TOTAL QUALITY MANAGEMENT PRACTICE AND ORGANIZATIONAL PERFORMANCE IN FINANCIAL INSTITUTIONS

A THESIS SUBMITTED TO THE

**CENTRAL DEPARTMENT OF STATISTICS
INSTITUTE OF SCIENCE AND TECHNOLOGY
TRIBHUVAN UNIVERSITY
NEPAL**

**FOR THE AWARD OF
DOCTOR OF PHILOSOPHY
IN STATISTICS**

BY

GOVINDA TAMANG

OCTOBER 2015

DECLERATION

Thesis entitled **"TOTAL QUALITY MANAGEMENT PRACTICE AND ORGANIZATIONAL PERFORMANCE IN FINANCIAL INSITUTIONS"** which is being submitted to the Central Department Of Statistics, Institute of Science and Technology(IOST), Tribhuvan University, Nepal for the award of the degree of Doctor of Philosophy (Ph.D.), is a research work carried out by me under the supervision of Prof. Dr. Devendra Bahadur Chettry, and Prof. Dr. Srijan Lal Shrestha, Central Department of Statistics, Tribhuvan University and Co-supervised by Prof. Dr. Sunity Shrestha Hada, Central Department of Management, Tribhuvan University.

This research is original and has not been submitted earlier in part or full in this or any other form to any university or institute, here or elsewhere, for the award of any degree.

…………………………..…

Govinda Tamang

i

RECOMMENDATION

This is to recommend that **GOVINDA TAMANG** has carried out research entitled **"TOTAL QUALITY MANAGEMENT PRACTICE AND ORGANIZATIONAL PERFORMANCE IN FINACIAL INSTITUTIONS"** for the award of Doctor of Philosophy (Ph.D.) in **STATISTICS** under our supervision. To our knowledge, this work has not been submitted for any other degree.

He has fulfilled all the requirements laid down by the Institute of Science and Technology (IOST), Tribhuvan University, Kirtipur for the submission of the thesis for the award of Ph.D. Degree.

………………………

Prof. Dr. Devendra Bahadur Chhetry
Supervisor
Central Department of Statistics
Tribhuvan University
Kirtipur, Kathmandu,
Nepal

………………………

Prof. Dr. Srijan Lal Shrestha
Supervisor
Central Department of Statistics
Tribhuvan University
Kirtipur, Kathmandu,
Nepal

………………………

Prof. Dr. Sunity Shrestha Hada
Co-Supervisor
Central Department of Management
Tribhuvan University
Kirtipur, Kathmandu,
Nepal

OCTOBER 2015

CERTIFICATE OF APPROVAL

ACKNOWLEDGEMENTS

I will never forget my mother-in-law Lila Lama who always used to pray for me for my better life from every angle. Unfortunately, she passed away eighteen months back.

Finally, I would like to thank to all well-wishers who directly and indirectly helped and encouraged me in my research work.

I would like to dedicate this thesis to my Late Grand-Father Bhim Bahadur Tamang who was my best friend. I never forget him for his love, care and guidance in critical time of my childhood.

ABSTRACT

The TQM practice in business firms has led to several calls for research on TQM practice and their relationships on quality management result .In this study, these calls are being examined by establishing the relationships of TQM practice with service quality and service quality with customer satisfaction. Data were collected from 17 commercial banks. This study has used both secondary and primary source of information.

DEA was used to measure relative efficiency of CBs by using secondary data. The CBs were found to be less volatile in terms of relative efficiency via operation approach comparing to intermediation approach. The findings of this analysis strongly suggest there are important implications for bank managers and bank regulatory to take an action for operating the banks in efficient frontier in the competitive environment.

For primary data attitude and perceptions of both employees and customers were measured in 5-point Liket scale. Exploratory factor analysis was used for ensuring the construct validity and cronbach alpha was used for reliability. Multiple regression modeling was used to establish the relationship between extracted TQM practices and service quality and to establish the relationship between service qulaity and customer satisfaction as well. Model adequcy tests were performed for both modeling. The fitted models proved to be the best predictive functions. The pocess management was found to be the most influencing variable on service quality.Similaly responsivness was found to be the most influencing variable on customer satisfcation.

