	expectation	50	5.0000	.00000	.00000
	perception	50	4.1800	1.02400	.14482
Employee's Willingness to Help	expectation	50	5.7800	.41845	.05918
	perception	50	4.7600	.84660	.11973
Suiting of Operating Hour	expectation	50	5.3600	.52528	.07429
	perception	50	5.0200	.71400	.10097
Attractiveness of Printed Material	expectation	50	5.9200	.34047	.04815
	perception	50	4.6600	1.08063	.15282
Company Employees are friendly and have good manner	expectation	50	5.9400	.23990	.03393
	perception	50	4.6600	.96065	.13586

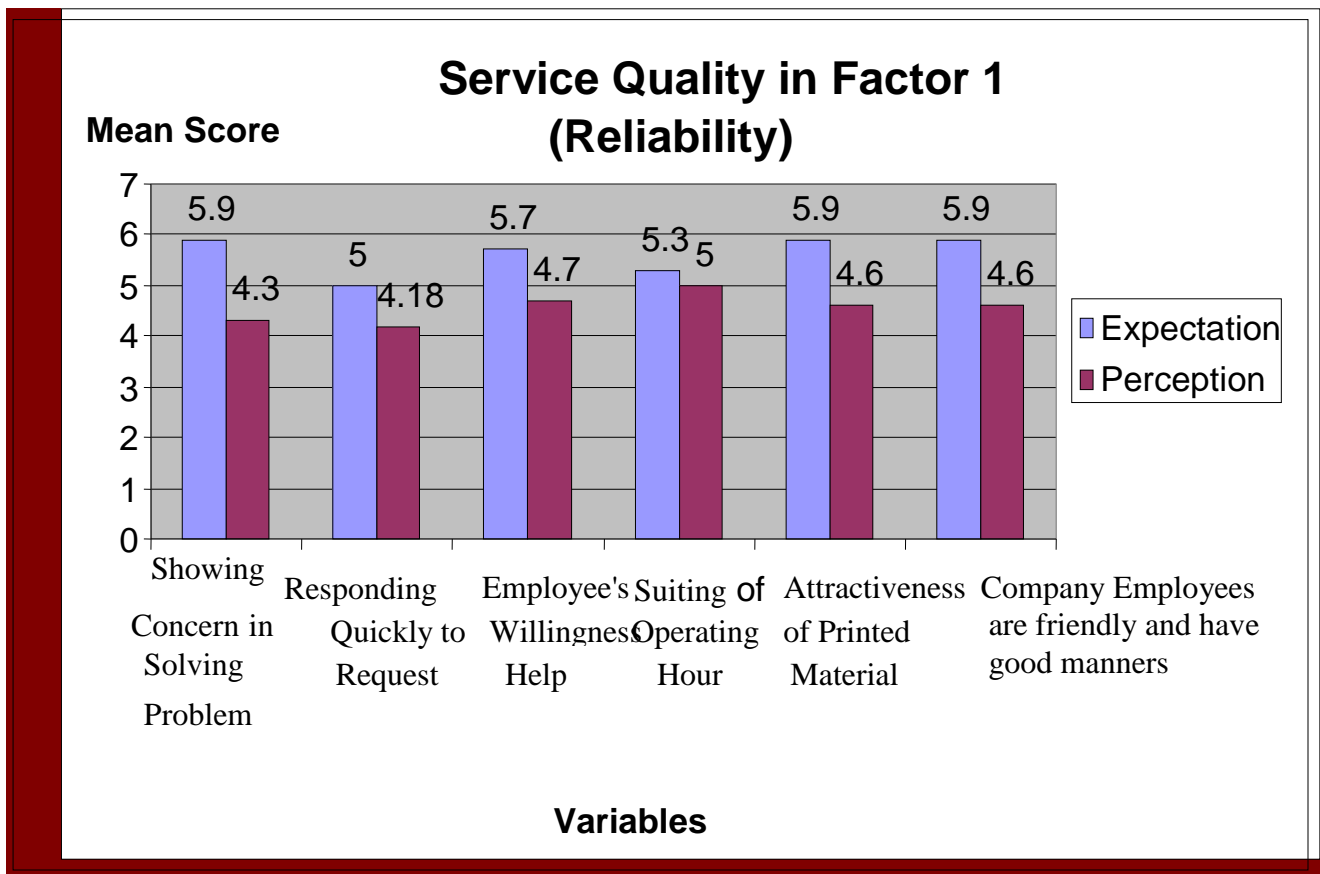
**Table-2.0**

### Identifying Customers' perception from T- test:

Variables	Acceptation or Rejection of Ho	Perception level
Showing Concern in Solving Problem	Ho is rejected	Expectation is higher than perception
Responding Quickly to Request	Ho is rejected	Expectation is higher than perception
Employee's Willingness to Help	Ho is rejected	Expectation is higher than perception
Suiting of Operating Hour	Ho is rejected	Expectation is higher than perception

Attractiveness of Printed Material	Ho is rejected	Expectation is higher than perception
Company Employees are friendly and have good manner	Ho is rejected	Expectation is higher than perception

