



**An Investigation into the determinants of  
Service Quality and Customer Satisfaction  
with Application Software development  
companies in Bangladesh**

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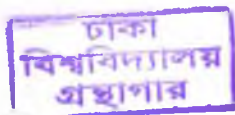
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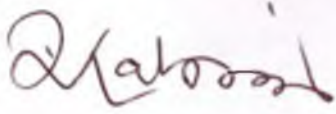
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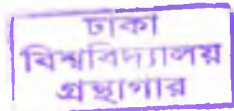
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List of Abbreviations

<b><u>Acronyms</u></b>	<b><u>Abbreviation</u></b>
ADP	Annual Development Program
BCC	Bangladesh Computer Council
BCS	Bangladesh Computer Samity
BPO	Business Process Outsourcing (BPO)
BASIS	Bangladesh Association of Software & Information Services
ERP	Enterprise Resource Planning
ESQ	Electronic service quality
FGD	Focus Group Discussion
HR	Human Resources
ICT	Information & Communication Technology
POS	Point of Sales
IPR	Intellectual Property Rights
ICT	Information & Communication Technology
IT	Information Technology
ITES	IT Enable Services
ISP	Internet Service Provider
ISPAB	Internet Service Provider Association of Bangladesh
MNC	Multinational Companies
SPSS	Statistical Package for Social Science
SQ	Service Quality
S-SQ	Software Service Quality
SICT	Support to ICT task force
WTO	World Trade Organization
VAT	Value Added Tax
VOIT	Voice Over Internet Protocol

ঢাকা  
বিশ্ববিদ্যালয়  
প্রশাসন

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I have tried my level best to produce this dissertation as per standard required by the IBA, University of Dhaka. However, the undersigned researcher takes the sole responsibility of errors or omissions that remain in the paper.



**Mohammad Rabiul Kabir**

Dated:

## Abstract

**Purpose** - Over the past years, organizations have made significant investment in application software. The recent trends in the industry indicate that the industry has reached in a 'take-off' stage and in the coming years in position for high growth. Software products and services developed and maintained by the software companies are mostly back-office automation like accounting/finance, ERP (Enterprise Resource Planning), Human Resource (HR), inventory, billing etc. The major client/buyer of local software is MNCs, textile & garments sector, financial institutions, and pharmaceutical & healthcare companies. To deliver superior service, developer must understand how user perceive and evaluate software service. This study identifies ways to measure user's perception of service quality with application software in Bangladesh.

**Design/Methodology/approach** - This research employed both secondary & qualitative study to identify the attributes of software service quality. Through these methods a research model with hypothesis is developed. This research was limited in finding user perception of service quality of HR Software in Dhaka city. The survey includes user of HR software in different organization such as software in different organization such as Garments & Textile, Pharmaceutical & Healthcare, Financial Institution, MNC, and Group of companies in Bangladesh. The study has collected data from the users of HR software through an executive Interview with self-administered structured questionnaire. The sampling techniques used for this study was cluster sampling with a sample size of 225 respondents.

**Findings** - The major findings of the study indicate that the factor underlying the use of HR software are Support Service; Compatibility; Ease of use; User participation; Content; Format; Reliability and Price. The result shows that a significant linear relationship exists between software service quality dimensions and customer satisfaction. Finally, the findings also reveal that that factors such as support service, ease of use, reliability, compatibility, format and content have strong influence over user satisfaction.

**Originality/Value** - The study intended to explore the much unexplained area of user perception towards application (HR) software and user satisfaction. The measurement of service quality can provide specific data that can be used in quality management; hence, software vendors would be able to monitor and maintain quality service. Assessing service quality and better understanding how various dimensions affect overall service quality would enable vendors to efficiently design the service delivery process

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# **Chapter One (1): Introduction**

## **1.0 Introduction:**

*The background of the selected area is introduced in the first chapter. Then the problem area is discussed to provide the deeper understanding about the research area for reader. The problem discussions end with a research problem and a specific research question.*

## **1.1 Background:**

The importance of information technology and the role it can play in the socio-economic development of nation cannot be overemphasized. Information Technology, which has evolved from the merger of computers, telecommunications and office automation technologies, is one of the most rapidly growing industries in the world. The world has witnessed phenomenal growth in the information technology over the last two decades, and the countries which made a conscious decision to take advantage of such growth, have made unprecedented progress. Examples are in abundance; India, Sri Lanka, Thailand, Malaysia, the Philippines are successful countries in our region.

Information Communication & Technology (ICT) is the combination of all activities relating to collecting, processing, storing using and transmitting data and deriving information through the use of computers and communication networks. The major computer services are of the following types: Systems Software, Application Software, Data Communication, Data processing, and Multimedia products.

### **1.1.1 ICT Industry and its Current status in Bangladesh**

The ICT industry in Bangladesh is rapidly growing and has come a long way in the last couple of decades. During the late 90's, Bangladesh has seen an increasing growth of the ICT industry. Initially, the favorable tax policy of the government of Bangladesh in 1998 accompanied by the global affordability of

personal computers, have had tremendous impact on the usage of computer. As a result, the country experienced a growth of PC users by 32% in the year 2000 as compared to 1999. Even the Internet, introduced in 1996, gained huge popularity and users could avail the Internet at high bandwidth at reasonable prices. From then on, in accordance with the global trends, both private and public sectors in Bangladesh caught up with effective utilization of information technology. The formation of a substantial number of software development companies is a good indication of this development. Recently, widespread telecommunication (especially, the cellular telephony) outreach all over the country has given the ICT industry in the country an added impetus to move forward. Furthermore, The High-tech Park, with 265 acres of land, has already been handed over to the project by the ministry of land. This project will be established to promote knowledge-based and technology intensive industries with main focus on ICT.

The Government's policy on ICT is very positive. Although there have been government initiatives for some 20 years, real progress began in 1997 when the Government appointed a task force to report on the development of ICT and its prospects in Bangladesh. Popularly known as the JRC Committee, it submitted some 45 recommendations to the Government, who responded by declaring ICT a "thrust sector". In January 2001 the Government set up a 15-member IT Task Force. Headed by the Prime Minister, the Task Force's stated aim was to harness and utilize the immense potentialities of IT for the overall welfare of Bangladesh. In October 2002 the Government of Bangladesh issued its National Information and Communication Technology Policy (ICTP) stating the importance of this sector. The Government has set up the ICT policy with the following objectives:

- Promote and facilitate use of ICT in all sectors of the economy for transparency, good governance and efficiency improvement.
- Develop a large pool of world-class ICT professionals to meet the needs of local and global markets.

- Promote use of ICT by providing special allocations for ICT project implementation in the public sector. Train the decision makers in ICT use and promote an ICT culture.
- Provide effective incentives for development of ICT sector to both local and foreign entrepreneurs.
- Develop an efficient ICT infrastructure that provides open access to international and national networks.
- Establish legislative and regulatory framework for ICT issues like IPR, data security and protection, digital signature, e-Commerce, ICT education etc. as well as to ensure quality ICT education provided by different private organizations.
- Set up national databases that are reliable and easily accessible to all the people of the country.
- Set up an ICT organization at the highest level to continuously promote and foster ICT Industry.
- Enact Laws and Regulations for uninterrupted growth of ICT, in conformity with World Trade Organization (WTO) stipulations

With this document the government voiced the intention to utilize the ICT sector as a tool to increase the “socioeconomic” development of the country. Looking across the border to India and its \$17 billion share of the global offshore BPO (Business Process Outsourcing) market<sup>1</sup> and targeted employment of 4 million in 2008<sup>2</sup>, it is easy to see the attraction and follow the same line of thinking. However, entering the ICT sector and ensuring

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<sup>1</sup> From *NASSCOM-neoIT Study* as presented in “Six Things that Make the ITeS-BPO Industry Nervous”, Kasbekar, Chirag, February 2005, [www.domain-b.com](http://www.domain-b.com)

<sup>2</sup> “*Outsourcing and IT in India*”, *The Economist*, 23 April 2005, p.67



success, sustainability, and widespread benefit is far more complex than a simple declaration of intention. According to the “The Global Information Technology Report 2004-2005” which was compiled under the auspices of World Economic Forum, Bangladesh has been ranked 100 out of 104 countries in the “Networked Readiness Index Ranking”. In 2003, Bangladesh was ranked 93 out of 102, and in 2002, we were ranked 77 out of 82. What does this tell us? Have we fallen in ranking from 77 to 100 since 2002. Not really! The picture is worse – we are not falling down in ranking but other countries have been added to the ranking matrix and they are bypassing us as they become a part of this mosaic. This latest of rankings paints a gloomy picture for Bangladesh and confirms yet again that in the new millennium, the ICT driven world moves at a fast clip, and standing still means that one is going backwards.

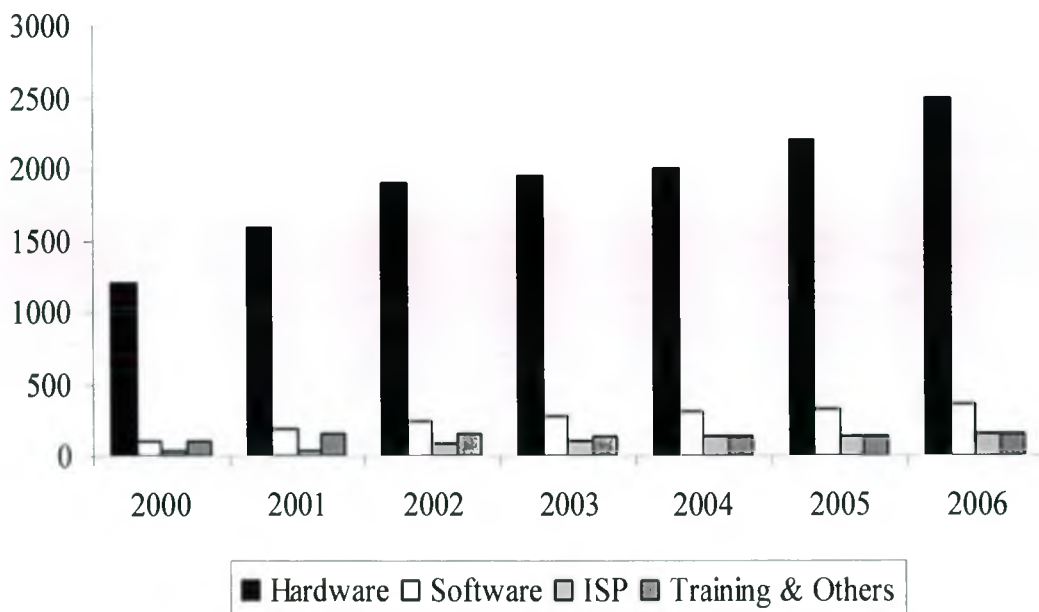
The core strengths of Bangladesh ICT sector is the people. An educated, trainable and young workforce working in this sector possesses the required skill sets to compete in the global scenario. A BCS source revealed that in 2006, the number of IT professionals in Bangladesh was 25,200, which was 12.50 per cent higher than in 2005. The majority of this work force excels in pure technical tasks such as programming and networking. In fact, a survey conducted by BASIS on 1,100 employees of 55 IT companies revealed that, respectively, 42 and 14 per cent of the respondents were engaged in programming and networking jobs. However, the same survey states that, the number of ‘non-code’ personnel in the IT companies is rising at fast pace. The success of the IT industry has created focal points for entrepreneurs and foreign investors. The government of Bangladesh has declared the ICT sector as ‘thrust’ sector. The creation of a separate Ministry for ICT (Ministry of Science and Information and Technology), formulating favorable laws and initiating government IT projects are encouraging steps for the local/international investors in the Bangladesh ICT industry. In addition to the policy development, the government is keeping close interactions with

various industry associations. BASIS, BCS, BCC and ISPAB are some of the apex bodies working for the improvement of the ICT industry in Bangladesh.

### 1.1.2 Number of Enterprises:

A report by Bangladesh Computer Samity (BCS) provides an overview of the composition of ICT enterprises in Bangladesh. However, the report is focused on software, hardware, Internet services and training and other segments and the statistics of the telecommunication enterprises are not included in that report.

**Fig 1: Number of ICT Enterprises in Bangladesh**



(Source: BASIS)

As seen from the figure, the hardware segment dominates the industry with 2500 enterprises in 2006. In accordance with the growth in hardware demand, this segment has shown a steady growth of about 11 per cent per year from 2000 to 2006. The software segment grew at good rates in earlier years but has slowed down relatively in the recent years. At present, there are about

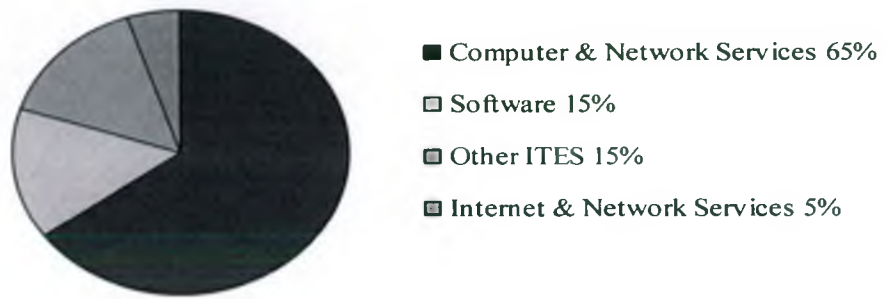
350 software development firms in Bangladesh. The Internet Service Provider (ISP) segment is in tune with the growth of software segment. The recent introduction of advanced technological backbone in the ISP shows a decent growth of the ISP segments (presently 150 ISPs are operating in the country). There are 150 training institutes and auxiliary ICT support companies in the country.

### 1.1.3 Size of enterprises (Industry Volume):

A report included in the “Software Product Catalogue (2006)” published by the Bangladesh Association of Software and Information Services (BASIS) states that the total ICT market size in Bangladesh is USD 160 million. The approximate proportion of the ICT industry among different segments is as follows.

**Table 1: Domestic ICT Market in Bangladesh**

Market Segment	Volume (US \$ Million)	Proportion (%)
Computer & Network Services	105	65
Software	24	15
Other ITES (IT Enable Services)	24	15
Internet & Network Services	8	5

**Fig 2: Bangladesh domestic ICT market (major) segments**

### 1.1.4 An overview of Software Industry in Bangladesh

Bangladesh is one of the largest developing countries in the world with a population of about 160 million. The software industry in Bangladesh has come a long way over the last few decades. The industry has become dynamic with a significant number of energetic entrepreneurs making their mark. Major milestones of the industry are highlighted below:

- In 1984, BCC (Bangladesh Computer Council) was formed under the Ministry of Science and Technology followed by the formation of BCS (Bangladesh Computer Samity) in 1987. Bangladesh Computer Samity is the voice of ICT industry of Bangladesh and currently has 498 members.
- In June 1997, the Government appointed a committee to look into the problems and prospects of export of software from Bangladesh and in the following year, Bangladesh Association of Software and Information Services (BASIS) was formed.
- In 1998, the Government removed all import duties and VAT from computer hardware and software.
- In 2000, draft of the ICT Policy was finalized and Intellectual Property Rights (IPR) law was enacted with the Copyright (Amendment) Bill

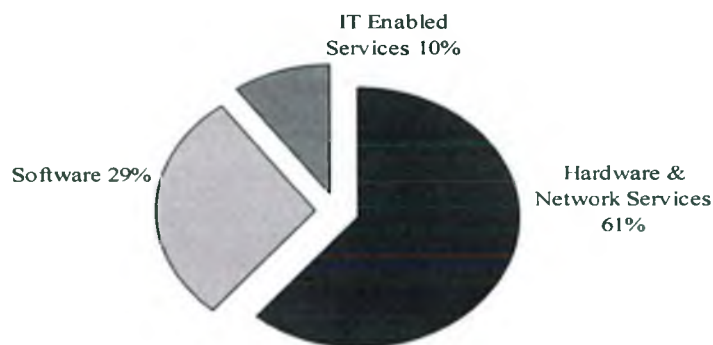
2004, which sought to safeguard the intellectual property of local as well as foreign companies.

- In 2002, BASIS in association with BCC (Bangladesh Computer Council) and the Ministry of ICT established ICT Incubator at BSRS Bhaban.
- In March 2003, VOIP (Voice over Internet Protocol) issues were put into legal framework.
- In May 2003, Bangladesh opened its first ICT business center in Silicon Valley with the aim of helping Bangladeshi companies gain a firm footing in the US market.
- The industry has been experiencing double digit growth for the last decade with exports going beyond the US \$10 million mark in the 2004-2005 fiscal year.

### 1.1.5 Market Size of Software Industry in Bangladesh:

Recent trends indicate that the industry has reached a take off stage and poised for high growth. Software and ITES account for 39% of the total market (excluding telecom) that is estimated to be over 300 million US dollar. (BASIS,2007).