The models developed in this study will serve as a threshold to carry on future research to investigate the impact of TQM practices in financial institutions. Future research should explore the impact of TQM on organizational performance taking into various other influencing factors like time, culture, and work design. Moreover, the developed TQM model will help bank mangers and practitioners in their daily operation as the model clearly specified the impact of TQM practice on service quality and impact of service quality on customer satisfaction.

TABLE OF CONTENTS

LIST OF ABBREVATIONS

ANOVA	Analysis of Variance
ASN	Assurance
BOK	Bank of Kathmandu
CB	Commercial Bank
CF	Customer Focus
CST	Customer Satisfaction
CV	Coefficient of Variation
DEA	Data Envelopment Analysis
DMU	Decision Making Unit
DP	Deming Prize
EBL	Everest Bank Limited
EFQM	European Foundation for Quality Management
EMP	Empathy
EQA	European Quality Award
FA	Factor Analysis
FI	Financial Institution
GDP	Gross Domestic Product
GoN	Government of Nepal
HBL	Himalayan Bank Limited
HR	Human Resource Focus
IA	Information Analysis
IA	Intermediation Approach
JVB	Joint venture banks
KMO	Kaiser-Meyer-Olkin
KUMARI	Kumari Bank Limited
LAXMI	Laxmi Bank Limited
LD	Leadership
LUMBINI	Lumbini Bank Limited
MBL	Machhapuchre Bank Limited
MBNQA	Malcolm Baldrige National Quality Award
NABIL	NABIL Bank Limited

NBBL	Nepal Bangladesh Bank Limited
NBL	Nepal Bank Limited
NCC	Nepal Credit and Commerce bank Limited
NIBL	Nepal Investment Bank Limited
NIC	Nepal Industrial and Commercial Bank Limited
NRB	Nepal Rastra Bank
NSBI	Nepal SBI Bank Limited
OA	Operation Approach
PCB	Private Commercial Banks
PM	Process Management
QFD	Quality Function Deployment
RBB	Rastriya Banijya Bank
REA	Reliability
RES	Responsiveness
SCBNL	Standard Chartered Bank Nepal Limited
SIDDHARTHA	Siddhartha Bank Limited
SMEs	Small and Medium scale Enterprises
SOB	State owned banks
SP	Strategic Planning
SPIA	Strategic Planning and Information Analysis
SQ	Service Quality
TAN	Tangibles
TQM	Total Quality Management
TQS	Total Quality Service
VIF	Variance Inflammatory Factor
WTO	World Trade Organization

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

This chapter deals with the introduction of the study including the role of financial institutions in economic development, financial institutions in Nepalese context, quality services in commercial banking sectors, statement of problem, objectives of study, and research questions.

1.1 Background

Total quality management (TQM) has become one of the important areas of the research in recent periods. Most of the theories, principles and practices are derived from manufacturing organizations. Relevancy of these theories, principle and practices in service sector has been sought by various authors and researchers. There are some studies related to service quality of service organizations and its impact on customer satisfaction. So far, there are only few studies which link quality management practices, service quality and organizational performance.

The linkage among total quality management practices, service quality and organizational performance represents a major area of academic research in recent years. Today's organizations have realized to capture the attitude of their both internal and external customers for better understanding of their practices to deliver the product and services effectively and efficiently.

This study intends to cover the TQM practices and organizational performance in financial institutions in Nepal. It's been observed that financial development and stability is must in economic growth of any country. Hence, it is obvious that the economic growth of the country depends upon the performance of the financial institution (FI).

FIs as intermediaries involved in channelizing the deposits and funds into investments. Thus FIs play a significant role in mobilizing the financial resources of a country to uplift the economy. The government should regulate the activities of Financial Institutions in order to ensure that financial policies are implemented as per the requirement of the country. Policies for uplifting the economy of the country can be implemented through FIs.

1.1.1 Role of Financial Institutions in Economic Development

In today's modern era of economic globalization and liberalization, the financial soundness, stability and quality delivered by the banking sector plays a key role in achieving the levels of economic growth desired by any country either developed or developing or underdeveloped country.