**Table-2.1**



**Graph-1.3**

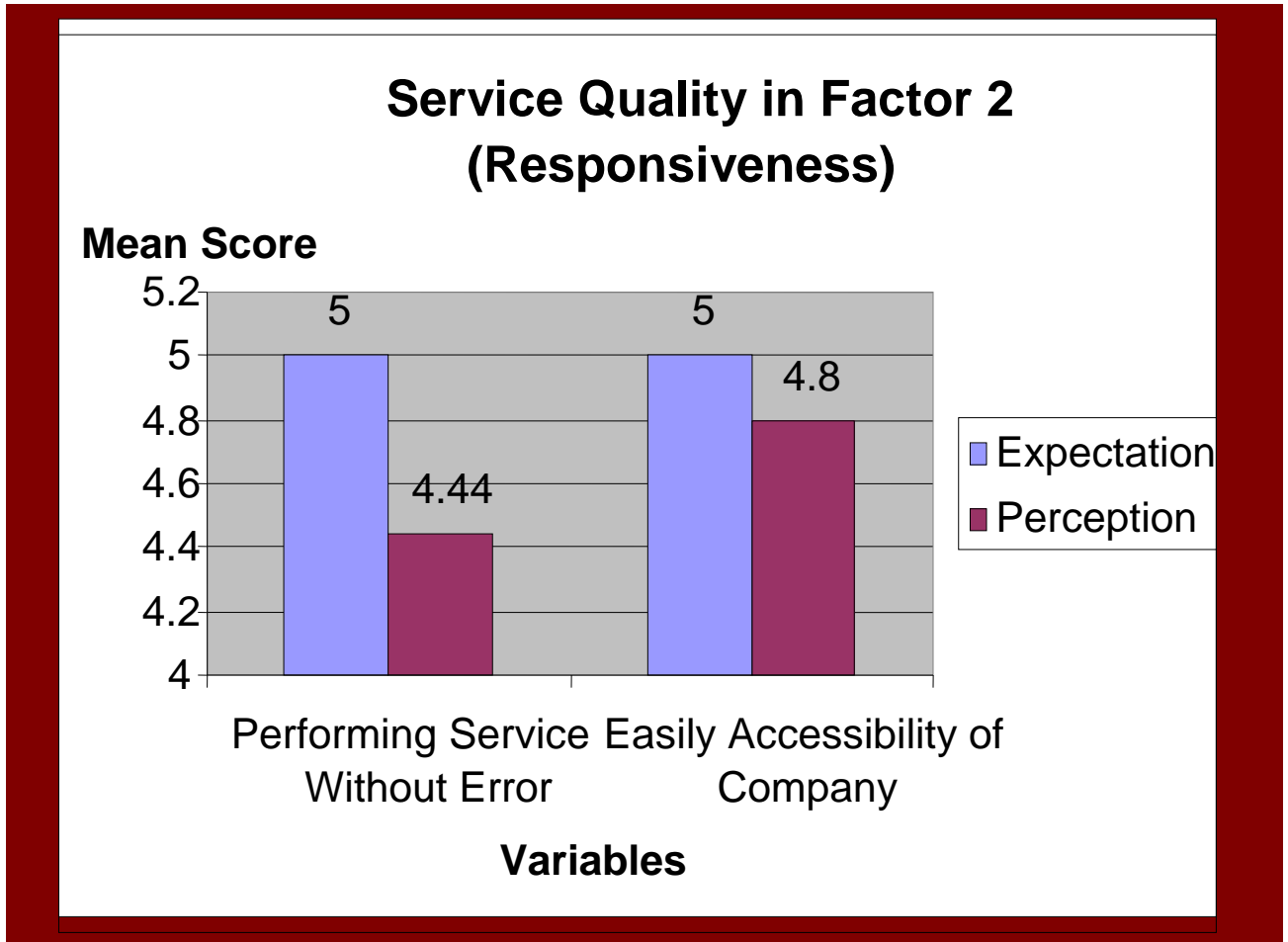
By depicting the mean score of all the variables under reliability factor we find in all the cases the null hypotheses rejected as the expectations scores higher than the perceptions.

So in reliability factor the company should work harder because the customers are less satisfied.

### Measuring Service Quality in Factor 2(Responsiveness)

<b>T-Test</b>					
<b>Group Statistics</b>					
	Questioner Status	N	Mean	Std. Deviation	Std. Error Mean
Performing Service without Error	expectation	50	5.0000	.00000	.00000
	perception	50	4.4400	1.12776	.15949
Easily Accessibility of Company	expectation	50	5.0000	.00000	.00000
	perception	50	4.8000	.98974	.13997

**Table-2.2**



**Graph-1.4**

**Identifying Customers' perception from T- test:**

Variables	Acceptation or Rejection of Ho	Perception level
Performing Service without Error	Ho is rejected	Expectation is higher than perception
Easily Accessibility of Company	Ho is rejected	Expectation is higher than perception

**Table-2.3**

In Measuring Responsiveness factor of Esco Lifesciences (Bangladesh) Pvt. Ltd. it is found that in both variable the company's performance is not satisfactory. Here the null

hypothesis is rejected in both variables so there is a gap between expectation and perception.