**Fig 3: Total Market in Bangladesh:**  
(Excluding Telecom Services)





Local software companies mainly cater to the customized software development and maintenance segment of the market. They share this segment with a number of international software vendors who have significant market presence in specific client segments like banks, telecom, MNCs (Multinational Companies) and some large donor funded government projects. More than 300 registered software companies are operating in the country. The software developed in Bangladesh can be broadly divided into three categories – (1) customized software, (2) multimedia software and (3) web software.

In the last five to ten years, a good number of entrepreneurs and talented professionals have come forward to make the industry more dynamic and more vibrant. According to the BASIS (the Bangladesh Association of Software and Information Services), more than three hundred (300) registered software companies are currently operating in Bangladesh. From them, more than fifty (50) software and IT service companies are exporting their product and services to thirty (30) different countries in the world including USA, Canada, European countries, Middle East, Japan, Australia, South Africa and some of the South East Asian countries (Mashroor 2005).

### **1.1.6 Export of Software Services:**

According to the Bangladesh Bank source, export earnings from Software and ITES was USD 27.01 million in the fiscal year 2005-06 registering a high growth of 113 per cent from the previous year (2004-05). Table 2, shows the Bangladesh software and ITES export earning for last five years.

According to industry experts (BASIS leaders), the recent development in joint ventures and business collaborations among Danish companies (Admiral IT, Emini A/S, Scanpocon etc) and Bangladeshi software companies would assist significantly in sustaining the enviable growth in the export earning. Some of these projects are already in place and many others are either in the pipeline or perceived to be coming in the near future. Another factor that has

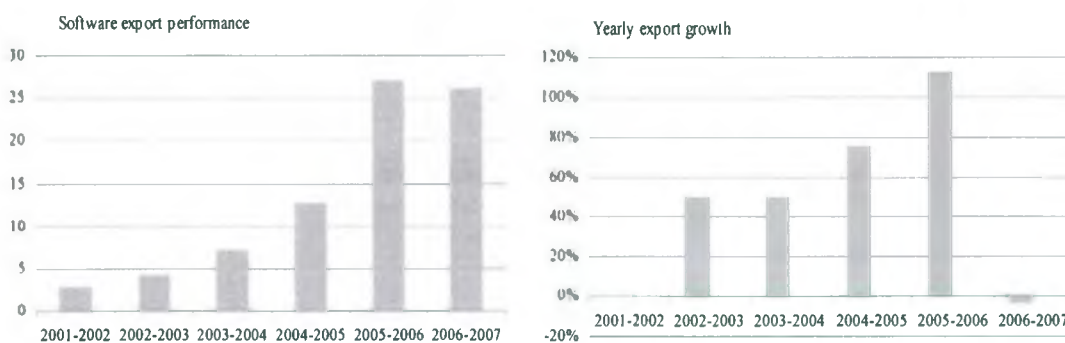
contributed to the recent high export growth is the influence of the multinational telecom companies. These companies while operating in Bangladesh utilized the local IT sector for many of their international projects giving a good software export opportunity for Bangladesh. At present, there are about fifty companies in the country engaged in exporting software and ITES to thirty countries across the globe. The export destinations are USA, Canada, EU countries, Middle East, Japan, Australia, South Africa and some South East Asian countries.

**Table 2: Export of Software services**

Figures in million USD						
	2001-2002	002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Software Export	2.80	4.20	7.20	12.68	27.01	26.08
Yearly Growth	-	51%	51%	76%	113%	- 4%

(Source: Bangladesh Bank)

**Figure 4: Software Export performance**



(Source: BASIS Survey 2007)



### 1.1.7 Major Exporting Countries:

A growing export IT-sector is important for Bangladesh, since it generates foreign exchange and provides for high skilled jobs. To achieve this, a lot depends on the education system and the IT infrastructure of the country. In the International Software and ICT market, Bangladeshi companies have started to make their mark. The country is already exporting software and ICT services to 23 countries. During the last year, export of software and ITES has grown by more than 70% over previous year.

**Table 3: Major Exporting countries**

<b>Countries</b>	<b>No. of Software/ITES Companies in Bangladesh</b>
USA	70+
Denmark	20+
UK	10+
Japan	10+
Australia	10+
Finland	8
Switzerland	5
Canada	6
Germany	8
Norway	5
Sweden	3
South Africa	4
Thailand	4
Middle East (UAE, Saudi Arabia, Bahrain)	10+

(Source: BASIS Survey, 2007)

### 1.1.8 Types of Software Products & Target Customers

The following table shows market percentage share occupied by various products and services offered by local software companies.

**Table 4: Range of Products/Services of Local Software Industry**

<b>Products / Service Category</b>	
Accounting & Financial Management	69%
Inventory Management	59%
HR Software	58%
Web Site / Web Application Development	57%
ERP (Enterprise Resource Planning)	48%
Software Implementation % Integration	46%
Billing	43%
Asset Management	38%
POS (Point of Sales) for Retail Stores	37%
E Commerce	36%
Data Entry / Data Conversation	34%
CRM (Customer Relation Management)	32%
E Governance Application	29%
SCM (Supply Chain Management)	27%
Data warehousing	23%
Access Control	22%
Wireless/ Mobile Application Development	18%
E Learning	17%
Data Security	14%
Gaming Software	6%

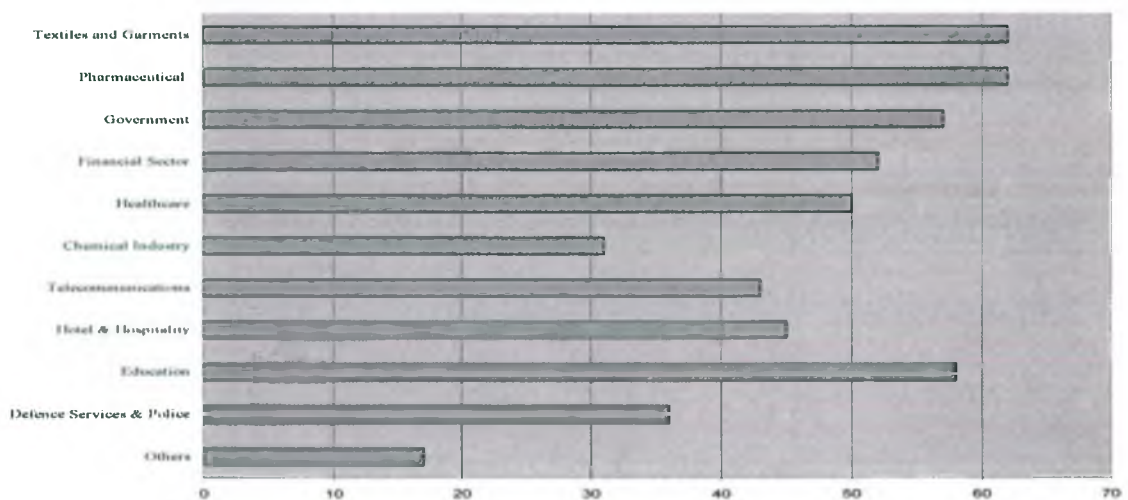
(Source: BASIS Survey, 2006)

The table shows that demand for the back-office automation (accounting/finance, HR, inventory and billing) by organizational IT users is

working as the main driving force for software industry. This items listed in the table are discrete categories and hence the percentage shown do not add up. At the same time, a lot of companies have been involved in the development of high value customized applications. This demonstrates the maturing process of the software companies, as well as higher level of customer awareness of the potential value that can be generated through system automation in business organizations. The considerable demand for front-end business applications (web applications, e-governance application, e-commerce, POS) demonstrates high level of co-relation between increasing network access and use of software applications.

The following graph (Fig. 5) shows the business focus of the software companies by client industry segments. The biggest buyers of software services are the two dominant sectors in the economy garments/textile and pharmaceutical. Service sector enterprises are also becoming more interested in process automation. The financial service sector constitutes a significant market for the software companies. Almost all of the banks have implemented or are in the process of implementing online banking systems. A number of software companies are also developing specialized software billing and SMS based applications for the booming telecom sector.

**Figure5: Percentage of Software use in different sectors**

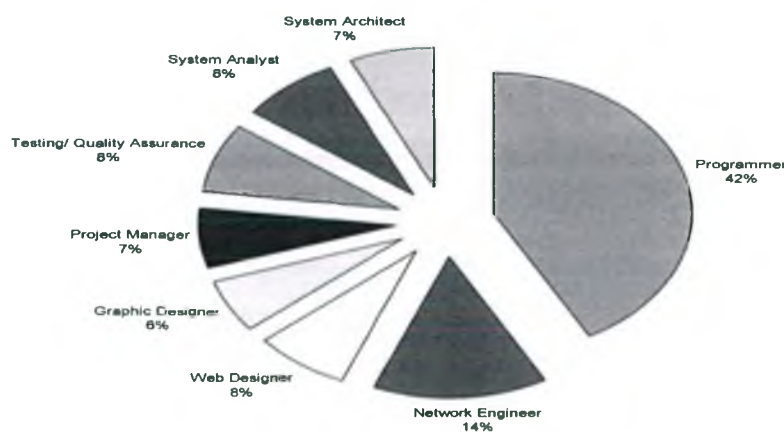


A large number of software companies (57% of surveyed companies) are working on public sector IT projects. Since government is the potential biggest client for software industry, this represents a positive sign for the long term domestic industry. Furthermore, the National IT policy has set up a specific guideline for a minimum allocation of 2% of ADP (Annual Development Program, 2006) in IT which is more than Tk. 350 crore. Increased Government procurements has happened recently including a number of e-governance projects for different ministries with an approved allocation of more than Tk. 60 crore. The SICT (Support to ICT Task Force) has so far floated 17 e-governance projects.

### 1.1.9 Workforce Dynamics of the Software Industry:

Around 5,500 software professionals are employed in more than 300 registered software firms in the country. Total number of IT professionals in the country is estimated to be more than 25,000 a large portion of which are working in IT responsibilities at different government and non government organizations as well as hundreds of large and small private business enterprises. Diagram below shows the technical job distribution in software companies (BASIS, 2006).

**Figure 6: Technical Job Distribution in Software Industry**



According to the graph, a significant portion of technical professionals in the surveyed firms are involved in non-code activities (e.g. project management, system analysis, system architecture, quality assurance etc.) which are very important components of project life-cycle for any software project. This underlines the commitment of the local software firms in the process improvement initiatives. It is expected that as more and more large projects are available, the role of these important non-code activities will increase further.

The lifeline of a knowledge industry like software is the availability of qualified human resources in the market. The following table shows the academic background of the technical professionals employed in the software industry (BASIS, 2006).

**Table 5: Academic Qualifications of Technical Professionals**

<b>% of total technical staffs</b>	
Graduate in non-IT subjects	19%
Masters in non-IT subjects	23%
Computer Science/Engineering Graduates	35%
Masters in Computer Science/Engineering	9%
Diploma/Certificate courses in IT	12%
Other	2%

(Source: BASIS Survey, 2006)

Although more than 85% of the total technical recruits in the software firms have a minimum graduation degree, a large portion of them do not have institutional IT degrees. For the software companies, unavailability of IT graduates often results in loss of productivity and costs the quality of software



projects. Low numbers of computer science/engineering graduates as well as high rate of turnover and overseas migration of IT graduates have been the main reasons behind this constraint.

#### **1.1.10 Challenges of software sector in Bangladesh**

As computer technology offers efficient and high performance information processing, it has got popularity over the home, office users in the whole world. By the decade of 1990, in Bangladesh, it has also assumed an important role. Since this time PCs become more user friendly and attractive, the number of users had been increased. Beside the general users, in Bangladesh, a number of Software Developers has increased as well. Many of Computer Science and Engineering graduates from Public and private universities as well as Computer diplomas from training institutions are getting employed to the local software companies. As the time goes, the overall development of skill of software developers has been increased with respect to Bangladesh. Bangladesh is a country, where the only surplus property is the human resource. Considering the earning of foreign exchanges and removing of unemployment problem, software industry is a very prospective field. To make this field more profitable, several plans has been done by the government and private organizations from past several years. In 1997, Government appointed a task force to report on the development of ICT and its prospects in Bangladesh. The Committee identified the following problems and barriers hindering the growth of Software industry in Bangladesh, and classified those under the following major functional areas:

- Fiscal
- Human Resource Development
- Infrastructure
- Marketing

**Fiscal**

- a) The user base of computer is extremely low because of high cost of computers and peripherals, due mainly to high incidence of import duty and VAT.
- b) In the absence of any incentive scheme, the exporters do not feel encouraged to explore potential markets.
- c) Interest rates on loans, charged by the Commercial Banks are too prohibitive for entrepreneurs to investment in IT field.
- d) The existing banking procedures are too complicated to induce exporters to bring their export remittances through banking channel.

**Human Resource Development**

- a) Course curriculum for computer-related education followed in the Universities does not fully reflect the requirements of the IT industry.
- b) The number of graduates in computer-related subjects produced by the Universities each year is far less than the actual requirement.
- c) Substantial number of such graduates leaves the country for overseas employment.
- d) Private IT training institutions lack the required quality of trainers.
- e) Private IT training institutions do not follow any standard course curricula and examination system.
- f) There is no planned scheme to increase computer literacy.



**Infrastructure**

- a) Absence of necessary laws protecting the Intellectual Property Rights discourages prospective overseas customers from using Bangladesh as a source of supply.
- b) The facility of high speed data (both nationally and internationally) is very limited.
- c) Present cost of data communication is very high.
- d) High Speed Video Conferencing facility is not available.
- e) ISDN Telecommunication line with Fiber Optic backbone does not exist.
- f) Resource materials on Information Technology, such as books, magazines, software etc. are scanty and scattered.
- g) Whatever little hardware, software and communication resources are available cannot be found under 'one roof'.
- h) Custom formalities for handling equipment / documents for export purpose are too time-consuming to encourage export.

**Marketing**

- a) Bangladesh is not known to be a potential off-shore source of software and Data Processing Services.
- b) Information on prospective overseas customers is not available.
- c) Not all software in use are Licensed.
- d) The use of Customized Application Software is virtually non-existent; therefore, domestic Software market has not developed at all.

- e) It is not possible to enter into the export market without having a strong domestic market base.

## **1.2 Problem Identification:**

The first step in this research project was to identify a problem. The research would form a continuum which would start with that problem and end with its solution.

### **1.2.1 Area of Interest:**

The importance of customer satisfaction in software products has been highlighted recently by leading firms in the industry (Grady, 1992; Kehoe, 1990) and improving customer satisfaction has emerged as a key strategic objective. The significance of understanding customer needs has also been highlighted in the research literature (Heskett, Sasser and Hart, 1990; Hauser and Clausing, 1990). The reason for this emphasis is that fully satisfied customers lead to a stronger competitive position and higher market share and profits. Moreover, the cost of earning a new customer is often much higher than retaining the existing customer base. Marketing studies have also shown that a satisfied customer base leads to an increase in market share through "word of mouth" advertising.

In software products, customer satisfaction is a function of both product quality and the quality of service support provided. Once a product is delivered, the customer may detect problems due to various reasons. The quality of service support provided by the vendor may often mitigate the ill effects created due to these problems. Moreover, when a high quality product is backed with quality service, it further enhances customer satisfaction. Field research has shown that an excellent product delivered with mediocre service

has at best a 50-50 chance of drawing the customer back, whereas a mediocre product accompanied by excellent service inspires customer loyalty (D'Egidio, 1990).

It is not long since software sector has emerged as a national level industry of Bangladesh. The recent trend in the industry indicates that the industry has certainly reached in a 'take-off' stage and in the coming years in position for high growth (see table 2). To induce more company to use the software application, it is important to obtain insights from actual users of the system about the changes they would like to see to better meet their needs. Furthermore, the software developers must focus on building customized software that meets user requirements.

Understanding the determinants of service quality will enable software vendors to efficiently allocate resources in order to increase customer satisfaction and enhance market share. These insights must then be factored into a coherent strategy to provide real value to users. It is important to identifying the key dimensions that offer value and influence user perception and lead to satisfaction. In turn, this would allow the software industry to grow at a higher rate and related problems faced by the local developer.

### **1.2.2 Symptoms are:**

- Software industry is still in the "takeoff" stage, sales are not increasing at a higher rate.
- Vendors receiving an increasing number of complaints about software service.

### 1.2.3 Problem:

With respect to Bangladesh, considering the development of a new software system, developers suffer a great deal to elicit the need as well as the user expectation. So, the developer finds it difficult to determine what the facilities should have in the new system, or what should not. As matter of fact, they have to proceed without having clear understanding of customer requirements. . After an interval of time, when the developers comes near to the finishing point of the production, then if the product doesn't meet the client's satisfaction, the developers has to further go through a lengthy and complicated process. According to a study of (Mashroor 2005), some companies in Bangladesh having excellent work force that are capable of developing international standard software but are failing due to **lack of understanding of end-users perception** compared to other developed countries.

### 1.3 Original Problem Statement:

- The determinants of service quality in application software products and their relative importance in Bangladesh are skill unknown.