The economic slowdown in the 1980s in United States often linked to the banking system. This is one of the evidences that there is a strong relation between financial institutions and the macroeconomic performance of an economy. The recent financial crisis in Southeast Asian countries viz: Thailand, Malaysia, Singapore, Indonesia, Hong Kong, and South Korea between June 1997 and January 1998 are often linked with the financial sector in these countries.

There have been many researches in the world about the link between the FIs and economic development of a country. Levine (1997) conducted an empirical analysis including firm -level studies, industry level studies, individual country studies, and broad cross country comparison and demonstrated that financial intermediary development has strong positive link with long-run economic growth

1.1.2 Financial Institutions in Nepalese Context

After the political liberalization of 1990, the Government of Nepal (GoN) gave more liberalization on financial sectors under open and liberal economic policy. As for example, the Financial Sector Reforms of Nepal is well documented by Shrestha (2009). As a consequence, a large number of financial institutions appeared in Nepal (Figure 1.1). Within a period of 20 years (1990 – 2010), the number of commercial banks was increased from 5 to 27 and development banks from 2 to 79. Likewise, within a period of 15 years (1995 – 2010) the number of finance companies, licensed from Nepal Rastra Bank1 (NRB), was increased from 21 to 79. A dramatic increase in the number of FIs was obsessed after the comprehensive peace process took place in 2006.

---

[1] Central Bank regulates the Financial Institutions in Nepal.

Figure 1.1: Growths of Financial Institutions

	1980	1985	1990	1995	2000	2005	2006	2007	2008	2009	2010
Commercial Banks	2	3	5	10	13	17	18	20	25	26	27
Development Banks	2	2	2	3	7	26	28	38	58	63	79
Finance Companies				21	45	60	70	74	78	77	79
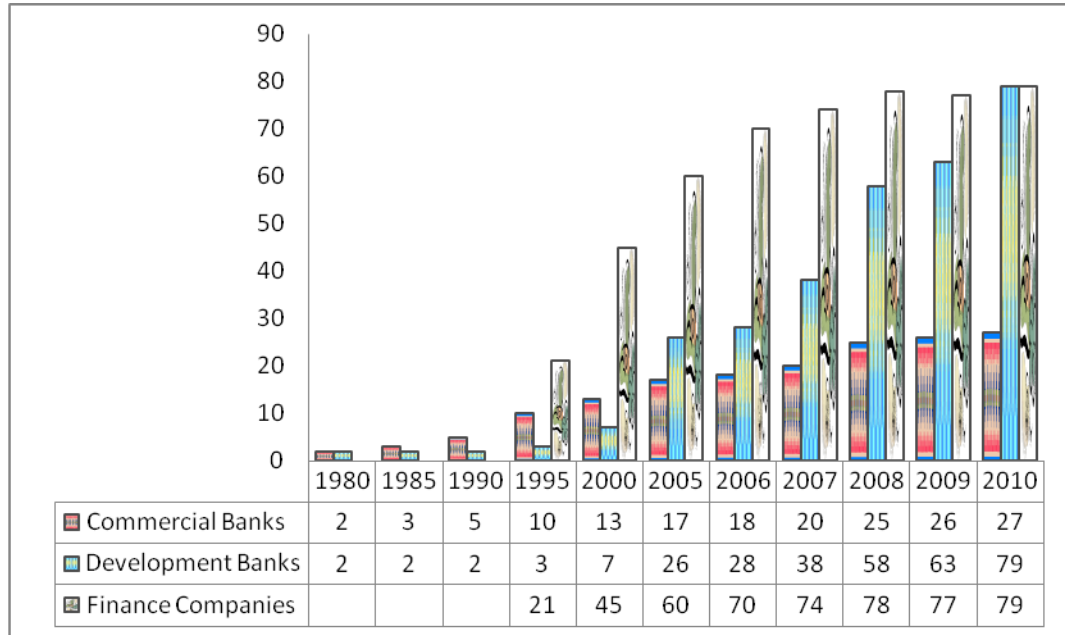
Source: Bank and Financial Institutions Regulation Department NRB