### Measuring Service Quality in Factor 3(Assurances)

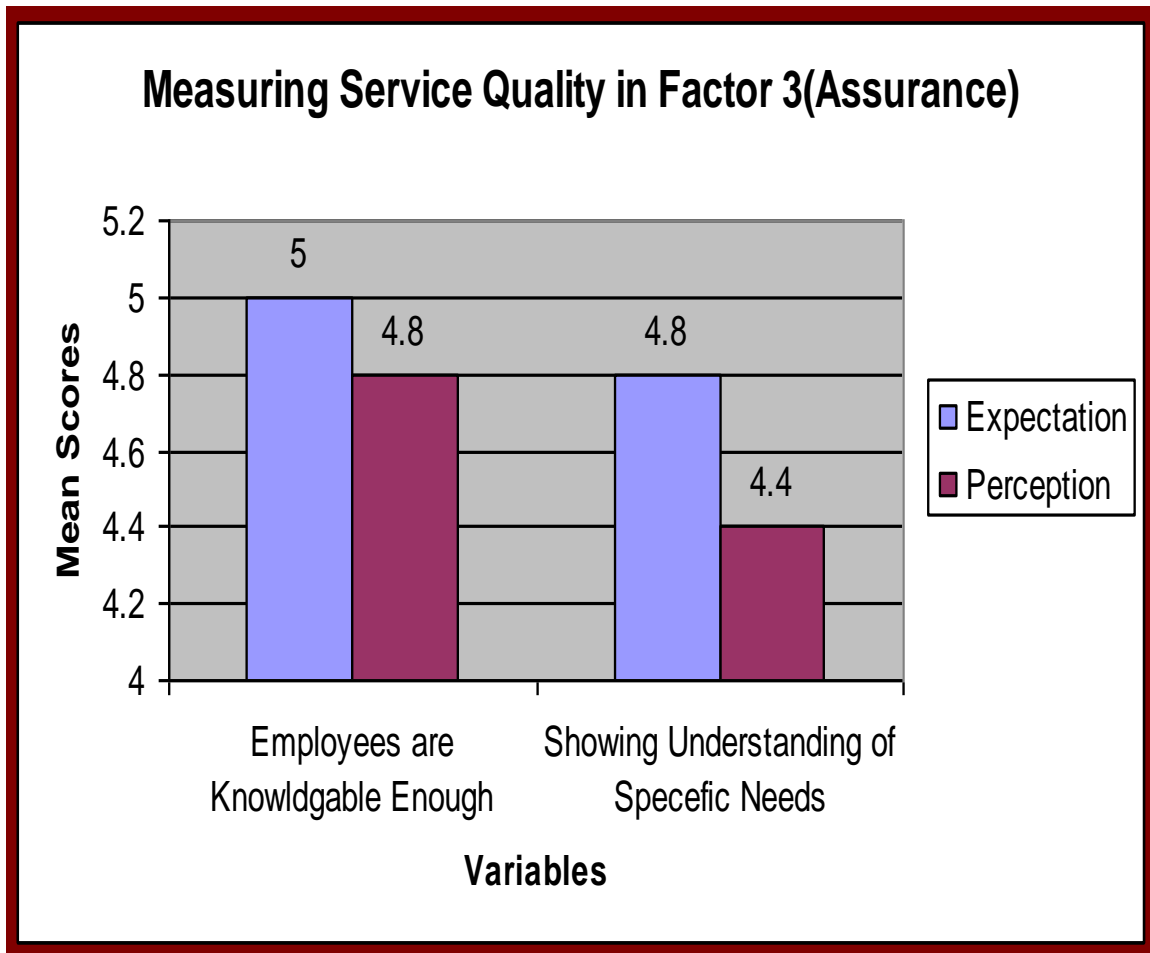
<b>T-Test</b>					
<b>Group Statistics</b>					
	Questioner Status	N	Mean	Std. Deviation	Std. Error Mean
Employees are Knowledgeable Enough	expectation	50	5.0000	.00000	.00000
	perception	50	4.8600	.85738	.12125
Showing Understanding of Specific Needs	expectation	50	4.8200	.38809	.05488
	perception	50	4.4000	.92582	.13093

**Table-2.4**

#### Identifying Customers' perception from T- test:

Variables	Acceptation or Rejection of Ho	Perception level
Performing Service without Error	Ho is rejected	Expectation is higher than perception
Easily Accessibility of Company	Ho is rejected	Expectation is higher than perception