### 1.4 Research Problem & Research Questions:

Based on the problem area discussion research problem has been formulated as follows:

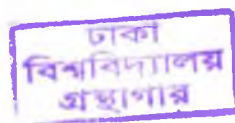
**To gain a better understanding of the service quality dimension that affect customer satisfaction in application software in Bangladesh.**

**Research Questions:**

Based on the above stated research problem the following research questions have been developed.

- Q1. What are the service quality dimensions in application software and how do they affect customer satisfaction in application software?
- Q2. How can relation importance of service quality dimension be described in application software in relation to the customer satisfaction?

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## **Chapter Two (2): Literature Review**

## **2.0 Literature Review:**

*This chapter will give an overview of literature that is related to the research problem presented in the previous chapter. The value of any single study is derived as much from how it fit with and expands previous work that raise the importance of literature review (Cooper, M 1998). Literature review typically appears as introductions to reports of few primary data or as more detailed independent work (Harper, Weins, & Matarazzo, 1978). Therefore, it is vital for the researchers to structure literature review, whether his/ her field of research or design relates to, and builds upon previous work in the area. In this chapter the researcher will introduce the concepts of service quality and customer satisfaction, relationship between service quality and customer satisfaction, traditional service quality dimensions, electronic service quality dimensions, and software service quality dimension in order to give a clear idea about the research area. The researcher has developed the literature review by combining published books and journal, which is described as theoretical investigative research review.*

## **2.1 Service Quality (SQ):**

### **2.1.1 Definition of Quality:**

In its simple form quality is a product of the effort that every member of the organization invests in satisfying customers. In its broad sense service quality is defined as superiority or excellence as perceived by the customer. More specifically service quality has been defined as:

“The delivery of excellence or superior service relative to customer exception”  
(Zeithaml & Bitner, 2003)

“Quality is about consistent conformance to customer expectations” (Crosby, 1979)

“Fitness for purpose” (Juran, 1984)



“Quality is the extent to which products meet requirements of customer who use them” (Hayes, 1998).

### **2.1.2 Defining the concept of Service Quality (SQ):**

Two decades ago, people defined service as "Anything useful, such as maintenance, supplies installation, repairs, etc, provided by a dealer or manufacturer for people who have bought things from him" according to Webster's New 20th Century Dictionary (second edition). But today we believe this definition is not sufficient to cover what service means. Today it is more appropriate to define service as "useful labor that does not produce a tangible commodity" in a customer-oriented point of view (Davidoff, 1994).

Harris (2000) noted customer service is anything we do for the customer that enhances the customer experience. Customers have varying ideas of what they expect from customer interaction. No matter how accurately we see our definition of customer service, we still have to live up to what our customer thinks that customer service is. The customer's satisfaction is the goal to attain in service industry.

Service quality has taken on huge importance in the services industry and has been a chief focal point in academic research since it is viewed as a critical component of customer perceptions. In the case of pure services, service quality will be a dominant element in customers' evaluations. Consumers judge the quality of services on their perceptions of the technical outcome provided and on how that outcome was delivered.

Service quality is a concept that has aroused considerable interest and debate in the research literature. It has difficulties in both defining and measuring (Wisniewski, 2001). There are a number of different "definitions" as to what is meant by service quality. One that is commonly used defines service quality as the extent to which a service meets needs or expectations (Lewis and Mitchell, 1990; Dotchin and Oakland, 1994a; Asubonteng *et al.*, 1996; Wisniewski and Donnelly, 1996). Service quality can thus be defined as the difference between

customer expectations of service and perceived service. If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs (Parasuraman *et al.*, 1985; Lewis and Mitchell, 1990).

Service quality has been conceptualized in two different ways. The Nordic perspective, as articulated by Gronroos (1984), defines the dimensions of service quality as consisting of functional aspects (e.g., intangible benefits) and technical ones (e.g., the delivery of the service). These dimensions are viewed as the main properties of perceived service quality that are applicable to a host of different contexts. The second conceptualization, which can be labeled the American one, is exemplified by the work of Parasuraman *et al.* (1988) and revolves around the SERVQUAL scale. Parasuraman *et al.* (1988) define service quality as the outcome of effective service delivery which occurs when customers receive service that is superior to their expectations. According to these authors, service quality is a type of attitude which is formed by a comparison between customers' prior expectations of the service and their perceptions of the actual service performance. Stated differently, perceptions of service quality are based on the evaluation of service delivery in comparison to pre-consumption expectations, i.e., the disconfirmation model.

### **2.1.3 Reason for measuring Service Quality (SQ):**

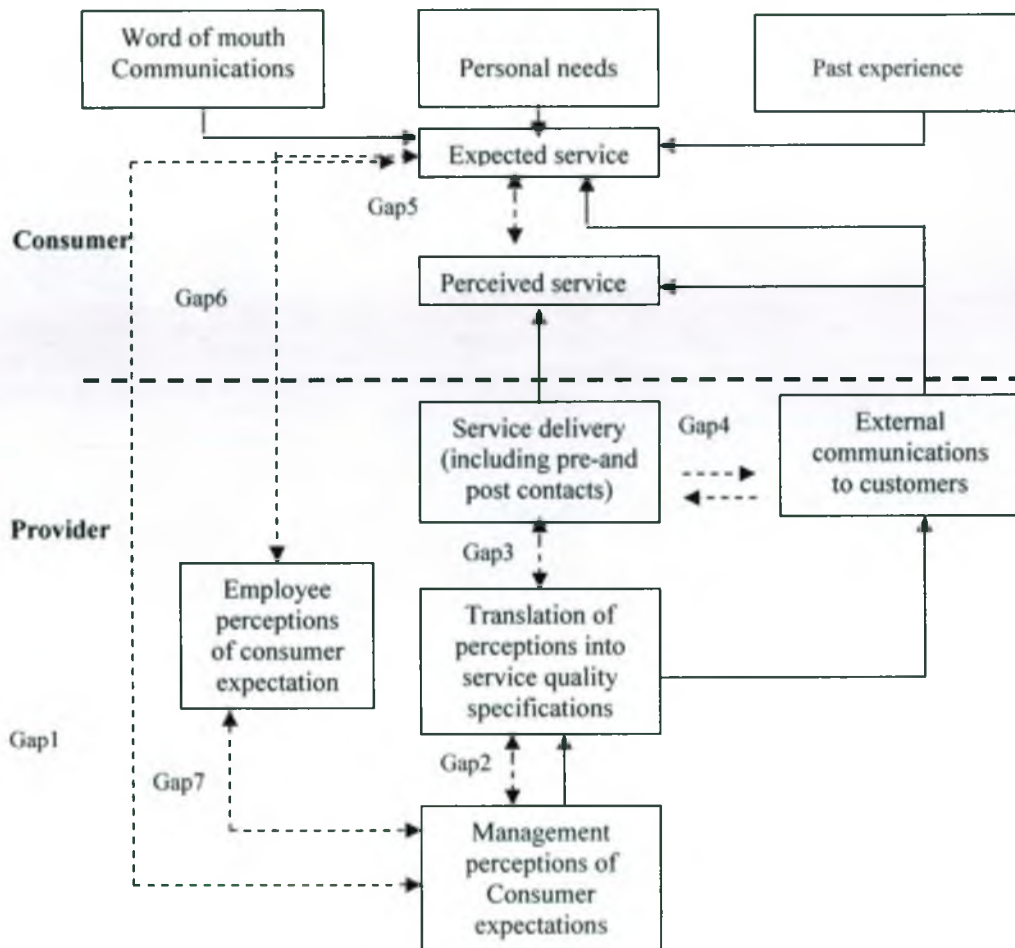
Aspects of quality can be measured. Such measures give businesses an accurate indication of the "well-being" of their business processes and determine the quality of products and services resulting from these processes (Hayes, 1998). Measures allow a business to:

- Know how well the business process is working,
- Identify the quality related problems
- Know where to make changes to create improvements, if changes are needed, and

- Establishing clear standards for service delivery.
- Determine if the changes led to improvements (Hayes, 1998).

#### 2.1.4 Model of Service Quality Gaps:

There are seven major gaps in the service quality concept, which are shown in Figure 1. The model is an extension of Parasuraman *et al.* (1985). According to the following explanation (ASI Quality Systems, 1992; Curry, 1999; Luk and Layton, 2002), the three important gaps, which are more associated with the external customers, are Gap1, Gap5 and Gap6; since they have a direct relationship with customers.



**Figure 7:** Model of service quality gaps

- Gap1: Customers' expectations versus management perceptions: as a result of the lack of a marketing research orientation, inadequate upward communication and too many layers of management.
- Gap2: Management perceptions versus service specifications: as a result of inadequate commitment to service quality, a perception of unfeasibility, inadequate task standardization and an absence of goal setting.
- Gap3: Service specifications versus service delivery: as a result of role ambiguity and conflict, poor employee-job fit and poor technology-job fit, inappropriate supervisory control systems, lack of perceived control and lack of teamwork.
- Gap4: Service delivery versus external communication: as a result of inadequate horizontal communications and propensity to over-promise.
- Gap5: The discrepancy between customer expectations and their perceptions of the service delivered: as a result of the influences exerted from the customer side and the shortfalls (gaps) on the part of the service provider. In this case, customer expectations are influenced by the extent of personal needs, word of mouth recommendation and past service experiences.
- Gap6: The discrepancy between customer expectations and employees' perceptions: as a result of the differences in the understanding of customer expectations by front-line service providers.
- Gap7: The discrepancy between employee's perceptions and management perceptions: as a result of the differences in the understanding of customer expectations between managers and service providers.

According to Brown and Bond (1995), "the gap model is one of the best received and most heuristically valuable contributions to the services literature". The model identifies seven key discrepancies or gaps relating to managerial perceptions of service quality, and tasks associated with service delivery to customers. The first six gaps (Gap 1, Gap 2, Gap 3, Gap 4, Gap 6 and Gap 7) are identified as functions of the way in which service is delivered, whereas Gap 5 pertains to the customer and as such is considered to be the true measure of service quality. The Gap on which the SERVQUAL methodology has influence is Gap 5. In the following, the SERVQUAL approach is demonstrated.

### **2.1.5 Conceptual Model for Measuring Service quality (SQ)**

Using insights from these studies as a starting point, Parasuraman, Zeithaml, & Berry, (1988,1991) conducted empirical studies in several industry sectors to develop and refine SERVQUAL, a multiple-item instrument to quantify customers' global (as opposed to transaction-specific) assessment of a company's SQ.

### **2.1.6 SERVQUAL Approach**

The conceptual underpinnings of the SERVQUAL model were first published in 1985 (Parasuraman, Zeithaml, & Berry, 1985). In that research, the authors focused their discussion of service quality on what Gronroos (1984) labeled "functional quality," or the expressive performance of a service. They argued that there are 10 distinct dimensions to service quality.





**Figure 8:** Determinants of Service Quality

However, 3 years later when empirically deriving a service quality definition, the list of 10 was reduced to 5; the 5 dimensions and the descriptions the authors give are listed below (Parasuraman, Zeithaml, & Berry, 1988):

- **Reliability:** Ability to perform the promised service dependably and accurately.
- **Responsiveness:** Willingness to help customers and provide prompt service.
- **Assurance:** Employees' knowledge and courtesy and their ability to inspire trust and confidence.
- **Empathy:** Caring, individualized attention given to customer
- **Tangibles:** Appearance of physical facility, equipment, personnel and written materials.

### **2.1.7 Criticism of Traditional Model**

SERVQUAL is based on the concept of a “service quality gap” that exists between the customers *expected* level of service (from previous experience and word-of-mouth communication) and their perception of the *actual* level of service delivery.

Cronin and Taylor (1992) have examined a performance- based measure of service quality, called SERVPERF, in four industries (banking, pest control, dry cleaning, and fast food). SERVPERF is composed of the 22 perception items in the SERVQUAL, and therefore excludes any consideration of expectations.

Parasuraman et. al. (2005) emphasize the fact that past conceptualizations of service quality created to evaluate traditional services and characterized by personal interaction between customer and employees cannot be adequately applied to virtual environments, where customers interact with technology rather than with service personnel.

Although there are criticisms of the SERVQUAL model (e.g. Teas 1993; Cronin and Taylor 1994) it effectively addresses the human aspects of quality service and is still widely used today.

## **2.2 Customer Satisfaction:**

### **2.2.1 Defining the concept of customer satisfaction**

Satisfaction has been described as a consumer’s post purchase evaluation of a product or service, given pre-purchase expectations (Kotler, 1991).

Customer satisfaction has been defined as the degree in which an organization or agency meets or exceeds the expectations of the individual customer with whom employees interact with (Bridge, Fischer, & Larisch, 1995). According to Reichfield and Sasser (1990), high-quality products and associated services



designed to meet customer needs, will create high levels of customer satisfaction.

Satisfaction is an attitude or evaluation, which is formed by the consumer comparing their pre-purchase expectation of what they would receive from the product to their subjective perceptions of the performance they actually receive (Oliver, 1980).

The present evidence suggests that major customer satisfaction comes from improvements in three groups of services (Levesque and McDougall 1996):

- service quality;
- service features;
- customer complaint handling

### **2.2.2 Link between Service Quality and Customer Satisfaction**

The impact of service quality on consumer behavior has attracted significant managerial and academic attention. Specifically, the concern has focused on the extent to which service quality is a driver of satisfaction and behavioral outcomes. Service quality is an antecedent of satisfaction as discussed by numerous researchers (Brady, Cronin, and Brand 2002; Dabholkar 1995; Rust and Oliver 1994; Sivadas and Baker-Prewitt 2000; Spreng and Mackoy 1996). Many researchers have proposed that improved service quality should lead to higher customer satisfaction (Anderson, Fornell and Lehman 1994; Bitner, Booms, and Mohr 1994; Bolton and Drew, 1994).

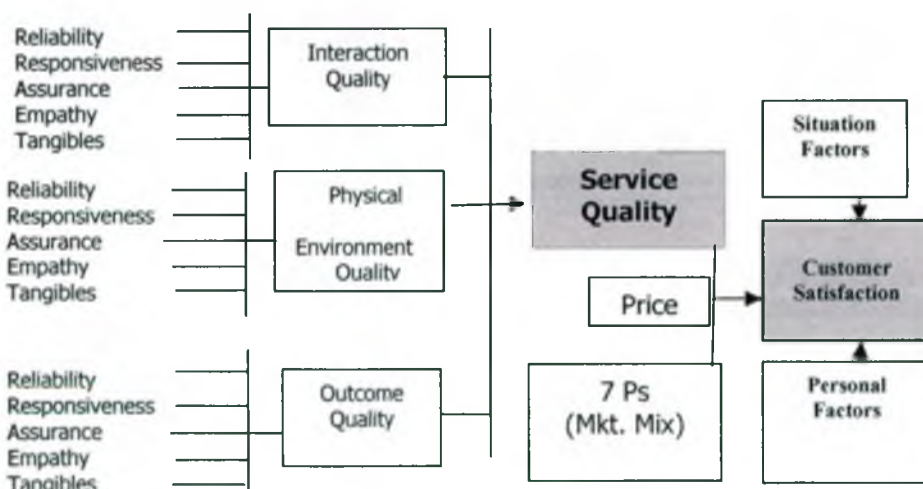
Customer satisfaction and service quality are very interlinked. Researchers have contributed empirical studies on service satisfaction, closely related topics that is sometimes difficult to distinguish from service quality (Bitner, 1990; Oliver 1989). Lehtinen (1993) refers to process quality, as judged by consumers during a service, and output quality judged after a service is

performed. Output quality is very important as it leads to a customer satisfaction or dissatisfaction.

Zeithaml et al (2003) identifies that service quality & customer satisfaction are fundamentally different in terms of their underlying causes and outcomes. Although they have certain things in common, satisfaction is generally is generally viewed as a broader concept, whereas service quality assessment focuses specifically on dimensions of service. Based on this view, perceived service quality is a component of customer satisfaction. Furthermore, service quality leads to customer satisfaction; considerable practitioner interest has focused on programs to improve service quality (Shepard, 1999).

### 2.2.3 Model showing the link between SQ & Customer Satisfaction:

Zeithaml et al (2003) identifies that service quality & customer satisfaction are fundamentally different in terms of their underlying causes and outcomes. Although they have certain things in common, **satisfaction** is generally viewed as a broader concept, whereas **service quality** assessment focuses specifically on dimensions of service. Based on this view, perceived service quality is a component of customer satisfaction. The following figure graphically illustrates the distinctions between two concepts.



**Figure 9:** Customer Perceptions of Quality and Customer Satisfaction.

### 2.3 Research on Electronic Service Quality:

Although a generic instrument to measure service quality (called SERVQUAL) has been in existence for some time (Parasuraman, Zeithaml and Berry 1988), many have argued that electronic channels are simply so different from the “bricks-and-mortar” environment that we are accustomed to that a complete rethink of electronic service quality was called for. (Voss, 2000), for instance, pointed out that the Assurance and Empathy dimensions, as operationalized and measured by SERVQUAL, refer to human interaction between service provider and customer which simply may not take place during a Web-based service encounter.