FIs in Nepal have observed many ups and downs. The beginning of July 2011 marked severe liquidity crunch and loan recovery by FIs in Nepal. This was the result of having too many players in financial sectors and lack of proper monitoring over the FIs. In a year period of one year the situation was improved and crisis was resolved. According to the half yearly review of the fiscal year 2012 conducted by NRB, liquid assets of banks have increased by 24 per cent in contrast to a decrease of 15.3 percent in the same period of the previous year. Relaxation on income declaration requirements, low credit flow, higher interest rates on deposits and elevated level of remittance inflows have contributed to the current improved liquidity position. The government authority regulates the FIs by imposing the rules according to business environment in order to balance the financial activities which in turn will help foster the economic development of a country. NRB regulates the FIs in Nepal.

Until early 1980s financial sector was not opened up for private sectors. In late 1980's when a country adopted economic liberalization policy, particularly financial liberalization policy, the joint venture and private banks started opening up and today it is huge in number and competition among the FIs has gone up. As of Mid-July 2010, altogether 263 banks and non-banks FIs have been established. Out of them 27 are "A" class commercial banks, 79 are "B" class development banks, 79 are "C" class Finance companies, 18 are "D" class Micro-finance development banks, 15 saving and credit co-operatives and 45 are NGO's as shown in the Table 1.1.

Table 1.1: Market Shares of Financial Institutions at a Glance

Deposit taking Institutions	Total Assets	Total Deposit	Total Credit	Total Investments	Liquid Fund
Commercial Banks	76.7%	79.4%	86.6%	92.1%	65.7%
Development Banks	10.6%	9.7%	7.4%	4.7%	16.7%
Finance Companies	10.9%	9.8%	12.4%	3.0%	13.8%
Micro-finance development banks	1.8%	1.1%	1.8%	0.2%	3.8%
Total	100%	100%	100%	100%	100%

Source: (Banking and Financial Statistics, July 2010)

The table shows the big market share of commercial banks in terms of financial system. This reveals that commercial banks play an important role in socio-economic development of a country. Hence the safe and sound banking system is appears necessary for the financial sector stability and sustainable socio-economic development of the country.

1.1.3 Quality Services in Commercial Banking Sector

In a small economy like Nepal, there are 31 commercial banks, which make the banking industry very competitive. In order for banks to maintain the highest standard of quality and to survive, it is good practice to control costs, improve productivity and implement total quality management techniques. Owing to these factors, banks are continuously adopting methods to improve the quality of service. The reasons for banks to implement total quality management techniques may be attributed due to significant changes in the banking in industry.

Firstly customers' expectations in regard to banking services are changing day by day. As customers are becoming more educated and gaining exposure to banking facilities in the developed world, they demand new products and services which are in line with international banking standards. Therefore it is necessary for banks to provide quality service to maintain competitiveness.

The second major change is the level of fierce competition amongst banks in the financial industry. At the end of July 2013 it was reported that there were 31 Class "A" Commercial banks (CBs), 86 Class "B" licensed development banks and 59 Class "C" licensed Finance Companies which brings a total of 176 licensed FIs in Nepal.

Thirdly, the rapid changes in culture and technology have led to people being more courageous to voice their opinion in case of any injustices committed on behalf of the

bank. Rapid developments and access to internet and social networking sites have made it easy for people to voice their complaints which make it imminent to receive bad publicity due to complaints made by the unsatisfied customers.

Finally, According to Basel III there are 3 major risks components that a bank faces (1) Capital Adequacy (2) stress testing (3) market liquidity. In order to mitigate itself against these risks, it is better for banks to adopt quality management techniques to maintain its efficiency and competitiveness.

In summary, the business environment is rapidly changing in the commercial banks of Nepal. Changing customer expectation, intense competition, rapid advancement in technology and obligations to regulatory requirement strongly affect the future opportunities and growth potential of banks. It is therefore it seems banks have to provide quality services to customers.

This research aims to find out the total quality management initiatives taken by banks to improve their services and the extent to which they have been effective in delivering quality services to their customer. The challenges facing banks to implement total quality management approaches in banks. It also looks to study the different methods of total quality management techniques that are currently available in CBs of Nepal.