**Table-2.5**



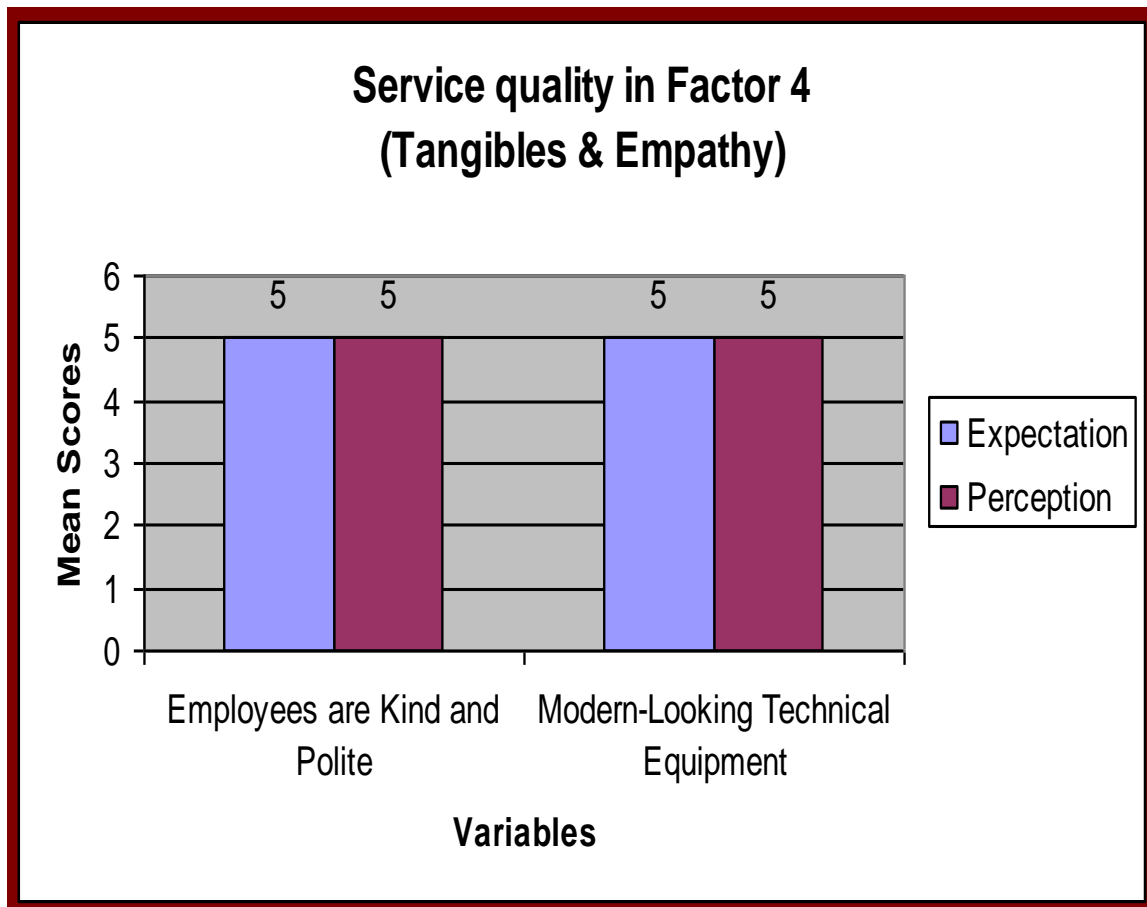
**Graph-1.5**

Customers of Esco Lifesciences (Bangladesh) Pvt. Ltd. have not found service quality up to mark in terms of assurance factor. Because the null hypothesis is rejected here as in both variable expectation values are higher than the perception values. So improvement is required.

**Measuring Service Quality in Factor 4(Tangibles& Empathy)**

<b>T-Test</b>					
<b>Group Statistics</b>					
	Questioner Status	N	Mean	Std. Deviation	Std. Error Mean
Employees are Kind and Polite	expectation	50	5.0000	.00000	.00000
	perception	50	5.0000	.83299	.11780
Modern-Looking Technical Equipment	expectation	50	5.0000	.00000	.00000
	perception	50	5.0800	.87691	.12401

**Table-2.6**



**Graph-1.6**



**Identifying Customers' perception from T- test:**

Variables	Acceptation or Rejection of Ho	Perception level
Employees are Kind and Polite	Ho is accepted	Expectation equal to perception
Modern-Looking Technical Equipment	Ho is accepted	Expectation equal to perception

**Table-2.5**

This factor tangible & empathy work as a very big advantage for Escro Lifesciences (Bangladesh) Pvt. Ltd. Here the null hypothesis is accepted. That means there is no difference between expectation and perception. No further improvement is required with these variables.

## Findings

- ✚ All the services of Esco Lifesciences (Bangladesh) Pvt. Ltd. can be categorized in to four factors. The four factors are- reliability, responsiveness, assurance and tangibles& empathy.
- ✚ Customers of Esco Lifesciences (Bangladesh) Pvt. Ltd. are pretty satisfied with their employees' nature. Customers find that the employees are kind and polite to them.
- ✚ Esco Lifesciences (Bangladesh) Pvt. Ltd.'s physical appearance is also a good advantage for the company. All the equipment that are company is using are modern enough to attract the customer.
- ✚ Company failed to impress customers in winning the reliability of the customer. In capturing the reliability company can focus on seven issues and the are- Showing Concern in Solving Problem, Responding Quickly to Request, Employee's Willingness to Help, Suiting of Operating Hour, Attractiveness of Printed Material, Company Employees Suitably Dresses and Neat.
- ✚ Customers of Esco Lifesciences (Bangladesh) Pvt. Ltd. are dissatisfied with responsiveness of the customers. And to omit this dissatisfaction employee should practice their service providing without minimum error. And also if company can accessible to customer easily then this advantage can also minimize.
- ✚ The customers feel that the employees are not very keen to understand the customers need. Customers find difficulty to make them understand their proper requirements.