The absence of a valid and reliable scale to measure electronic service quality “forced” early researchers to make use of some fairly unsatisfactory alternatives to measure electronic service quality, such as using selected “generalizable” items from the SERVQUAL scale to measure electronic service quality (Montoya-Weiss, Voss and Grewal 2003). These unsatisfactory practices had to compromise with some of the empirical results that emanated from those early studies.

In response to the growing recognition that service quality in an electronic channel environment is different (and thus the way it ought to be measured), several researchers have attempted to fill this gap. Examples include Loiacono, Watson and Goodhue’s (2002), WebQual™ instrument, Yoo and Donthu’s (2001) “SITEQUAL,” and Wolfinbarger and Gilly’s (2003) “eTailQ.” Three of the principal studies that examine the measurement of perception of the quality of electronic service reported in the academic literature are described as:

- **EtailQ**, developed by Wolfinbarger and Gilly’s (2003). This scale includes 14 items divided in four dimensions ( design, customer care, reliability/ compliance with commitments and security/privacy)

- **WebQual 4** , developed by Barnes & Vidgen (2003), composed of 22 items on 3 dimensions (quality of information, quality of interactivity / confidence and empathy, and usability of the site / usability and design)
- **SiteQual**, developed by Yoo and Donthu's (2001), including 9 items distributed over four dimensions ( ease of use, design, processing speed and security)

However, many of these attempts were flawed (Finn and Kayande 2002) as they were either too narrowly focused or failed to address service delivery from the perspective of service delivered to customers through a Website (Zeithaml, Parasuraman and Malholtra, 2005).

The first scale that effectively captured the nature of electronic service quality from the perspective of online shopping through a Website was the E-S-QUAL scale developed by Parasuraman, Zeithaml and Malholtra (2005). This iterative process resulted in the final E-S-QUALScale, consisting of 22 items on four dimensions, which we labeled and defined as follows:

- **Efficiency:** The ease and speed of accessing and using the site.
- **Fulfillment:** The extent to which the site's promises about order delivery and item availability are fulfilled.
- **System availability:** The correct technical functioning of the site.
- **Privacy:** The degree to which the site is safe and protects customer information.

Following the same iterative process used in developing E-S-QUAL, they created an e-recovery service quality instrument (E-RecSQUAL) consisting of 11 items on three dimensions:

- **Responsiveness:** Effective handling of problems and returns through the site.
- **Compensation:** The degree to which the site compensates customers for problems.
- **Contact:** The availability of assistance through telephone or online representatives.

## 2.4 Research on S-SQ (Software service quality)

As computerization got recognized as a competitive advantage, more organizations have adopted for computerizing their services through the use of customized software. A major qualitative study by, Mick and Fournier (1998), focusing on people's reactions to technology, suggests that technology may trigger positive and negative feelings simultaneously. Moreover, other research involving both qualitative and empirical components demonstrates that customers' propensity to embrace new technologies (i.e., their *technology readiness*) depends on the relative dominance of positive and negative feelings in their overall technology beliefs (Parasuraman 2005). Earlier studies focusing on specific technologies have also shown that, consumers' beliefs about, and reactions to, the technology in question are distinct and positively correlated with acceptance (Cowles 1989; Cowles and Crosby 1990; Dabholkar 1996). Other research shows that perceived usefulness and ease of use are correlated significantly with self-reported (Davis 1989) and actual (Szajna 1996) usage of technology.

Collectively, the findings of these studies reveal important differences in acceptance and usage of technologies across customers depending on their technology beliefs and suggest that similar differences might exist in the evaluative processes used in judging S-SQ. In other words, customer-specific attributes (e.g., technology readiness) might influence, for instance, the



attributes that customers desire in software and the performance levels that would signal superior S-SQ.

So far, despite their vital importance for the development of IT (Information Technology), research on consumer evaluation of self-service technologies such as application software (i.e. web portals) has been limited (Gounaris and Dimitriadis, 2003). As a result, increasing attention is being paid to the differences between the assessments of service offerings by the technology as compared to the personal interactions. The quality of the application software as the technical interface is of vital importance.

Davis (1989) showed that perceived usefulness and ease of use are each highly correlated with self-reported use and future use. Ease of use appears to be a causal antecedent of usefulness, with little direct effect on use. TAM, the technology acceptance model, posits that two constructs, perceived ease of use, and perceived usefulness, mediate all other external variables likely to influence adoption and usage decisions by the individual (Mathieson, 1991).

Some research has been carried in relation to service quality of software. Researchers have noted the importance of usefulness and ease of use, or complexity, in the decision to use software (Tornatzky and Klein, 1982; Huff and McNaughton, 1991; Fichman, 1993)

Huff and McNaughton (1991) recognized the need for ongoing training and support to guide users with software perceived as being difficult to use.

Some academic researchers have developed various instruments to evaluate IT services. Few studies have used SERVQUAL to measure IT service quality (Kim 1990; Pitt, Watson, and Kavan 1995; Shaw, DeLone, and Niedman 2002). These studies have confirmed that SERVQUAL can be used with confidence in IT environments.

Many IS researchers have addressed the success of an application through the measurement of the user satisfaction (for example, Bailey & Pearson, 1983;

Doll & Torkzadeh, 1988; Ives & Olson, 1984). End-user satisfaction is “the affective attitude towards a specific computer application by someone who interacts with the application directly” (Doll & Torkzadeh, 1988). They also added that end-user satisfaction is often used as an indicator of user perception of the effectiveness of an MIS (Bailey & Pearson, 1983; Doll & Torkzadeh, 1988). To measure the user perception, Doll & Torkzadeh (1988) developed 12-item survey instrument. This scale divided in five dimensions that measures user perception with the content, accuracy, format, timeliness, and ease of use of a computer application.

This particular scale is widely used, validated and generalizable instrument (e.g., Gelderman, 1998; Rahman & Abdul Kader, 1993). Since the instrument was established, a number of researchers have applied it to various advanced information technologies. Adams, Nelson, and Todd (1992) used it to assess user satisfaction with voice mail, and e-mail application in 10 different companies. In a test-retest of the instrument, Hendrickson et al, (1994) engaged a sample from a large public organization using software applications on either a mainframe or PC/desktop. Dowing (1999) used this scale to measure user perception with telephone interactive voice response system. More recently, Somers, Nelson, and Karimi (2003) confirmed that this scale maintains its psychometric stability when applied to users of enterprise resource planning (ERP) application software.

Usrey and Dooley (1996), created a scale for measuring application software on various dimensions. The dimensions are derived from the perspectives of both producers and consumers. Results show that the most important software quality dimensions include accuracy, capability, communication, completeness, conformance, features, flexibility, serviceability, simplicity, and stability. Consumer and producer attitudes about software quality differ only slightly. Further analysis suggests some possible meta-dimensions of software quality: fulfilling customer requirements, ease of use, and capability (for producers of software); and fulfilling customer requirements, ease of use, and



first impression quality (for consumers of software). Consumers appear to be primarily interested in what the software can do for them now, whereas producers appear to be primarily interested in what the software can do for them in the future.

Zhu, Wymer, and Chen (2002) studied the IT-based service quality in consumer banking. This study did not integrate the IT dimension in the original SERVQUAL. The developed survey included the 22 original items from SERVQUAL and a sixth dimension consisting of seven items associated with the IT-based service in the banking industry.

Krishnan, (2005) developed a conceptual model for measuring software service quality. The model was based on the following factors:

- **Responsiveness (RESP):** This factor measures the degree of time taken to respond to the service call generated by the customers.
- **Skill (SKIL):** This variable measures the technical knowledge and skills of the service representative as perceived by the customers.
- **Problem Resolution Time (PRST):** This variable gauges customer satisfaction with the cycle time for problem resolution.
- **Quality of Solution (QOSL):** This factor measures the customer's perception of the quality of the solution.

Jabnoun (2006) transformed the original SERVQUAL instrument for assessing software service quality. The software being assessed for this purpose is a newly developed computerized traffic test used by the Sharjah police department. The finding suggests that ease of use, simplicity, and efficiency, are the critical factors for the evaluation of the particular software.

### **2.4.1 Additional determinants of Software service quality:**

Price is essential factor in determining customer perception of automated service quality (Surjadjaja *et al.* 2003; Iqbal *et al.* 2003). From a customer perspective, price is the most important motivation for engaging in online purchases and the most critical comparison element (Surjadjaja *et al.* 2003). Furthermore, online consumers are more price sensitive than offline consumers (Iqbal *et al.* 2003). Pricing problems associated with perceptions of unfairness and non-competitiveness, for example fee charges, often contribute to consumer decisions to switch banks (Keaveney 1995, Colgate & Hedge 2001). Consequently, price has been incorporated as an additional factor that could influence the customers' overall perception of automated service quality.

Identifying an objective conceptualization of price to determine its role in the complex pricing environment of services is difficult (Chen *et al.* 1994). In the banking sector, a wide variety of products and services are offered and the prices of service products vary from one bank to another. As such, perceived price is used in this research to describe customers' judgment about a service price (Chen *et al.* 1994).

The core service ("what" is being offered) has features that shape customer perception and differentiate one service provider from another (Sureshchandar *et al.* 2002; Brogowicz *et al.* 1990; Rust & Oliver 1994, Schneider & Bowen 1995; Kotler 1984). The core service is considered as an important component of automated service (Riel *et al.* 2001) as the product offerings and product information represent a set of elements that could positively impact on automated service satisfaction levels (Szymanski & Hise 2000). Product innovation and knowledge development factors have a significant effect on the success of automated delivery channels (Hway-Boon & Yu 2003). Therefore, customer perceptions of the variety of products/services offered by a software vendor will be considered as another

predominant factor that could influence overall customer perceptions of software service quality.

### 2.4.2 Conclusions:

To sum up, the studies discussed above provide important insights into the dimensions or attributes of service quality in general as well as electronic and software service quality in particular. However, considering software applications, all the variables identified from the secondary study need to be validated in order to fully capture all relevant dimensions of a particular software quality.

## 2.5 Findings from the Secondary Literature Review

Findings from the secondary literature survey are as follows:

- The following lists of variables have been identified under the service quality of application software.

**Table 6:** List of Variables generated from Literature

SL.	Attributes/ Variables	Reference
1.	Simple to use	Davis (1989), Usrey and Dooley (1996); Jabnoun and AL-Saad (2004)
2.	Visually appealing	Liu & Arnett (2000)
3.	Content is well organized	Barnes & Vidgen (2003)
4.	Doesn't need technical computer experience to use	Krishnan, (2005), Jabnoun and AL-Saad (2004)

5.	Provides enough training to learn the system	Huff and McNaughton (1991)
6.	Information is easy to read	Doll & Torkzadeh (1988)
7.	Provides precise information you need	Doll & Torkzadeh (1988)
8.	Provides the information that you trust	Doll & Torkzadeh (1988)
9.	Provides accurate information	Doll & Torkzadeh, 1988
10.	Provide up-to-date information	Doll & Torkzadeh, 1988
11.	Output is presented in useful format	Doll & Torkzadeh, 1988
12.	Ensures quick response to your query	Yoo and Donthu (2001)
13.	Has excellent security	Yoo and Donthu (2001)
14.	Functions as it promises	Parasuraman, et al (2005)
15.	Always available for work	Doll & Torkzadeh, 1988

16.	Has efficient data backup facility	Yoo and Donthu (2001)
17.	Performs the job right at first time	Parasuraman et al (2005); Jabnoun and AL-Saad (2004)
18.	Price is reasonable	Surjadaja <i>et al.</i> 2003; Iqbal <i>et al.</i> 2003
19.	Provides good value for money	Iqbal <i>et al.</i> 2003
20.	Offers free support services	Keaveney 1995, Colgate & Hedge 2001
21.	Communicates with regular updates	Huff and McNaughton (1991)
22.	Provides quick support services	Huff and McNaughton (1991)
23.	Have knowledge to answer question and solve problems	Hway-Boon & Yu 2003

- The empirical work on technological service quality so far, however, has focused overwhelmingly on the electronic commerce (e-commerce, EC) function, with few, if any, studies of streamlined internal business processes such as application software.
- However, these variables are mainly determinants of Service quality at international level. Service Quality variables might change in the

context of Bangladesh. Thus, this list is subject to modification and change.

- No such research was conducted in the past in Bangladesh, but some international research works have been done.

From the above finding, it was decided to:

- focus on the use of software technology for a company's internal use, i.e. HR Software.

### **2.5.1 Problem Statement Validation:**

- From the secondary literature survey, it can be concluded that the lack of understanding of user perception exists in software sectors.
- Measuring service quality dimensions can be very useful in future prospect of software industry. The findings can also be effective for improving the customer satisfaction with application software.
- However, no extensive research has been done in this regard in Bangladesh and the limited research materials are also not available.



## **Chapter Three (3): Qualitative Study**

### **3.0 Qualitative Study:**

*This chapter will present detailed research methodology for qualitative study. This includes research objectives, research techniques, scope & limitations of the research and major findings of FGD (Focus Group discussion). Finally this chapter will present the conceptual framework based on literature review as well as qualitative study. This chapter will explain the key factor, variables and relationships among theories, or models and provide a theoretical overview. The conceptualization will help us to answer the study's research questions. The conceptual framework will also guide the data collection of this study.*

#### **3.1 Objectives for qualitative research:**

Based on the secondary literature survey, expert's opinions and consumers' requirements, the Broad and the Specific Objectives of the research has been set as follows:

##### **3.1.1 Broad Objective:**

- To assess or measure users perception of service quality in relation to HR Software in Bangladesh.

##### **3.1.2 Specific Objectives:**

Once a software product is delivered to a customer, the quality of service provided plays an important role in retaining that customer. Application developers and the quality of the product and services they offer are relevant factor for study. The main objective of this research is to develop the following themes as specific research questions of this study.

- To identify the factors that influence the service quality of application Software.

- To find out new factors, if any, affecting the user's perceptions of HR Software through qualitative research.
- To develop a model for assessing the service quality and Customer satisfaction with HR Software.
- To identify the relationship between users satisfaction with each factors Service Quality.

### **3.2 Research Techniques Used:**

This paper reports and discusses the construction of a set of quality indicators that have been used to measure the user's perception towards HR software in Bangladesh. The quality indicators/constructs were firstly constructed through comprehensive literature review. The key objectives of the qualitative research are:

- To verify the quality indicator that users perceive in HR software.
- To find out new variable, if any, affecting the user's perception towards HR software.
- To discard the one that are not relevant for this particular research.

There are many methods used for research. However some were found to be more appropriate than others. The following qualitative method has been used:

#### **3.2.1 Focus Group Discussion:**

A focus group is a group of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of the research. As a research technique, the focus group employs guided, interactional discussion as a means of generating "the rich details of complex experiences and the reasoning behind [an individual's] actions,

beliefs, perceptions and attitudes". This information can be used to identify potential areas of enquiry or to clarify subject matter that, by its nature, eludes other research instruments.

### **3.2.2 Reasons for Conducting FGD:**

The focus group discussions (FGD) are effective when to assess perceptions concerning a specific topic. It also provides rich understanding of the phenomenon of interest. The focus group is a panel of people (typically made up of 6 to 10 participants), led by a trained moderator, who meet for 90 minutes to 2 hours. A FGD helps to test few issues but it has to be conducted in a controlled environment and the people involved have to be experts or at least knowledgeable about the issues concerned.

The FGD was conducted with a homogenous group (i.e. HR Manager) of participants. All of the participants use the local HR Software and have ideas about software service in Bangladesh. We organized two FGD with 6 participants. There are also similarities in profession, education and age among them. All the participants were invited from different companies. So, the participants could discuss comfortably. Also the moderator could summarize very easily after discussion of every topic because of the spontaneous participation of the participants. A copy of description of our FGD is enclosed in appendix A. The main reasons for choosing this method is outlined below:

- Existing knowledge of a subject is inadequate and elaboration of relevant issues was necessary.
- The subject under investigation is complex and comprises a number of variables. This method enabled us to concentrate time and resources on the study's most pertinent variables.
- To generation of new hypotheses was necessary before a relevant and valid questionnaire can be constructed or an existing one enhanced.

### 3.2.3 Limitations:

- Focus groups, together with other qualitative methods, provide researchers with additional means of acquiring rich, experiential feedback from service users.
- FGD method is inappropriate when we have quite some knowledge about the topic but need more in-depth information and details.
- Group dynamics may be challenged or people may be divided or angry.
- Time-consuming and required experienced analysis.

### 3.2.4 Scope

- The research will be limited in finding service quality variables in particular software only (i.e. HR Software).
- The research will be done on the Dhaka city alone since it is the main hub of software activity.

After describing the scope we can further specify our problem statement as –

“To assess or measure user’s perception of service quality with relation to HR Software in Dhaka, Bangladesh”.