## Limitation

- ✚ The major limitation of the study is in my research I have used convenience sampling technique, so the potential sources selections are biased.
  
- ✚ **Confidentiality of data** was another important barrier that was faced during the conduct of this study. Every organization has their own secrecy that in not revealed to others. While collecting data on Esco Lifesciences (Bangladesh) Pvt. Ltd., personnel did not disclose enough information for the sake of confidentiality of the organization.
  
- ✚ **Rush hours and business** was another reason that acts as an obstacle while gathering data.
  
- ✚ The findings of the survey are based on customers' response over the phone or via email; so it was not 100% accurate.

## Recommendation

Esco Lifesciences (Bangladesh) Pvt. Ltd. always believes in customer relationship and the customer always expect much higher than to the others. The tagline of the company is, “Building bridges to the world”. So it is very important for the company that they should seriously focus on the customer. Though it is no doubt company is providing its services with the prime concerning to the customer but still the manpower it has need some trainings to understand their customers' psychology. Company can conduct some useful research in several times to identify their customers' satisfaction level. Company can also ask their own customer's to give them some suggestions so the customers can have better service and it will also make the customer feel important.

## Conclusion

It was a great pleasure for me to make a research in “Esco Lifesciences (Bangladesh) Pvt. Ltd.”. Since without practical exposure, it may not be possible to compare the theory what one has learnt with practical application. And it is well established that theory without practice is blind. The main focus of the report was identifying the satisfaction level towards Esco Lifesciences (Bangladesh) Pvt. Ltd of its customer.

Out of the above discussion a conclusion can be drawn after saying that, the present customer dealing procedure is quite well but as the customers of the company expect a lot from the company, company have to compete with itself. It would be great opportunity of the company if it focuses on some factors like responsiveness, assurance and reliability.

# Appendix

## A. Questionnaire

### Service Quality Survey

---

If you want to be a part of our survey and help us to serve you better way, then please write down your name and company name and provide your valuable opinion with the following questions-

Name:.....

Name of the Institute:.....

#### Section I

• I experienced problems with this company ...  YES  NO

• My problem resolved satisfactorily.....  YES  NO

Please circle the most appropriate answer.

Gender:  Female  Male

Age Range:  18-25  26-35  36-45

46-55  55-65  66 or older

Occupation:  Service Holder  Businessperson

Students  Others

Education:  Bachelor Degree  Masters Degree

College  H.S.C or bellow

**Section II:**

- Please indicate the extent to which you agree or disagree with the following statements about the service you received from the company staff during your transaction.
- If you strongly disagree, please circle the number 1.
- If you strongly agree, please circle the number 6.
- If your feelings are not strong, please circle one of the numbers in the middle numbers 2, 3, 4, or 5

		Expectation						Perception					
Section I : SERVQUAL-Expectations/ Perception		Strongly Disagree			Strongly Agree			Strongly Disagree			Strongly Agree		
1	The Company performs its services without errors	1	2	3	4	5	6	1	2	3	4	5	6
2	Company employees show sincere concern in solving my problems, related to company business operations.	1	2	3	4	5	6	1	2	3	4	5	6
3	Company employees quickly respond to my requests	1	2	3	4	5	6	1	2	3	4	5	6
4	Company employees are always willing to help	1	2	3	4	5	6	1	2	3	4	5	6
5	Company employees are kind and polite	1	2	3	4	5	6	1	2	3	4	5	6
6	Company employees are knowledgeable enough to reliably respond to my questions	1	2	3	4	5	6	1	2	3	4	5	6
7	The Company operating hours suits my needs.	1	2	3	4	5	6	1	2	3	4	5	6
8	The Company is easily accessible (parking, lift, access for disabled person etc.)..	1	2	3	4	5	6	1	2	3	4	5	6
9	Company employees show understanding to my specific needs	1	2	3	4	5	6	1	2	3	4	5	6
10	The Company has modern-looking technical equipment.	1	2	3	4	5	6	1	2	3	4	5	6
11	Printed materials (forms, brochures, monthly statements,	1	2	3	4	5	6	1	2	3	4	5	6

	company cards, etc) look Attractive												
12	Company employees are friendly and have good manners	1	2	3	4	5	6	1	2	3	4	5	6

**Thank you for your cooperation!**



## B. SPSS Output

### Factor Analysis

Correlation Matrix

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
Correlation V1	1.000	.236	.412	.308	-.184	.179	.136	.464	.066	-.036	.214	.144
V2	.236	1.000	.395	.551	.000	.157	.300	.363	.288	.020	.494	.392
V3	.412	.395	1.000	.480	-.166	.243	.165	.292	.330	-.263	.513	.299
V4	.308	.551	.480	1.000	-.205	.097	.221	.303	.417	-.294	.404	.380
V5	-.184	.000	-.166	-.205	1.000	-.284	-.053	-.269	-.070	.335	-.186	.000
V6	.179	.157	.243	.097	-.284	1.000	.163	.267	.345	-.100	.458	.160
V7	.136	.300	.165	.221	-.053	.163	1.000	.020	.115	-.095	.314	.170
V8	.464	.363	.292	.303	-.269	.267	.020	1.000	.080	-.107	.168	.030
V9	.066	.288	.330	.417	-.070	.345	.115	.080	1.000	-.187	.341	.126
V10	-.036	.020	-.263	-.294	.335	-.100	-.095	-.107	-.187	1.000	-.131	-.107
V11	.214	.494	.513	.404	-.186	.458	.314	.168	.341	-.131	1.000	.380
V12	.144	.392	.299	.380	.000	.160	.170	.030	.126	-.107	.380	1.000

table-B-1.0

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.720
Bartlett's Test of Sphericity Approx. Chi-Square	315.511
Df	66
Sig.	.000

Table-B-1.1

**Communalities**

	Initial	Extraction
V1	1.000	.658
V2	1.000	.698
V3	1.000	.556
V4	1.000	.732
V5	1.000	.632
V6	1.000	.835
V7	1.000	.269
V8	1.000	.726
V9	1.000	.452
V10	1.000	.792
V11	1.000	.689
V12	1.000	.467

Extraction Method: Principal  
Component Analysis.

**Table- B-1.2**

**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	3.758	31.320	31.320	3.758	31.320	31.320	2.646	22.053
2	1.436	11.963	43.284	1.436	11.963	43.284	1.813	15.110	37.163
3	1.247	10.392	53.675	1.247	10.392	53.675	1.566	13.049	50.212
4	1.065	8.877	62.552	1.065	8.877	62.552	1.481	12.340	62.552
5	.930	7.747	70.300						
6	.809	6.742	77.042						
7	.707	5.889	82.930						
8	.566	4.716	87.646						
9	.549	4.578	92.225						
10	.354	2.951	95.176						
11	.303	2.525	97.701						
12	.276	2.299	100.000						

Extraction Method: Principal Component Analysis.

**table- B- 1.3**

**Component Matrix<sup>a</sup>**

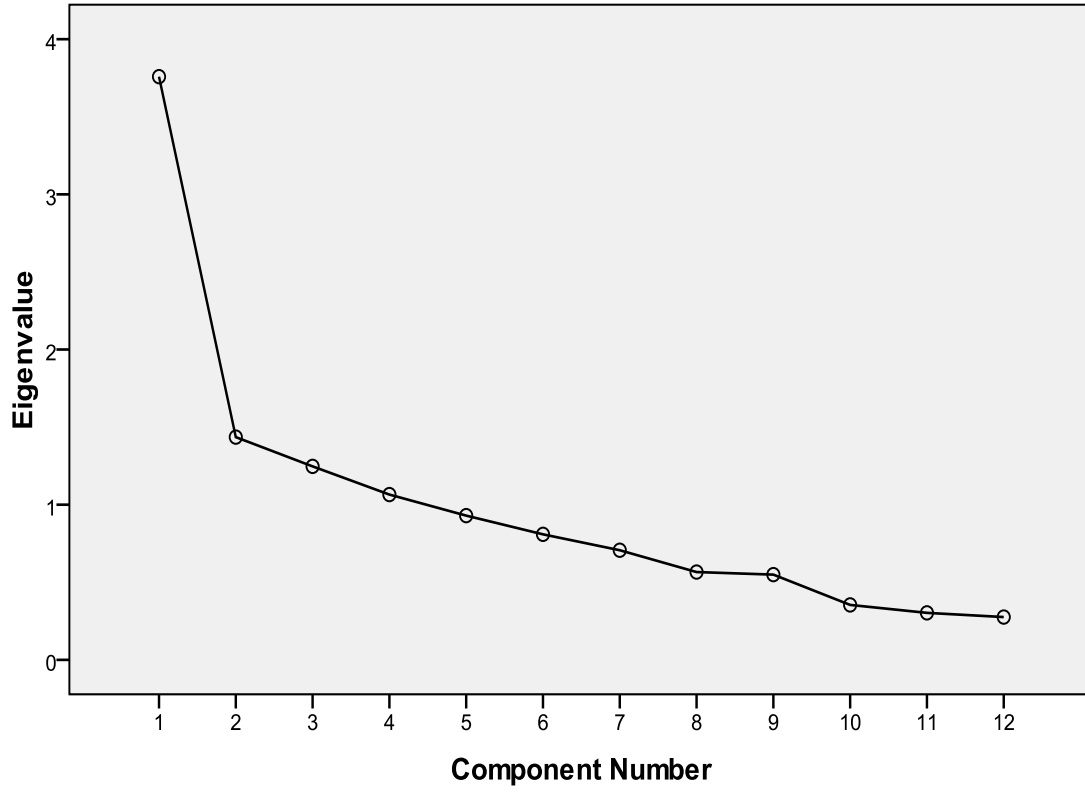
	Component			
	1	2	3	4
V1	.509	-.289	.561	.003
V2	.688	.388	.271	-.028
V3	.730	-.024	.047	-.145
V4	.741	.104	.015	-.415
V5	-.344	.680	.226	.000
V6	.498	-.227	-.255	.686
V7	.391	.282	-.121	.148
V8	.498	-.449	.521	.065
V9	.522	.103	-.399	.102
V10	-.332	.401	.512	.508
V11	.737	.199	-.174	.276
V12	.502	.428	-.038	-.175