### 3.2.5 Major Findings of FGD:

Question 1: What are end-users looking for in HR software?

#### Findings:

End users want their software to be customized to the needs of their organization so that they can easily get the right information in right time. The software should be efficient in generating tailor-made report in time. They want their softwares to be user friendly so that people with little knowledge on computer can easily operate the software. For that reason they

want to be part of the developing team, so that they can give their inputs to make the software truly customized to their specific needs.

They want to have a well organized data bank with their software which will be flexible enough to use in other application softwares which are not directly related to their software. Software should have the flexibility to add additional features (customised reports) after developing the software keeping basics/backend unchanged

The software should be highly secured. They want to get round the clock assistance so that any kind of problem can be solved quickly. This is one of the most critical things that the end users want from their software vendors.

Integration of different softwares is another important thing that the end users want from the softwares to provide. For example, they want Payroll to be incorporated with HR general information system so that an individual can generate customized report regarding his/her financial status. This will also eliminate the duplication of job carried out by both HR and Finance personnel where Payroll and HR general information system are not integrated.

**Question 2: What are the major problems you are facing in using your HR software?**

**Findings:**

The main problem comes from not from the software itself but from the organizational itself over control of different functions. For example, Payroll is normally under finance department, but HR department also have to work on it. Therefore it is almost a repetitive job for both the departments to update any information of any of the employees. Higher authority doesn't know what actually they want for their particular organization. Therefore the users want it to be integrated so that repetition can be avoided as well as time is saved.



Most of the softwares are complicated. It takes special training to get used to with those softwares. Therefore, these are not user-friendly and therefore difficult to operate. Firms that use foreign softwares face the problem of technical assistance. It is time consuming to get assistance from foreign vendors.

The software is not flexible enough in generating customised report for the particular demand of the organization. Sometimes additional features are needed to be included, but the software is not flexible enough to add those extra features.

The needs of the users increase day by day. But softwares cannot be improved frequently. That's why there is always a gap between the expected service and the actual service end users get from the application softwares. Small organizations cannot buy softwares due to high price.

### **Question 3: How do you measure quality of software?**

#### **Findings:**

The discussants almost unanimously agreed that they measure the quality of the software by two factors: efficiency, and use-friendliness. By efficiency they meant whether the software can meet their demand with less effort and time, like ease in creating or customizing the report. The software should be user-friendly. It should have easy to navigate features so that people with little knowledge on computer can easily use the software.

The other things that can be considered as quality of the software are customizable options of the software, convenience to improve further, continuous technical assistance from the vendors, flexibility etc.

### **Question 4: Can your current HR software satisfy you? If not, why?**

#### **Findings:**

Most of the discussants said no to answer this question. According to them most of the software are complicated. It takes much time to be familiar with the software they use. They sometimes give erroneous report. Tailor-made reports cannot be generated for different needs of the organization using same information. Moreover customer service is not satisfactory. Lack of integration causes error in reports and waste of time. Absence of integration causes duplication of the same work.

**Question 5: What do you suggest for further improvement of your HR software?**

**Findings:**

Almost all of the participants in the FGD suggested there should be involvement of the users of the HR software during development process of the software so that they can give inputs to make the software more effective and user-friendly. It will also give them satisfaction if they actively participate in the development process. Acceptability will be higher among the users if they can be a part of the developing team.

The software should generate tailor-made report for different needs of the organization using common information. It should have data export facilities so that users can use the data with other applications for other purposes.

It should be intelligent enough to give automated notifications (e.g.: end of probationary period of any new joiner) from the system so that valuable time can be saved by the employees.

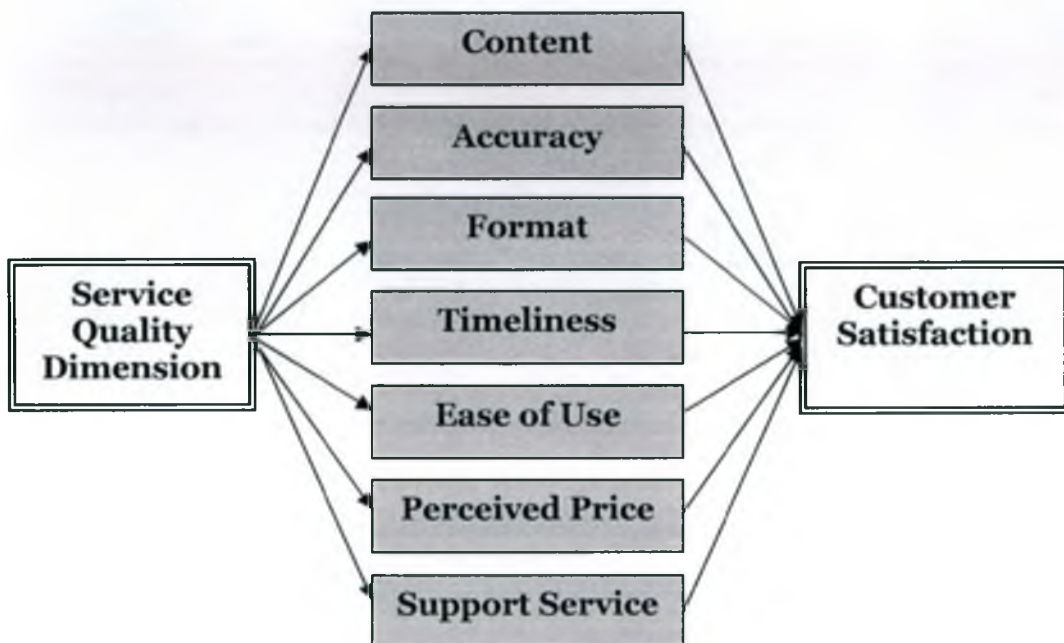
**3.3 Conceptual Framework for Software Service Quality:**

There were certain variables mentioned in the secondary literature that affect user's perception of quality software services. In the context of HR Software in Bangladesh, this study made it imperative to include additional variables to establish service quality criteria and their measures. Using the literature

survey, as the starting point for identifying the variables, this study added new ones to capture the characteristics of HR software as a validation procedure. Based on narrow down scope of literature review in the previous chapter, the relationship between service and customer satisfaction can be shown in figure 9. The instrument used in this study was adopted from EUCS (End User Customer Satisfaction) model.

The important components of quality software services in the context of Bangladesh, as derived from theoretical considerations and qualitative methods, are as follows.

Based on the finding of literature review as well as FGD, the user's perception of HR Software service quality induced seven factors: (1) Content, (2) Accuracy, (3) Format, (4) Timeliness, (5) Ease of Use, (6) Perceived Price and (7) Core Services.



**Figure 10:** Research Model for Software Service Quality & Customer Satisfaction

- **Content:** Contains whether software provides precise & trusty information; have automated notifications; can be integrated with other applications; and can include additional feature if needed.
- **Accuracy:** Contains whether software provides accurate information; functions as it promises; has excellent security; and has efficient data backup facility.
- **Format:** Contains whether software output is presented in a useful format; easy to read; visually appealing and well organized.
- **Ease of use:** contains whether software is simple to use; doesn't need technical computer experience to use; ensures user's involvement in development process and provides enough training to learn the system.
- **Timeliness:** Contains whether software performs the job right at first time; ensures quick response to your query; provides up-to-date information, and always available for work.
- **Price:** contains whether software price is reasonable; provides good value for money; and offers free support services.
- **Support Service:** contains whether software vendor have knowledge to answer question and solve problems; communicates with regular updates; and provides quick support services

Many researchers have proposed that improved service quality should lead to higher customer satisfaction (Anderson, Fornell and Lehman 1994; Bitner, Booms, and Mohr 1994; Bolton and Drew, 1994). From the descriptions above, this paper proposes a research model for Software service quality & customer Satisfaction (Figure 9)

### 3.4 Hypothesis Development:

Figure 10 indicates that Content, Accuracy, Format, Ease of use, Timeliness, and Price are the key factors that influence the user's perception of HR software. It is also pointed out that there is close relationship between each dimension of software quality and customer satisfaction. Thus, the research model encompasses hypotheses regarding antecedents of customer satisfaction.

Consistent with previous studies as well as FGD that employed the conceptual model, a number of hypotheses are suggested:

**Hypothesis:** There is a linear relationship between Software service quality dimensions and customer satisfaction.

- H1: There is a linear relationship between software's content and customer satisfaction.
- H2: There is a linear relationship between software's accuracy and customer satisfaction.
- H3: There is a linear relationship between software's format and customer satisfaction.
- H4: There is a linear relationship between software's ease of use and customer satisfaction.
- H5: There is a linear relationship between software's timeliness and customer satisfaction.
- H6: There is a linear relationship between software's price and customer satisfaction.
- H7: There is a linear relationship between software's support service and customer satisfaction.

## **Chapter Four (4): Quantitative Study**



## **4.0 Quantitative Study:**

*This chapter will present detailed research methodology for quantitative study. This includes refined research objectives, scope of the research, sample selection methods, and data collection methods. At the end of this methodology part validity and reliability issues will be discussed to follow the quality standards of the research.*

### **4.1 Problem statement**

- Knowledge on factors that contribute to measure user's perception of software quality of HR software in Bangladesh is very scant.

#### **4.1.1 Research Question**

- How can user perception on service quality be measured in regard to HR software in Bangladesh?

### **4.2 Broad Objective**

- To identify factor & measure user perception on factors for service quality of HR software in Bangladesh.

#### **4.2.1 Specific Objectives**

- To assess the influence of each quality attributes to user perception of HR software.
- To identify the factor that influences the user perception of service quality of HR software.
- To examine the importance of various factors effecting users' perception of HR software.
- To find out how whether there is a linear relationship between quality attributes and customer satisfaction.

- To provide information to the management to improve and enhance quality of HR software in Bangladesh.

### 4.3 Scope of the Research

- The research will be limited to finding the user perception of service quality of HR Software.
- The research will be done in Dhaka city, the hub of software business in the country.
- The survey will include user of HR software in different organization such as Garments & Textile, Pharmaceutical & Healthcare, Financial Institutions, Multinational companies and Group of companies in Bangladesh.

### 4.4 Survey Instrument

Based on literature survey and qualitative research, researchers have listed a pool of items on antecedents of service quality of HR software. A copy of the item-scale is enclosed in **appendix B**. Because of the psychometric problems associated with using expectation-performance gaps, this instrument only includes performance (Cronin and Taylor 1992). To collect the data from the users of HR software, the researcher selected an **executive Interview with self-administered structured questionnaire**.

### 4.5 Sampling Plan:

Primary data used in the study were collected from Dhaka city thorough survey of users of HR software. Here, the target population or sampling frame of this research consists of corporate users of HR software (sample element). Their opinions were mainly sought because they would be best able to evaluate existing levels of services and levels of satisfaction with such services. A list of local software developers of HR software were identified from BASIS

Directory (2007). By conducting pilot study a list of corporate (user of HR Software) users of HR software were confirmed from the local vendors (see annex-I.D).

Probability sampling using a two-stage cluster-sampling method was used to select a representative sample of users. The target population was divided into wide variety of industry sector (e.g., Garments & Textile, Pharmaceutical, Financial Institution, Manufacturing, MNC, and Group of companies). The entire sector covered by industry was considered a cluster. From each cluster, a number of companies (sample unit) were randomly selected after an enumeration of the companies was completed. The researcher generated data from different industry sectors to make the result generalizable. The clusters (industry sector) contain approximately the same number of sampling units. From each cluster 45 elements (users) were selected that gives a total sample of 225 sample elements ( $45 * 5 = 225$ ). Furthermore, from each sample unit, minimum of one to a maximum four sample elements (end users) were selected. This approach ensured that one or more end users provided their experiences with the HR system, thus minimizing the extent of common method variance bias and maximizing assessment of convergent & discriminant validity.

#### **4.5.1 Sample Size Determination:**

- a) **Specifying the Precision level:** When estimating a population parameter by using a sample statistic, the precision level is the desired size of the estimating interval. The researcher has set up precision level as  $\pm 0.15$  of the true population proportion.
- b) **Specifying the Confidence Level:** The confidence level is the probability that a confidence interval will include the population parameter. Here, the researcher assumed a 95% confidence level.

- c) **Determining the z value:** For a 95% confidence level, the probability that the population mean will fall outside one end of the interval is 0.025(0.05/2). The associated z value is 1.96.
- d) **Determining the standard deviation of the population:** The research has estimated the standard deviation by conducting pilot study which is 1.15.
- e) **Determining the sample size:** determined the sample size by using the following formula:

$$n = \left( \frac{ZS}{E} \right)^2$$

Where,  $E = Z \frac{S}{\sqrt{n}}$  is the maximum allowable error.

n is the size of the sample

Z is the standard normal values corresponding to the desired level of confidence

S is an estimate of the population standard deviation

- f) **Calculation:**

$$n = \left( \frac{1.96 * 1.15}{0.15} \right)^2$$

$$= 225$$

## 4.6 Validity & Reliability:

In order to reducing the possibility of getting the answer wrong, attention need to be paid to two particular on research design: reliability & validity (saunders et. al., 2003)

### 4.6.1 Validity:

Validity is concerned with whether the findings are really about what they appear to be about (Saunders et. al., 2003). Validity defined as the extent to which data collection method or methods accurately measure what they were intended to measure (saunders et. al., 2003). Yin (2003) states, “no single source has a complete advantage over all others” (p.85). The different sources are highly complementary, and a good case study should use as many sources as possible. The validity of scientific study increases by using various sources of evidence (Yin, 2003)

Numbers of different steps were taken to ensure the validity of the study:

- To ensure content validity, a through examination was made of the relevant literature. (see chapter two)
- Data was collected by FGD with open-ended questions and to support the result of the FGD quantitative survey was conducted by structured questionnaire. (see annex –I.A)
- Data was collected from reliable sources, respondents who are more experienced to use HR software. ( see Annex – I.B)
- Check list presented by (saunders et. al., 2003) was followed for designing semi-structured questionnaires.
- FGD and survey questions were made based on literature review and frame of reference to ensure the validity of the result. (See annex – I.C)

- Questionnaire has been pre-tested by the respondent before starting the FGD.
- A pre-test was also conducted to review the questionnaire for validity (measuring what is intended), completeness (including all relevant variable items), and readability (making it unlikely that surveyed subjects will misinterpret a particular question).
- Data has been collected between the periods of January to February 2009, within this short period of time no major events has been changed with the related topic.
- English as the main language was used during the interviews in order to avoid any chance of misinterpretation and misunderstanding.

#### **4.6.2 Reliability:**

According to saunders et. al. 2003, reliability refer to the degree to which data collection method or methods will yield consistent findings, similar observations would be made or conclusions reached by other researchers or there is transparency in how sense was made from the raw data. Reliability can be assessed by the following three questions:

1. Will the measures yield the same results on other occasions?
2. Will similar observation be reached by the observations?
3. Is there transparency in how sense was made from the raw data?

Numbers of different steps were taken to ensure the reliability of the study:

- Three persons were present during the whole FGD process.
- For recording the whole conversation a recorder was used and notes were taken by the two persons. After finishing the session cross check has been done with the written scripts to get the correct data.



- The same type of questions was used in all these sessions in order to increase the reliability.
- Survey questionnaire was divided into three parts in order that respondents could concentrate more on each question.
- The theories that have been selected for the study was clearly described and research question has been formulated based on the previous study. Data has been collected based on the frame of reference that was drawn from the discussed theories. The objective is to make sure that if another investigator will follow the same procedures and used the same sample, the conclusions would be made.
- Alpha Cronbach test has also been taken for the 27 items of software Service quality dimensions. In order to examine the variables were internally consistent of the current scale; a reliability assessment was carried out using Cronbach's alpha. A low value of Cronbach's alpha indicates the sample of items performs poorly in capturing the construct that motivated the measure and vice visa. Cronbach's alpha coefficient was calculated as 0.8527, exceed the minimum standard (0.70) suggested by Nunnally (1978), which indicates that the scale is quite reliable.

## **Chapter Five (5):**

### **Analysis, Findings & Conclusions**

## 5.0 Data Analysis, Findings & Conclusions:

*This chapter will present results from quantitative survey. At first quantitative data will be presented and analyzed according to the research questions and the variables identified in the frame of reference. Finally all research questions will be answered and general conclusions will be drawn. At the end implications for management, theory and future research will be addressed.*

### 5.1 Data analysis:

#### 5.1.1 Descriptive Analysis:

Table 7 measured results of the user perception of HR software quality on various attributes.