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

**Table- B- 1.4**

### Scree Plot



Graph-B-1.0

**Rotated Component Matrix<sup>a</sup>**

	Component			
	1	2	3	4
V1	.186	.789	.028	-.010
V2	.748	.317	.108	.164
V3	.559	.372	.171	-.276
V4	.725	.276	-.046	-.359
V5	.167	-.331	-.317	.628
V6	.030	.186	.891	-.071
V7	.419	-.045	.296	.062
V8	.061	.838	.109	-.092
V9	.421	-.103	.445	-.259
V10	-.147	.049	.020	.876
V11	.585	.121	.574	-.052
V12	.682	-.022	.029	-.004

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

**Table- B-1.5**

a. Rotation converged in 7 iterations.

**Component Transformation Matrix**

Component	1	2	3	4
1	.731	.455	.416	-.293
2	.619	-.500	-.124	.593
3	-.012	.735	-.396	.550
4	-.287	.049	.809	.510

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

**Table- B-1.6**

**Reproduced Correlations**

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	
Reproduced Correlation	V1	.658 <sup>a</sup>	.390	.405	.355	-.245	.178	.050	.676	.012	.004	.221	.110
	V2	.390	.698 <sup>a</sup>	.509	.566	.089	.165	.341	.308	.287	.052	.529	.506
	V3	.405	.509	.556 <sup>a</sup>	.599	-.257	.257	.251	.389	.345	-.302	.485	.380
	V4	.355	.566	.599	.732 <sup>a</sup>	-.181	.057	.256	.303	.349	-.408	.450	.489
	V5	-.245	.089	-.257	-.181	.632 <sup>a</sup>	-.383	.030	-.359	-.199	.503	-.157	.110
	V6	.178	.165	.257	.057	-.383	.835 <sup>a</sup>	.263	.261	.408	-.039	.555	.042
	V7	.050	.341	.251	.256	.030	.263	.269 <sup>a</sup>	.014	.296	-.004	.406	.295
	V8	.676	.308	.389	.303	-.359	.261	.014	.726 <sup>a</sup>	.012	-.046	.205	.027
	V9	.012	.287	.345	.349	-.199	.408	.296	.012	.452 <sup>a</sup>	-.285	.502	.303
	V10	.004	.052	-.302	-.408	.503	-.039	-.004	-.046	-.285	.792 <sup>a</sup>	-.114	-.104
	V11	.221	.529	.485	.450	-.157	.555	.406	.205	.502	-.114	.689 <sup>a</sup>	.413
	V12	.110	.506	.380	.489	.110	.042	.295	.027	.303	-.104	.413	.467 <sup>a</sup>
Residual <sup>b</sup>	V1		-.154	.008	-.046	.061	.001	.086	-.212	.054	-.040	-.007	.034
	V2	-.154		-.115	-.015	-.089	-.008	-.041	.055	.001	-.031	-.035	-.114
	V3	.008	-.115		-.120	.091	-.014	-.086	-.097	-.014	.039	.028	-.080
	V4	-.046	-.015	-.120		-.024	.040	-.035	.000	.068	.114	-.046	-.109
	V5	.061	-.089	.091	-.024		.099	-.083	.090	.129	-.169	-.029	-.110
	V6	.001	-.008	-.014	.040	.099		-.100	.006	-.064	-.061	-.097	.117
	V7	.086	-.041	-.086	-.035	-.083	-.100		.006	-.182	-.091	-.092	-.125
	V8	-.212	.055	-.097	.000	.090	.006	.006		.068	-.061	-.037	.004
	V9	.054	.001	-.014	.068	.129	-.064	-.182	.068		.098	-.162	-.177
	V10	-.040	-.031	.039	.114	-.169	-.061	-.091	-.061	.098		-.017	-.003
	V11	-.007	-.035	.028	-.046	-.029	-.097	-.092	-.037	-.162	-.017		-.033
	V12	.034	-.114	-.080	-.109	-.110	.117	-.125	.004	-.177	-.003	-.033	

Extraction Method: Principal Component Analysis.

a. Reproduced communalities

b. Residuals are computed between observed and reproduced correlations. There are 37 (56.0%) non redundant residuals with absolute values greater than 0.05.

**Table- B-1.7**

**Component Score Coefficient Matrix**

	Component			
	1	2	3	4
V1	-.032	.494	-.094	.090
V2	.306	.107	-.065	.213
V3	.170	.118	-.042	-.116
V4	.300	.043	-.247	-.207
V5	.224	-.146	-.168	.407
V6	-.183	.020	.677	.083
V7	.159	-.116	.170	.104
V8	-.119	.527	-.022	.037
V9	.122	-.203	.253	-.125
V10	-.033	.145	.152	.661
V11	.157	-.070	.329	.080
V12	.330	-.119	-.103	.037

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

**Table- B-1.8**

**Component Score Covariance Matrix**

Component	1	2	3	4
1	1.000	.000	.000	.000
2	.000	1.000	.000	.000
3	.000	.000	1.000	.000
4	.000	.000	.000	1.000

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

**Table- B- 1.9**



## T-Test

**Group Statistics**

	Questioner Status	N	Mean	Std. Deviation	Std. Error Mean
Performing Service without Error	Expectation	50	5.0000	.00000	.00000
	Perception	50	4.4400	1.12776	.15949
Showing Concern in Solving Problem	Expectation	50	5.9400	.31364	.04435
	Perception	50	4.3400	1.15370	.16316
Responding Quickly to Request	Expectation	50	5.0000	.00000	.00000
	Perception	50	4.1800	1.02400	.14482
Employee's Willingness to Help	Expectation	50	5.7800	.41845	.05918
	Perception	50	4.7600	.84660	.11973
Employees are Kind and Polite	Expectation	50	5.0000	.00000	.00000
	Perception	50	5.0000	.83299	.11780
Employees are Knowledgeable Enough	Expectation	50	5.0000	.00000	.00000
	Perception	50	4.8600	.85738	.12125
Suiting of Operating Hour	Expectation	50	5.3600	.52528	.07429
	Perception	50	5.0200	.71400	.10097
Easily Accessibility of Company	Expectation	50	5.0000	.00000	.00000
	Perception	50	4.8000	.98974	.13997
Showing Understanding of Specific Needs	Expectation	50	4.8200	.38809	.05488
	Perception	50	4.4000	.92582	.13093
Modern-Looking Technical Equipment	Expectation	50	5.0000	.00000	.00000
	Perception	50	5.0800	.87691	.12401
Attractiveness of Printed Material	Expectation	50	5.9200	.34047	.04815
	Perception	50	4.6600	1.08063	.15282
Company Employees are friendly and have good manners	Expectation	50	5.9400	.23990	.03393
	Perception	50	4.6600	.96065	.13586

**Table B- 2.0**

Independent Samples Test										
		t-test for Equality of Means								
		Levene's Test for Equality of Variances								95% Confidence Interval of the Difference
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Performing Service without Error	Equal variances assumed	103.684	.000	3.511	98	.001	.56000	.15949	.24350	.87650
	Equal variances not assumed			3.511	49.000	.001	.56000	.15949	.23949	.88051
Showing Concern in Solving Problem	Equal variances assumed	60.627	.000	9.463	98	.000	1.60000	.16908	1.26447	1.93553
	Equal variances not assumed			9.463	56.203	.000	1.60000	.16908	1.26132	1.93868
Responding Quickly to Request	Equal variances assumed	108.692	.000	5.662	98	.000	.82000	.14482	.53262	1.10738
	Equal variances not assumed			5.662	49.000	.000	.82000	.14482	.52898	1.11102
Employee's Willingness to Help	Equal variances assumed	20.594	.000	7.637	98	.000	1.02000	.13355	.75497	1.28503
	Equal variances not assumed			7.637	71.593	.000	1.02000	.13355	.75374	1.28626
Employees are Kind and Polite	Equal variances assumed	74.225	.000	.000	98	1.000	.00000	.11780	-.23378	.23378

	Equal variances not assumed			.000	49.000	1.000	.00000	.11780	-.23673	.23673
Employees are Knowledgeable Enough	Equal variances assumed	103.469	.000	1.155	98	.251	.14000	.12125	-.10062	.38062
	Equal variances not assumed			1.155	49.000	.254	.14000	.12125	-.10366	.38366
Suiting of Operating Hour	Equal variances assumed	.096	.757	2.712	98	.008	.34000	.12536	.09123	.58877
	Equal variances not assumed			2.712	90.024	.008	.34000	.12536	.09096	.58904
Easily Accessibility of Company	Equal variances assumed	70.241	.000	1.429	98	.156	.20000	.13997	-.07777	.47777
	Equal variances not assumed			1.429	49.000	.159	.20000	.13997	-.08128	.48128
Showing Understanding of Specific Needs	Equal variances assumed	44.268	.000	2.958	98	.004	.42000	.14197	.13827	.70173
	Equal variances not assumed			2.958	65.704	.004	.42000	.14197	.13653	.70347
Modern-Looking Technical Equipment	Equal variances assumed	52.943	.000	-.645	98	.520	-.08000	.12401	-.32610	.16610
	Equal variances not assumed			-.645	49.000	.522	-.08000	.12401	-.32922	.16922
Attractiveness of Printed Material	Equal variances assumed	39.582	.000	7.864	98	.000	1.26000	.16023	.94203	1.57797

	Equal variances not assumed			7.864	58.633	.000	1.26000	.16023	.93934	1.58066
Company Employees are friendly and have good manners	Equal variances assumed	44.596	.000	9.141	98	.000	1.28000	.14003	1.00212	1.55788
	Equal variances not assumed			9.141	55.088	.000	1.28000	.14003	.99939	1.56061

**Table- 2.1**

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