**Table 7: Descriptive Statistics**

Item Description	Sample Size	Mean	Std. Deviation
Simple to use	225	4.1333	.64087
Visually appealing	225	3.8578	.80581
Well organized	225	4.0133	.80445
Requires less experience to use	225	3.7067	.72777
Provides training to learn the system	225	3.5644	.93855
Provides automated notification	225	3.6622	.99177
Ensures user involvement	225	3.7867	.90079
Information is easy to read	225	4.2044	.63596
Provides precise information you need	225	4.0000	.63387
Provides information that you trust	225	4.1467	.65520

Provides accurate information	225	4.2933	.63612
Provides up-to-date information	225	4.2711	.60674
Output presented in useful format	225	3.5022	.65550
Ensures quick response to queries	225	4.0844	.69884
Can be integrated with other application	225	3.5289	.99567
Can include additional feature	225	3.7289	.99207
Has excellent security	225	3.9289	1.02831
Functions as it promises	225	3.8844	.72270
Always available for work	225	3.9778	.71617
Has efficient data backup facility	225	4.0356	.78409
Performs the job right at first time	225	3.7289	.77478
Price is reasonable	225	3.5333	.82916
Provides good value for money	225	3.8311	.71833
Offers free support services	225	3.2222	1.03701
Communicates with regular updates	225	3.5689	.91900
Provides quick support services	225	3.6889	.84574
Have knowledge to queries	225	3.8844	.77631

The data were analyzed with 27 statements. Each attributes averaged between Strongly Disagree (1) and Strongly Agree (5) on a five point Likert scale. The elements that users rated the highest in perception are, 'Provides accurate information' (M= 4.2933; Sd= .63612); 'Provides up-to-date information' (M= 4.2711; Sd= .60674); 'Information is easy to read' (M= 4.2044; Sd= .63596); 'Provides information that you trust (M= 4.1467; Sd= .65520) 'Simple to use'(M= 4.1333; Sd= .64087); 'Ensures quick response to queries' (M= 4.0844; Sd= .69884); 'Has efficient data backup facility' (M= 4.0356; Sd=

.78409); 'Well organised' ( M= 4.0133; Sd= .80445); 'Provides precise information you need' (M= 4.0000; Sd= .63387); 'Always available for work' (M=3.9778; Sd= .71617); 'Has excellent security' (M=3.9289; Sd= 1.02831); 'Have knowledge to queries' (M= 3.8844; Sd= .77631); 'Functions as it promises' (M= 3.8844; Sd= .72270); 'Visually appealing' (M=3.8578; Sd= .80581); 'Provides good value for money' (M=3.8311; Sd= .71833); 'Ensures user involvement' (M= 3.7867; Sd= .90079); 'Performs the job right at first time' (M=3.7289; Sd= .77478); 'Can include additional feature' (M=3.7289; Sd= .99207); 'Requires less experience to use' (M= 3.7067; Sd= .72777); 'Provides quick support services' (M=3.6889; Sd= .84574); 'Provides automated notification' (M= 3.6622; Sd= .99177); "Communicates with regular updates" (M= 3.5689; Sd= .91900); 'Provides training to learn the system' (M= 3.5644; Sd= .93855); "Price is reasonable" (M= 3.5333; Sd= .82916); 'Can be integrated with other application' (M= 3.5289; Sd= .99567); 'Output presented in useful format' (M= 3.5022; Sd= .65550); 'Offers free support services' (M= 3.2222; Sd= 1.03701).

### 5.1.2 Factor Analysis

To test the dimensionality of the instrument, all 27 items (see table 8) were factor analyzed using principal component. This analysis suggests that eight factors were chosen in term of eigenvalue of larger than 1.0. The Barlett's test of sphericity was significantly indicating high correlation between the variables. The number of factors was unconstrained. For the sake of convergent validity, 0.5 was used as a factor loading cut-off point. This criterion resulted in eight factors totaling 22 items (see table 8). These factors are labeled Support Service; Compatibility; Ease of use; User participation; Content; Format; Reliability and Price. The identified factor presented 61% percent of the variance of the variables.

**Table 8: Factor influencing the Software Service Quality**

<i>Factor</i>	<i>Factor Interpretation( % variance explained</i>	<i>Factor loading</i>	<i>Variables included in the factor</i>
F1	Support Service ( 9.5% )	0.740 0.731 0.709 0.659	Communicates with regular updates Have knowledge to answer the queries Provides quick support services Offers free support services
F2	Compatibility ( 9.3% )	0.722 0.714 0.714	Can be integrated with other application Can include additional feature Has excellent security
F3	Ease of Use ( 8.7% )	0.714 0.575 0.566 0.563	Simple to use Visually appealing Well organized Information is easy to read
F4	User Participation ( 8% )	.928 .925	Requires less experience to use Provides training to learn the system
F5	Content ( 7.6% )	.651 .645 .600	Provides up-to-date information Provides accurate information Always available for work
F6	Format ( 7.1% )	.849 .816	Provides automated notification Output presented in useful format
F7	Reliability ( 5.6% )	.734 .673	Provides precise information you need Performs the job right at first time
F8	Price ( 5.3% )	.683 .607	Provides good value for money Price is reasonable



### 5.1.3 Regression Analysis:

This section presents the hypothesis testing result.

H1: The better the support service is provided by the software vendor, the higher the customer satisfaction becomes. There is a linear relationship between software support service dimension and customer satisfaction.

To test the above mentioned hypothesis, linear regression analysis was used. Referring to hypothesis 1, the result (Table-9) of regression analysis shows that a significant ( $p= 0.000$ ) linear relationship exists between the support service dimension and customer satisfaction. Thus, this factor is the significant predictor of customer satisfaction. It also indicates that 10.5 percent of the variation in the customer satisfaction can be explained by the factor.

Table-9: Linear Relationship between support service dimension and Customer Satisfaction

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.330(a)	.109	.105	.69227		
ANOVA (b)					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	13.059	1	13.059	27.249	.000(a)
Residual	106.870	223	.479		
Total	119.929	224			
a Predictors: (Constant), Support Service					
b Dependent Variable: Overall satisfaction					

H2: The more compatibility feature is offered by the software vendor, the higher the customer satisfaction becomes. There is a linear relationship between software compatibility dimension and customer satisfaction.

To test the above mentioned hypothesis, linear regression analysis was used. Referring to hypothesis 2, the result (Table-10) of regression analysis shows that a significant ( $p= 0.000$ ) linear relationship exists between the compatibility dimension and customer satisfaction. Thus, this factor is the significant predictor of customer satisfaction. It also indicates that 7.4% percent of the variation in the customer satisfaction can be explained by the factor.

Table-10: Linear Relationship between compatibility dimension and Customer Satisfaction

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.279(a)	.078	.074	.70420		
ANOVA (b)					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.344	1	9.344	18.842	.000(a)
Residual	110.585	223	.496		
Total	119.929	224			
a Predictors: (Constant), Compatibility b Dependent Variable: Overall satisfaction					

H<sub>3</sub>: The better the “ease of use” is ensured by the software vendor, the higher the customer satisfaction becomes. There is a linear relationship between software “ease of use” dimension and customer satisfaction.

To test the above mentioned hypothesis, linear regression analysis was used. Referring to hypothesis 3, the result (Table-9) of regression analysis shows that a significant ( $p= 0.000$ ) linear relationship exists between the “Ease of use” dimension and customer satisfaction. Thus, this factor is the significant predictor of customer satisfaction. It also indicates that 9.3 percent of the variation in the customer satisfaction can be explained by the factor.

Table-11: Linear Relationship between “Ease of Use” dimension and Customer Satisfaction

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.311(a)	.097	.093	.69704		
ANOVA (b)					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.580	1	11.580	23.834	.000(a)
Residual	108.349	223	.486		
Total	119.929	224			
a Predictors: (Constant), Ease of Use b Dependent Variable: Overall satisfaction					

H4: The more user participation is ensured by the software vendor, the higher the customer satisfaction becomes. There is a linear relationship between software ‘user participation’ dimension and customer satisfaction.

To test the above mentioned hypothesis, linear regression analysis was used. Referring to hypothesis 4, the result (Table-12) of regression analysis shows that a significant ( $p= 0.026$ ) linear relationship exists between the user participation dimension and customer satisfaction. Thus, this factor is the significant predictor of customer satisfaction. Only 1.8 percent of the variation in the customer satisfaction can be explained by the variable user participation.

Table-12: Linear Relationship between user participation dimension and Customer Satisfaction

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.148(a)	.022	.018	.72524		
ANOVA (b)					
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2.636	1	2.636	5.011	.026(a)
Residual	117.293	223	.526		
Total	119.929	224			
a Predictors: (Constant), User Participation b Dependent Variable: Overall satisfaction					

H5: The better the “content” is presented by the software vendor, the higher the customer satisfaction becomes. There is a linear relationship between software “content” dimension and customer satisfaction.

To test the above mentioned hypothesis, linear regression analysis was used. Referring to hypothesis 5, the result (Table-13) of regression analysis shows that a significant ( $p= 0.002$ ) linear relationship exists between the user participation dimension and customer satisfaction. Thus, this factor is the significant predictor of customer satisfaction. Only 3.9 percent of the variation in the customer satisfaction can be explained by the variable content.

Table-13: Linear Relationship between user participation dimension and Customer Satisfaction

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.207(a)	.043	.039	.71748		
ANOVA (b)					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.132	1	5.132	9.969	.002(a)
Residual	114.797	223	.515		
Total	119.929	224			
a Predictors: (Constant), Content b Dependent Variable: Overall satisfaction					

H6: The better the “format” is presented by the software vendor, the higher the customer satisfaction becomes. There is a linear relationship between software “format” dimension and customer satisfaction.

To test the above mentioned hypothesis, linear regression analysis was used. Referring to hypothesis 6, the result (Table-14) of regression analysis shows that a significant ( $p= 0.000$ ) linear relationship exists between the format dimension and customer satisfaction. Thus, this factor is the significant predictor of customer satisfaction. It also indicates that 6.0 percent of the variation in the customer satisfaction can be explained by the variable format.

Table-14: Linear Relationship between format dimension and Customer Satisfaction

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.252(a)	.064	.060	.70959		
ANOVA (b)					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.644	1	7.644	15.180	.000(a)
Residual	112.285	223	.504		
Total	119.929	224			
a Predictors: (Constant), Format b Dependent Variable: Overall satisfaction					



H7: The more reliability feature is offered by the software vendor, the higher the customer satisfaction becomes. There is a linear relationship between software ‘reliability’ dimension and customer satisfaction.

To test the above mentioned hypothesis, linear regression analysis was used. Referring to hypothesis 7, the result (Table-10) of regression analysis shows that a significant ( $p= 0.000$ ) linear relationship exists between the reliability dimension and customer satisfaction. Thus, this factor is the significant predictor of customer satisfaction. It also indicates that 8.0 percent of the variation in the customer satisfaction can be explained by the variable reliability.

Table-15: Linear Relationship between reliability dimension and Customer Satisfaction

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.291(a)	.085	.080	.70166		
ANOVA (b)					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	10.140	1	10.140	20.597	.000(a)
Residual	109.788	223	.492		
Total	119.929	224			
a Predictors: (Constant), Reliability b Dependent Variable: Overall satisfaction					

H8: The more reasonable price is ensured by the software vendor, the higher the customer satisfaction becomes. There is a linear relationship between software 'price' dimension and customer satisfaction.

To test the above mentioned hypothesis, linear regression analysis was used. Referring to hypothesis 8, the result (Table-16) of regression analysis shows that a significant ( $p= 0.013$ ) linear relationship exists between the price dimension and customer satisfaction. Thus, this factor is the significant predictor of customer satisfaction. Only 2.3 percent of the variation in the customer satisfaction can be explained by the variable price.

Table-16: Linear Relationship between price dimension and Customer Satisfaction

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.165(a)	.027	.023	.72327		
ANOVA (b)					
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3.272	1	3.272	6.254	.013(a)
Residual	116.657	223	.523		
Total	119.929	224			
a Predictors: (Constant), Price b Dependent Variable: Overall satisfaction					

#### 5.1.4 Correlation:

Factor analysis of the responses resulted in eight dimensions (i.e. Support Service; Compatibility; Ease of use; User participation; Content; Format; Reliability and Price) from twenty-seven items used for the study wherefrom five items were neglected due to low reliability. It revealed (Figure 10) that the 'Content'; 'Format'; 'Ease of use'; 'Price' and 'Support Services' dimensions appear relatively unambiguous. The 'Ease of use' dimension appears to split into two separate factors namely 'Ease of use' and 'User Participation'. The result also shows that the factor loading are predominantly consistent with the conceptual framework and added two new dimensions namely "compatibility" and "reliability". Items in the comparability dimension shown in table 8 are related to the characteristics of functionality of HR software. On the other hand, items in the dimensions of reliability are respectively related to the characteristics of usability and performance of the software. This finding is significant in view of the fact that it added new dimensions to existing literature. These outcomes therefore suggest a slightly different orientation of the original conceptual framework.

The result, depicted in Table 17, shows that software quality dimensions (i.e. Support Service; Compatibility; Ease of use; User participation; Content; Format; Reliability and Price) and customer satisfaction were significantly correlated. Specially, software support service has the strongest effects on the consequence of customer satisfaction. In table 17, we find that support service along with ease of use, reliability, compatibility, format and content of the software seems to be the most important antecedent of the user satisfaction for HR software. However, price dimension & user participation seems to be less important compared to others.

**Table 17:** Correlation between Eight Antecedents and Customer Satisfaction

	User Overall Satisfaction
Support Service	.33*
Ease of use	.31*
Reliability	.29*
Compatibility	.28*
Format	.25*
Content	.20*
Price	.16**
User Participation	.15***
* Significant at p = 0.00 ** Significant at p = 0.01 *** Significant at p = 0.02	

## 5.2 Conclusions:

The objective of this study was to increase our current understanding of the user perception of HR software in Bangladesh. The study explored the much unexplained area of user perception towards application (HR) software and user satisfaction. The major findings of the study indicate that the factor underlying the use of HR software are Support Service; Compatibility; Ease of use; User participation; Content; Format; Reliability and Price. The result shows that a significant linear relationship exists between software service quality dimensions and customer satisfaction. Finally, the findings also reveal that factors such as support service, ease of use, reliability, compatibility, format and content have strong influence over user satisfaction.

The locally developed HR software have not yet been able to enter the corporate world in Bangladesh in a visible manner. The local vendors can benefit from emphasizing on the factors as identified in this research.

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## **ANNEX – I.A: DESCRIPTION OF FGD**

### **Focus Group Discussion**

Location:	New Horizons CLC, Dhanmondi, Dhaka.
Time:	6:30 p.m
Duration:	1 and 1/2 hours
Participants:	HR Managers
Participants (Group 1) :	Date 15 <sup>th</sup> April 2007
Participants (Group 2):	Date 16 <sup>th</sup> April 2007

### **Moderator:**

- Mohammad Rabiul Kabir

### **Record Keeper & Note-Keeper:**

- Tarek Mohammed Enamul Hoque
- Mir Farhad Alam

### **Instruments used for recording:**

An MP3 player was used to record the whole discussion.

Major points were written down additionally as a safety measure.

## **Welcome Speech:**

Start with welcoming the audience

## **Purpose:**

I am currently conducting a research, as a partial requirement of my M.Phil degree in IBA (Institute of Business Administration). The research entitled "*An investigation into the determinants of service quality & customer satisfaction with application software development companies in Bangladesh*". The main objective of the research is to find out what user think about quality HR software.

The reason we have decided to conduct FGD as existing knowledge for measuring software quality is inadequate. This method (FGD) will allow as validating and constructing the questionnaire. Furthermore, the subject under investigation is complex and comprises a number of variables. This focus group discussion will allow us to concentrate time and resources on the study's most relevant variables.

## **Procedures & Ground roles:**

- The discussion will take place approx. 45 minutes
- A certain issue will be raised for discussion
- All members are encouraged for open participate.
- We will not use your name in our documents and your participation will be kept confidential.
- We would also like to remind that all opinions are welcome and valued.

**Questions Discussed:**

Q1. What are end-users looking for in HR software?

.....  
.....

Q2. What are the major problems you are facing in using your HR software?

.....  
.....

Q3. How do you measure quality of software?

.....  
.....

4: Can your current HR software satisfy you? If not, why?

.....  
.....

5: What do you suggest for further improvement of your HR software?

.....  
.....

## **Annex – I.B: SoftQual Survey Questionnaire**

### **PART A: Introduction**

I am a student of M.Phil program in IBA, Currently I am conducting a research titled “*An investigation into the determinants of service quality & customer satisfaction with application software development companies in Bangladesh*” as a partial fulfillment of the M.Phil program, under the supervision of Iftekhar Ghani Chowdhury, Professor, IBA, DU. All the information received will be kept confidential and will be used for academic purpose only. Your kind cooperation will be highly appreciated.

### **Part B: HR Software Usage**

Q1: Please indicate the source of the HR software you use.

- Local Vendor    International Vendor    Self-developed

Q2: Please specify the name of the local vendor who developed the software for you.

.....

Q3: This question is about the level of services you use from your HR software. Which of these statements best describe the way you use your HR software?

- I regularly create & update the employee information  
 I use the search facility  
 I use automated notification feature  
 I regularly generate report

**Part C: Measuring Software Service Quality**

Q4: Please indicate the extent to which you agree or disagree with the following statements concerning the service you received from HR software.

- SD = Strongly Disagree
- D = Disagree
- N = Neither agree nor disagree
- A = Agree
- SA = Strongly agree

Software is simple to use

SD  D  N  A  SA

Software is visually appealing

SD  D  N  A  SA

Software content is well organized

SD  D  N  A  SA

Software doesn't need technical computer experience to use

SD  D  N  A  SA

Software vendor provides enough training to learn the system

SD  D  N  A  SA

Software provides automated notifications

SD  D  N  A  SA

Software ensures user's involvement in development process

SD  D  N  A  SA

Software information is easy to read

SD  D  N  A  SA

Software provides precise information you need

SD  D  N  A  SA

Software provides the information that you trust

SD  D  N  A  SA

Software provides accurate information

SD  D  N  A  SA

Software provide up-to-date information

SD  D  N  A  SA

Software output is presented in useful format

SD  D  N  A  SA

Software ensures quick response to your query

SD  D  N  A  SA

Software can be integrated with other applications

SD  D  N  A  SA

Software can include additional feature if needed

SD  D  N  A  SA

Software has excellent security

SD  D  N  A  SA

Software functions as it promises

SD  D  N  A  SA

Software is always available for work

SD  D  N  A  SA

Software has efficient data backup facility

SD  D  N  A  SA

Software performs the job right at first time

SD  D  N  A  SA

Software price is reasonable

SD  D  N  A  SA

Software provides good value for money

SD  D  N  A  SA

Software vendor offers free support services

SD  D  N  A  SA

Software vendor (support staff) communicates with regular updates

SD  D  N  A  SA

Software support staff provides quick support services

SD  D  N  A  SA



Software support staffs have knowledge to answer question and solve problems

SD  D  N  A  SA

Software meets your overall satisfaction

SD  D  N  A  SA

#### **PART D: Data Classification**

Designation:

Department:

Name of the Organization:

Type of Organization:

Gender:  Male  Female

Age Range:  20-25  26-30  31-35

36-40  41-45  46+

Length of service:  1 – 2 (years)  3-4  5-6

7-8  9-10  10+

Education:  Masters Degree  Bachelor Degree

H.S.C  S.S.C or bellow

#### **PART E: Conclusion**

Thanks for your time and taking part in this survey. I would like to remind you that your opinion is valuable for our study. As part of our quality control procedures, someone from our project team may re-contact you to ask a couple of questions verifying some of the information we just received.

**Annex-I.C: FRAME OF REFERENCE**

<b><i>Frame of Reference : Item Scale</i></b>
<b><i>Content</i></b>
C1: Software provides precise information you need
C2: Software provides the information that you trust
C3: Software provides automated notifications
C4: Software can be integrated with other applications
C5: ware can include additional feature if needed
<b><i>Accuracy:</i></b>
A1: Software provides accurate information
A2: Software functions as it promises
A3: Software has excellent security
A4: Software has efficient data backup facility
<b><i>Format:</i></b>
F1: Software output is presented in useful format
F2: Software information is easy to read
F3: Software is visually appealing
F4: Software content is well organized
<b><i>Ease of use</i></b>
E1: Software is simple to use
E2: Software doesn't need technical computer experience to use
E3: Software ensures user's involvement in development process
E4: Software vendor provides enough training to learn the system
<b><i>Timeliness</i></b>
T1: Software performs the job right at first time
T2: Software ensures quick response to your query
T3: Software provide up-to-date information
T4: Software is always available for work
<b><i>Price:</i></b>
P1: Software price is reasonable
P2: Software provides good value for money
P3: Software vendor offers free support services
<b><i>Support Service:</i></b>
S1: Software vendor (support staffs) have knowledge to answer question and solve problems
S2: Software vendor (support staff) communicates with regular updates
S3: Software vendor (support staff) provides quick support services

**ANNEX – I.D List of Surveyed Companies**

<b>Pharmaceuticals &amp; Healthcare</b>	
<b><i>Company Name</i></b>	<b><i>No. elements Selected</i></b>
ACME Laboratories	3
ACI Ltd	2
LABAID Group	3
Popular Group	3
IBN SINA Trust	4
INCEPTA Pharma	3
MEDINOVA Ltd	2
BEXIMCO Pharma	2
EDEN MultiCare Hospital	2
COMFORT LTD	2
Central Hospital Ltd	2
Northern Int. Hospital	3
RENATA Ltd	1
RENISSANCE HOSPITAL LTD	1
JAPAN BANG HOS. LTD	1
RADIANT Pharma	2
Modern Diagnostic	1
BANGLADESH Medical	1
SONARGAON Healthcare Ltd	1
PG Hospital	1
ZH SIKDER Medical	2
Metropolitian Medical Centre	1
Shomotina Hospital	1
<b>Total Number of Elements</b>	<b>(45)</b>
<b>Financial Institutions</b>	
<b><i>Company Name</i></b>	<b><i>No. elements Selected</i></b>
Shahajalal Islami Bank	4
Janata Bank	3
Social Investment Bank Ltd	4
Prime Bank Limited	3

Estern Bank Limited	4
Dhaka Bank Limited	4
Standard Chartered Bank Limited	3
IFIC Bank Limited	4
Trust Bank Limited	3
UCB Ltd	2
AB Bank Limited	3
NCC Bank Limited	1
Mutual Trust Bank Limited	1
Islamic Bank Bang Limited	1
Basic Bank Limited	1
Al-Arafah Islamic Bank Ltd	1
Delta life Insurance Ltd	1
National Life Ltd	1
Eastern Insurance Limited	1
<b>Total Number of Elements</b>	<b>(45)</b>
<b>Group of Companies</b>	
<b><i>Company Name</i></b>	<b><i>No. elements Selected</i></b>
Pran Group	2
Epyllion Group	4
Amin Mohammad Group	2
Mohammadi Group	3
Babylon Group	3
Dekko Group	2
Nourish Group	3
Palmal Group	2
Rangs Group	1
Paradise Group	1
Jahanabad Group	1
Samadson Group	2
KAI Group	1
Orient Group	1
One Group	1
Westin Group	2

Alana Group	1
Amtranet Group	1
Vision Group	1
Square Group	1
Flora Limited	1
Continental Group	1
Prothom Alo	1
Al-muslin Group	1
URMI Group	1
CEMS Bangladesh	1
ACME Group	2
Beximco Group (Bijoy)	1
Shovro Groups	1
<b>Total Number of Elements</b>	<b>(45)</b>
<b>Garments &amp; Textiles</b>	
<b><i>Company Name</i></b>	<b><i>No. elements Selected</i></b>
P&R Fashion Ltd	1
Concorde Garments Ltd	4
Niagra Textile ltd	2
Kayaba knitwear Ltd	1
Roots Knittex Ltd	1
Sindhu Knit Composite (BD) Ltd	1
Korth Knit	1
Miami Garments	1
Epyllion Knitex Ltd	1
Haseen Kayaba Garments	2
Gemcon Garments	1
Sana Sweaters	1
Angels Kniting Ltd	1
Sadia Knit Fashion	1
M M Knitwear Ltd	2
R R Sweaters Ltd	1
A J International	1
Ostrich Apparels Ltd	1

Padma Satel Arab Fashion Ltd	1
Sleek Knit Garments Ltd	1
Farhadia Fashions	1
Cotton Tex. Ltd	1
R R Acrylic Ltd	1
Fashion Art Ltd	1
Waqfi Knit Fabrics	2
Life Textile (Pvt) Ltd	1
B.H.S Fashion Ltd	1
Aznat Garments	1
Qunic Fashions	1
Woodland Software Ltd	1
Mylly Fashion Ltd	1
Savar Garments Ltd	1
Silver Line Textile Ltd	1
Diana Garments (PVT.) Ltd	1
Lithe Apparels Ltd	2
<b>Total Number of Elements</b>	<b>(45)</b>
<b>Multinational Companies</b>	
<b><i>Company Name</i></b>	<b><i>No. elements Selected</i></b>
DHL	5
Citycell	2
Siemens	2
Nokia	1
AKTEL	3
Warid	3
Grameen	1
Nestle	1
Huawei	1
Fu-Wang Foods	1
Butterfly	4
Holcim	2
Cemex	1
ABX Logistics	1



Gulf Air	1
Korean Air	1
Intertek	1
Haier	1
Li & Fung	1
Alcatel	1
Lafarge	1
Fusion Air Ltd	1
Banglalink	2
Chevron	1
Sony	3
Hitachi	2
Uni-Ligistics Ltd	1
<b>Total Number of Elements</b>	<b>(45)</b>

**ANNEX – I.E: SPSS OUTPUT**

## Reliability

\*\*\*\*\* Method 1 (space saver) will be used for this analysis \*\*\*\*\*

R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   ( A L P H A )

	Mean	Std Dev	Cases
1.	4.1333	.6409	225.0
2.	3.8578	.8058	225.0
3.	4.0133	.8045	225.0
4.	3.7067	.7278	225.0
5.	3.5644	.9385	225.0
6.	3.6622	.9918	225.0
7.	3.7867	.9008	225.0
8.	4.2044	.6360	225.0
9.	4.0000	.6339	225.0
10.	4.1467	.6552	225.0
11.	4.2933	.6361	225.0
12.	4.2711	.6067	225.0
13.	3.5022	.6555	225.0
14.	4.0844	.6988	225.0
15.	3.5289	.9957	225.0
16.	3.7289	.9921	225.0
17.	3.9289	1.0283	225.0
18.	3.8844	.7227	225.0
19.	3.9778	.7162	225.0
20.	4.0356	.7841	225.0
21.	3.7289	.7748	225.0
22.	3.5333	.8292	225.0
23.	3.8311	.7183	225.0
24.	3.2222	1.0370	225.0
25.	3.5689	.9190	225.0
26.	3.6889	.8457	225.0
27.	3.8844	.7763	225.0

R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   ( A L P H A )

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Alpha if Item Deleted
P1	99.6356	93.4202	.3517	.8490
P2	99.9111	91.2599	.4078	.8472
P3	99.7556	91.2569	.4088	.8472
P4	100.0622	93.1925	.3178	.8499
P5	100.2044	91.5830	.3186	.8506
P6	100.1067	89.3011	.4216	.8469
P7	99.9822	91.1872	.3597	.8489
P8	99.5644	94.3362	.2790	.8508
P9	99.7689	93.5535	.3451	.8492
P10	99.6222	93.2272	.3581	.8489
P11	99.4756	93.4827	.3496	.8491
P12	99.4978	92.8315	.4266	.8474
P13	100.2667	92.0714	.4520	.8465
P14	99.6844	92.2169	.4084	.8474
P15	100.2400	87.7457	.5066	.8436
P16	100.0400	89.9671	.3845	.8483
P17	99.8400	88.1439	.4654	.8452
P18	99.8844	90.7187	.5046	.8446
P19	99.7911	91.5321	.4482	.8463
P20	99.7333	91.1964	.4258	.8467
P21	100.0400	92.9225	.3123	.8501
P22	100.2356	92.8237	.2927	.8509
P23	99.9378	92.7461	.3560	.8488
P24	100.5467	91.3918	.2885	.8524
P25	100.2000	90.9375	.3654	.8488
P26	100.0800	88.2079	.5832	.8414
P27	99.8844	90.9955	.4449	.8461

Analysis of Variance

Source of Variation	Sum of Sq.	DF	Mean Square	F	Prob.
---------------------	------------	----	-------------	---	-------

Between People	814.5919	224	3.6366	
Within People	3530.2222	5850	.6035	
Between Measures	410.5386	26	15.7899	29.4776 .0000
Residual	3119.6836	5824	.5357	
Nonadditivity	11.7786	1	11.7786	22.0685 .0000
Balance	3107.9050	5823	.5337	
Total	4344.8142	6074	.7153	
Grand Mean	3.8433			



R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   ( A L P H A )

Tukey estimate of power to which observations must be raised to achieve additivity = 2.7778

Reliability Coefficients

N of Cases = 225.0

N of Items = 27

Alpha = .8527

# Descriptives

## Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Simple to use	225	1.00	5.00	4.1333	.64087
Visually appealing	225	1.00	5.00	3.8578	.80581
Well organised	225	1.00	5.00	4.0133	.80445
Requires less experience to use	225	2.00	5.00	3.7067	.72777
Provides training to learn the system	225	1.00	5.00	3.5644	.93855
Provides automated notification	225	1.00	5.00	3.6622	.99177
Ensures user involvement	225	1.00	5.00	3.7867	.90079
Information is easy to read	225	2.00	5.00	4.2044	.63596
Provides precise information you need	225	2.00	5.00	4.0000	.63387
Provides information that you trust	225	1.00	5.00	4.1467	.65520
Provides accurate information	225	2.00	5.00	4.2933	.63612
Provides up-to-date information	225	2.00	5.00	4.2711	.60674
Output presented in useful format	225	2.00	5.00	3.5022	.65550
Ensures quick response to queries	225	2.00	5.00	4.0844	.69884
Can be integrated with other application	225	1.00	5.00	3.5289	.99567
Can include additional feature	225	1.00	5.00	3.7289	.99207
Has excellent security	225	1.00	5.00	3.9289	1.02831
Functions as it promises	225	1.00	5.00	3.8844	.72270
Always available for work	225	1.00	5.00	3.9778	.71617
Has efficient data backup facility	225	2.00	5.00	4.0356	.78409
Performs the job right at first time	225	2.00	5.00	3.7289	.77478

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Price is reasonable	225	1.00	5.00	3.5333	.82916
Provides good value for money	225	2.00	5.00	3.8311	.71833
Offers free support services	225	1.00	5.00	3.2222	1.03701
Communicates with regular updates	225	1.00	5.00	3.5689	.91900
Provides quick support services	225	1.00	5.00	3.6889	.84574
Have knowledge to queries	225	1.00	5.00	3.8844	.77631
Valid N (listwise)	225				

# Factor Analysis

## KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.780
Bartlett's Test of Sphericity	Approx. Chi-Square df Sig.
	2077.846 351 .000

Dhaka University Institutional Repository

	Simple to use	Visually appealing	Well organised	Requires less experience to use	Provides training to learn the system	Provides automated notification	Ensures user involvement	Information is easy to read
<b>Sig. (1-tailed)</b>								
Simple to use	.000							
Visually appealing	.000	.000						
Well organised	.000	.000	.000					
Requires less experience to use	.061	.262	.002	.000	.000	.003	.274	.049
Provides training to learn the system	.029	.267	.000	.000	.001	.001	.213	.046
Provides automated notification	.004	.021	.000	.003	.001		.000	.076
Ensures user involvement	.037	.002	.003	.274	.213	.000		.019
Information is easy to read	.000	.001	.000	.049	.046	.076	.019	
Provides precise information you need	.010	.003	.000	.443	.455	.001	.002	.001
Provides information that you trust	.000	.000	.001	.112	.212	.264	.106	.002
Provides accurate information	.010	.016	.009	.037	.062	.000	.009	.001
Provides up-to-date information	.013	.003	.000	.067	.131	.000	.002	.000
Output presented in useful format	.002	.015	.000	.008	.001	.000	.002	.003
Ensures quick response to queries	.000	.002	.000	.130	.173	.000	.007	.000
Can be integrated with other application	.001	.000	.002	.017	.014	.000	.000	.430
Can include additional feature	.084	.000	.231	.352	.488	.008	.001	.063
Has excellent security	.005	.000	.021	.258	.223	.035	.027	.011
Functions as it promises	.001	.000	.000	.094	.074	.009	.010	.000
Always available for work	.045	.000	.040	.476	.493	.006	.000	.000
Has efficient data backup facility	.001	.000	.000	.438	.310	.003	.098	.000
Performs the job right at first time	.029	.011	.005	.495	.377	.065	.003	.418

Correlation Matrix

Sig (1-tailed)	Simple to use	Visually appealing	Well organised	Requires less experience to use	Provides training to learn the system	Provides automated notification	Ensures user involvement	Information is easy to read
Price is reasonable	.084	.096	.261	.000	.000	.357	.221	.173
Provides good value for money	.278	.260	.113	.000	.000	.065	.012	.243
Offers free support services	.487	.167	.071	.022	.007	.002	.008	.176
Communicates with regular updates	.045	.007	.099	.000	.000	.005	.004	.148
Provides quick support services	.006	.000	.000	.001	.000	.000	.000	.124
Have knowledge to answer the queries	.001	.019	.135	.482	.475	.003	.000	.237



## Correlation Matrix

	Provides precise information you need	Provides information that you trust	Provides accurate information	Provides up-to-date information	Output presented in useful format	Ensures quick response to queries	Can be integrated with other application	Can include additional feature
Sig. (1-tailed)	.010	.000	.010	.013	.002	.000	.001	.084
Simple to use	.003	.000	.016	.003	.015	.002	.000	.000
Visually appealing	.000	.001	.009	.000	.000	.000	.002	.231
Well organised	.443	.112	.037	.067	.008	.130	.017	.352
Requires less experience to use	.455	.212	.062	.131	.001	.173	.014	.488
Provides training to learn the system	.001	.264	.000	.000	.000	.000	.000	.008
Provides automated notification	.002	.106	.009	.002	.002	.007	.000	.001
Ensures user involvement	.001	.002	.001	.000	.003	.000	.430	.063
Information is easy to read	.000	.000	.023	.000	.005	.000	.005	.001
Provides precise information you need	.000	.000	.000	.014	.095	.000	.001	.001
Provides information that you trust	.023	.000	.000	.000	.000	.001	.010	.004
Provides accurate information	.000	.014	.000	.000	.000	.000	.052	.000
Provides up-to-date information	.005	.095	.000	.000	.002	.002	.000	.006
Output presented in useful format	.000	.000	.001	.052	.000	.000	.000	.001
Ensures quick response to queries	.005	.001	.010	.000	.000	.000	.000	.000
Can be integrated with other application	.001	.001	.004	.000	.006	.001	.000	.000
Can include additional feature	.016	.000	.000	.002	.003	.000	.000	.000
Has excellent security	.001	.000	.003	.000	.033	.000	.000	.000
Functions as it promises	.002	.000	.000	.000	.003	.000	.000	.000
Always available for work	.002	.000	.001	.000	.000	.000	.000	.001
Has efficient data backup facility	.000	.000	.005	.000	.007	.031	.011	.054
Performs the job right at first time								

Correlation Matrix

	Provides precise information you need	Provides information that you trust	Provides accurate information	Provides up-to-date information	Output presented in useful format	Ensures quick response to queries	Can be integrated with other application	Can include additional feature
Sig. (1-tailed)	.223	.295	.272	.027	.241	.328	.001	.066
Price is reasonable								
Provides good value for money	.053	.468	.226	.362	.023	.021	.000	.026
Offers free support services	.078	.051	.446	.063	.012	.042	.011	.268
Communicates with regular updates	.284	.153	.165	.347	.004	.037	.003	.287
Provides quick support services	.012	.055	.015	.000	.000	.003	.000	.002
Have knowledge to answer the queries	.039	.001	.012	.011	.002	.003	.000	.001

## Correlation Matrix

	Has excellent security	Functions as it promises	Always available for work	Has efficient data backup facility	Performs the job right at first time	Price is reasonable	Provides good value for money	Offers free support services
Sig. (1-tailed)								
Simple to use	.005	.001	.045	.001	.029	.084	.278	.487
Visually appealing	.000	.000	.000	.000	.011	.096	.260	.167
Well organised	.021	.000	.040	.000	.005	.261	.113	.071
Requires less experience to use	.258	.094	.476	.438	.495	.000	.000	.022
Provides training to learn the system	.223	.074	.493	.310	.377	.000	.000	.007
Provides automated notification	.035	.009	.006	.003	.065	.357	.065	.002
Ensures user involvement	.027	.010	.000	.098	.003	.221	.012	.008
Information is easy to read	.011	.000	.000	.000	.418	.173	.243	.176
Provides precise information you need	.016	.001	.002	.002	.000	.223	.053	.078
Provides information that you trust	.000	.000	.000	.000	.000	.295	.468	.051
Provides accurate information	.000	.003	.000	.001	.005	.272	.226	.446
Provides up-to-date information	.002	.000	.000	.000	.000	.027	.362	.063
Output presented in useful format	.003	.033	.003	.000	.007	.241	.023	.012
Ensures quick response to queries	.000	.000	.000	.000	.031	.328	.021	.042
Can be integrated with other application	.000	.000	.000	.000	.011	.001	.000	.011
Can include additional feature	.000	.000	.000	.001	.054	.066	.026	.268
Has excellent security	.000	.000	.000	.000	.001	.027	.000	.275
Functions as it promises	.000	.000	.000	.001	.012	.000	.001	.039
Always available for work	.000	.000	.000	.000	.001	.007	.018	.496
Has efficient data backup facility	.000	.001	.000	.000	.000	.079	.026	.225
Performs the job right at first time	.001	.012	.001	.000	.000	.283	.486	.002

Correlation Matrix

Sig. (1-tailed)	Price is reasonable	Has excellent security	Functions as it promises	Always available for work	Has efficient data backup facility	Performs the job right at first time	Price is reasonable	Provides good value for money	Offers free support services
	.027	.000	.007	.079	.283	.000	.000	.029	.004
	.000	.001	.018	.026	.486	.000	.000	.000	.004
	.275	.039	.496	.225	.002	.029	.004	.000	.000
	.051	.002	.312	.125	.365	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.006	.000	.025	.001	.000	.000



Correlation Matrix

Sig. (1-tailed)	Communicates with regular updates	Provides quick support services	Have knowledge to answer the queries
Simple to use	.045	.006	.001
Visually appealing	.007	.000	.019
Well organised	.099	.000	.135
Requires less experience to use	.000	.001	.482
Provides training to learn the system	.000	.000	.475
Provides automated notification	.005	.000	.003
Ensures user involvement	.004	.000	.000
Information is easy to read	.148	.124	.237
Provides precise information you need	.284	.012	.039
Provides information that you trust	.153	.055	.001
Provides accurate information	.165	.015	.012
Provides up-to-date information	.347	.000	.011
Output presented in useful format	.004	.000	.002
Ensures quick response to queries	.037	.003	.003
Can be integrated with other application	.003	.000	.000
Can include additional feature	.287	.002	.001
Has excellent security	.051	.000	.000
Functions as it promises	.002	.000	.000
Always available for work	.312	.000	.000
Has efficient data backup facility	.125	.000	.006
Performs the job right at first time	.365	.000	.000

Correlation Matrix

Sig. (1-tailed)	Communicates with regular updates	Provides quick support services	Have knowledge to answer the queries
Price is reasonable	.000	.000	.025
Provides good value for money	.000	.000	.001
Offers free support services	.000	.000	.000
Communicates with regular updates		.000	.000
Provides quick support services	.000		.000
Have knowledge to answer the queries	.000	.000	

Communalities

	Initial	Extraction
Simple to use	1.000	.570
Visually appealing	1.000	.479
Well organised	1.000	.565
Requires less experience to use	1.000	.905
Provides training to learn the system	1.000	.917
Provides automated notification	1.000	.806
Ensures user involvement	1.000	.317
Information is easy to read	1.000	.665
Provides precise information you need	1.000	.694
Provides information that you trust	1.000	.574
Provides accurate information	1.000	.625

Extraction Method: Principal Component Analysis.



## Communalities

	Initial	Extraction
Provides up-to-date information	1.000	.622
Output presented in useful format	1.000	.753
Ensures quick response to queries	1.000	.334
Can be integrated with other application	1.000	.682
Can include additional feature	1.000	.562
Has excellent security	1.000	.599
Functions as it promises	1.000	.468
Always available for work	1.000	.571
Has efficient data backup facility	1.000	.371
Performs the job right at first time	1.000	.646
Price is reasonable	1.000	.569
Provides good value for money	1.000	.639
Offers free support services	1.000	.543
Communicates with regular updates	1.000	.689
Provides quick support services	1.000	.647
Have knowledge to answer the queries	1.000	.645

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		Extraction Sums of Squared Loadings		Rotation Sums of Squared Loadings	
	Total	% of Variance	Total	% of Variance	Total	% of Variance
1	5.855	21.685	5.855	21.685	2.556	9.466
2	2.519	9.331	2.519	31.017	2.497	18.714
3	1.906	7.059	1.906	38.075	2.340	27.379
4	1.626	6.022	1.626	44.098	2.142	35.314
5	1.313	4.863	1.313	48.960	2.056	42.927
6	1.185	4.389	1.185	53.350	1.907	49.992
7	1.065	3.946	1.065	57.296	1.517	55.610
8	.988	3.661	.988	60.956	1.444	60.956
9	.944	3.496		64.453		
10	.914	3.384		67.837		
11	.846	3.135		70.972		
12	.812	3.006		73.977		
13	.737	2.731		76.709		
14	.690	2.557		79.266		
15	.658	2.437		81.703		
16	.636	2.356		84.059		
17	.587	2.174		86.233		
18	.576	2.134		88.367		
19	.499	1.850		90.217		
20	.459	1.699		91.916		
21	.433	1.605		93.520		
22	.417	1.544		95.065		
23	.402	1.489		96.554		
24	.361	1.336		97.890		
25	.302	1.120		99.010		
26	.219	.812		99.822		
27	.048	.178		100.000		

Extraction Method: Principal Component Analysis.

Component Matrix<sup>a</sup>

	Component							
	1	2	3	4	5	6	7	8
Provides quick support services	.633							
Functions as it promises	.585							
Can be integrated with other application	.570							
Has excellent security	.560							
Always available for work	.547							
Has efficient data backup facility	.519							
Provides up-to-date information	.515							
Output presented in useful format	.513							
Have knowledge to answer the queries	.511							
Provides automated notification								
Ensures quick response to queries								
Visually appealing								
Well organised								
Can include additional feature								
Provides information that you trust								
Provides accurate information								
Ensures user involvement								
Simple to use		.693						
Provides training to learn the system		.677						
Requires less experience to use		.566						
Communicates with regular updates								
Provides good value for money								

Extraction Method: Principal Component Analysis.

Component Matrix<sup>a</sup>

	Component								
	1	2	3	4	5	6	7	8	
Price is reasonable Offers free support services Information is easy to read Performs the job right at first time Provides precise information you need									.583

Extraction Method: Principal Component Analysis.

a. 8 components extracted.

Rotated Component Matrix<sup>a</sup>

	Component								
	1	2	3	4	5	6	7	8	
Communicates with regular updates Have knowledge to answer the queries Provides quick support services Offers free support services Ensures user involvement Can be integrated with other application Can include additional feature Has excellent security Functions as it promises Simple to use Visually appealing Well organised	.740 .731 .709 .659								
		.722 .714 .714							
									.714 .575 .566

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotated Component Matrix<sup>a</sup>

	Component							
	1	2	3	4	5	6	7	8
Information is easy to read			.563		.504			
Provides information that you trust								
Ensures quick response to queries								
Has efficient data backup facility								
Requires less experience to use				.928				
Provides training to learn the system				.925				
Provides up-to-date information					.651			
Provides accurate information					.645			
Always available for work					.600			
Provides automated notification						.849		
Output presented in useful format						.816		
Provides precise information you need							.734	
Performs the job right at first time							.673	
Provides good value for money								.683
Price is reasonable								.607

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

a. Rotation converged in 12 iterations.

Component Transformation Matrix

Component	1	2	3	4	5	6	7	8
1	.426	.480	.455	.203	.388	.301	.267	.167
2	.412	-.189	-.243	.659	-.354	.076	-.202	.361
3	-.552	-.398	.305	.487	.199	.387	.057	-.117
4	-.428	.419	.170	.298	.073	-.588	-.241	.339
5	.269	-.380	.567	.071	-.227	-.530	.288	-.204
6	.081	-.272	-.456	.140	.636	-.331	.404	.120
7	-.140	.421	-.287	.349	-.330	-.031	.505	-.484
8	-.249	-.063	.033	-.229	-.340	.129	.571	.650

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.



# Regression

Variables Entered/Removed<sup>b</sup>

Model	Variables Entered	Variables Removed	Method
1	F1 <sup>a</sup>	.	Enter

- a. All requested variables entered.
- b. Dependent Variable: Meets overall satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.330 <sup>a</sup>	.109	.105	.69227

- a. Predictors: (Constant), F1

ANOVA<sup>b</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.059	1	13.059	.000 <sup>a</sup>
	Residual	106.870	223	.479	
	Total	119.929	224		

- a. Predictors: (Constant), F1
- b. Dependent Variable: Meets overall satisfaction

Coefficients<sup>a</sup>

Model	(Constant)	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	F1	2.729	.251			10.865	.000
		.359	.069	.330		5.220	.000

- a. Dependent Variable: Meets overall satisfaction

# Regression

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Compatibility		Enter

- a. All requested variables entered.
- b. Dependent Variable: Meets overall satisfaction

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.279 <sup>a</sup>	.078	.074	.70420

- a. Predictors: (Constant), Compatibility

**ANOVA<sup>b</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1	9.344	1	9.344	18.842	.000 <sup>a</sup>
	110.585	223	.496		
Total	119.929	224			

- a. Predictors: (Constant), Compatibility
- b. Dependent Variable: Meets overall satisfaction

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients	Standardized Coefficients		t	Sig.
		B	Beta		
1	3.052	.227		13.425	.000
(Constant) Compatibility	.259	.060	.279	4.341	.000

- a. Dependent Variable: Meets overall satisfaction

**Regression**

Variables Entered/Removed<sup>b</sup>

Model	Variables Entered	Variables Removed	Method
1	Easg of Use	.	Enter

a. All requested variables entered.

b. Dependent Variable: Overall satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.311 <sup>a</sup>	.097	.093	.69704

a. Predictors: (Constant), Ease of Use

ANOVA<sup>b</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression 11.580	1	11.580	23.834	.000 <sup>a</sup>
	Residual 108.349	223	.486		
	Total 119.929	224			

a. Predictors: (Constant), Ease of Use

b. Dependent Variable: Overall satisfaction

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients	Standardized Coefficients		t	Sig.
		B	Beta		
1	(Constant) 2.125	.467	.390	5.442	.000
	Ease of Use	.096	.311	4.882	.000

a. Dependent Variable: Overall satisfaction

Regression

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	User Participation		Enter

a. All requested variables entered.

b. Dependent Variable: Overall satisfaction

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.148 <sup>a</sup>	.022	.018	.72524

a. Predictors: (Constant), User Participation

**ANOVA<sup>b</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1	2.636	1	2.636	5.011	.026 <sup>a</sup>
	117.293	223	.526		
Total	119.929	224			

a. Predictors: (Constant), User Participation

b. Dependent Variable: Overall satisfaction

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients	Standardized Coefficients		t	Sig.
		B	Beta		
1	(Constant)	3.538		16.090	.000
	User Participation	.132	.148	2.239	.026

a. Dependent Variable: Overall satisfaction

**Regression**

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Content <sup>a</sup>	.	Enter

a. All requested variables entered.

b. Dependent Variable: Overall satisfaction

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.207 <sup>a</sup>	.043	.039	.71748

a. Predictors: (Constant), Content

**ANOVA<sup>b</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression 5.132	1	5.132	9.969	.002 <sup>a</sup>
	Residual 114.797	223	.515		
	Total 119.929	224			

a. Predictors: (Constant), Content

b. Dependent Variable: Overall satisfaction

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients	Standardized Coefficients		t	Sig.
		B	Beta		
1	(Constant) 2.726	.412		6.618	.000
	Content .309	.098	.207	3.157	.002

a. Dependent Variable: Overall satisfaction

**Regression**

Variables Entered/Removed<sup>b</sup>

Model	Variables Entered	Variables Removed	Method
1	Format <sup>a</sup>	.	Enter

a. All requested variables entered.

b. Dependent Variable: Overall satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.252 <sup>a</sup>	.064	.060	.70959

a. Predictors: (Constant), Format

ANOVA<sup>b</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1	7.644	1	7.644	15.180	.000 <sup>a</sup>
	112.285	223	.504		
Total	119.929	224			

a. Predictors: (Constant), Format

b. Dependent Variable: Overall satisfaction

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients	Standardized Coefficients		t	Sig.
		B	Beta		
1	3.153	.227		13.898	.000
(Constant)	.241	.062	.252	3.896	.000

a. Dependent Variable: Overall satisfaction

Regression



Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	Reliability <sup>a</sup>		Enter

a. All requested variables entered.

b. Dependent Variable: Overall satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.291 <sup>a</sup>	.085	.080	.70166

a. Predictors: (Constant), Reliability

ANOVA<sup>b</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1	10.140	1	10.140	20.597	.000 <sup>a</sup>
	109.788	223	.492		
	119.929	224			

a. Predictors: (Constant), Reliability

b. Dependent Variable: Overall satisfaction

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients	Standardized Coefficients		t	Sig.
		B	Beta		
1	(Constant)	2.569		7.960	.000
	Reliability	.375	.291	4.538	.000

a. Dependent Variable: Overall satisfaction

Regression

Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	Price <sup>a</sup>	.	Enter

a. All requested variables entered.

b. Dependent Variable: Overall satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.165 <sup>a</sup>	.027	.023	.72327

a. Predictors: (Constant), Price

ANOVA<sup>b</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1	3.272	1	3.272	6.254	.013 <sup>a</sup>
	116.657	223	.523		
Total	119.929	224			

a. Predictors: (Constant), Price

b. Dependent Variable: Overall satisfaction

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients	Standardized Coefficients		t	Sig.
		B	Beta		
1	3.340	.184	.165	12.131	.000
(Constant)	.184	.074	.165	2.501	.013
Price					

a. Dependent Variable: Overall satisfaction