1.2 Rationale

TQM practice is inevitable in any organization regardless of type, size and nature of a company. Despite the growing interests in TQM practice in service organizations many challenging tasks remain. These include assessment of organization's current reality, relevant preconditions, its current needs, precipitating events leading to TQM, and the existing employee quality of working life.

People need to feel a need for a change with a deeper understanding. Hartley & Warr (2002) in their book entitled "Organizational Change and Development" addresses this phenomenon by describing building blocks which are present in effective organizational change. These forces include departures from tradition, a crisis or galvanizing event, strategic decisions, individual "prime movers," and action vehicles. Departures from tradition are activities, usually at lower levels of the organization, which occur when entrepreneurs move outside the normal ways of operating to solve

a problem. A crisis, if it is not too disabling, can also help create a sense of urgency which can mobilize people to act. In the case of TQM, this may be a funding cut or threat, or demands from consumers or other stakeholders for improved quality of service. After a crisis, a leader may intervene strategically by articulating a new vision of the future to help the organization deal with it. A plan to implement TQM may be such a strategic decision. Such a leader may then become a prime mover, who takes charge in championing the new idea and showing others how it will help them get where they want to go. Finally, action vehicles are needed and mechanisms or structures to enable the change to occur and become institutionalized.

The most challenging task in TQM practice is to form a language which is understood and applied as a business strategy at the "top-floor" and as a functional strategy at the "shop-floor". This is possible in organizations only when they are able to integrate business activities in leadership, people, customer focus, planning, quality assurance of processes, and information and analysis. When these activities are linked together the organizations will have sustainable performance in World Trade Organization (WTO) regime.

The WTO is all set to bring about radical transformation of international economic system and regulation paraphernalia thereby open the markets for free trade flows within a multilateral rule based framework. Each country has to think and act about emergency clause, anti-dumping regulations and quality and standards (Siraz, 2003).

Quality issues in Nepal have not attracted significant attention of agenda. Following are the issues that concern the quality and standards in WTO regime: Lacking physical infrastructure to promote quality culture, Human resource development is primordial for quality improvement, organization is not quality conscious, government has not even enforced the minimum level of standards of quality in organizations, and there is serious dearth of research on quality. However, GoN has vision, strategies and targets in terms of improved service delivery articulated in the tenth plan are focused to right direction.

According to IMF country report of December 2012 Nepalese economy has paradigm shift from agricultural based economy to service based economy. The percentage share of GDP of Agriculture sector by 41.4% during 1990-2000 has declined to 35% during 2001-2012 while that of service sector from 37.6% during 1990-2000 to 48.6%

during 2001-2012.Moreover, manufacturing sector has also been in declining stage having its percentage share of GDP from 21% during 1990-200 to 16.4% during 2001-2012.This shows that service organizations has greater composition in GDP. Hence, Nepalese service organizations should be competent enough in global arena. Therefore it is important to conduct the research on quality issues in FIs as this sector has become one of the important components in the service sector. Looking into the market shares of FIs, Commercial Banks have big market share in terms of financial system [Table 1.1], this study focuses only on commercial banks.

1.3   Objectives

The general objective of the research is to study the TQM practices and organizational performance in the Nepalese Commercial Banks.

Specific Objectives
(1)   To examine the current status of TQM practices in commercial banks.
(2)   To examine the current status of organizational performances in commercial banks.
(3)   To assess the impact of TQM practices on service quality in commercial banks.
(4)   To assess the impact of service quality on customer satisfaction in commercial banks.
(5)   To draw conclusions and provide recommendations on the basis of data analysis.

1.4   Research Questions

The organizational performance in terms of customer satisfaction, profitability and productivity of CBs are influenced by TQM Practices which particularly include: leadership, strategic planning, customer focus, human resources focus, information analysis, and process management.

Moreover, the TQM will have effect on Service quality of an organization. Thereby get affected in organizational performance. Keeping in these views in consideration the research questions arise like:
1.   How is the pattern of relative efficiency of commercial banks under study?
2.   What are views of employees regarding TQM practices of commercial banks?
3.   Whether customers are satisfied or not with services of banks?

7

CHAPTER 2:   LITERATURE REVIEW

This chapter aims to synthesize the literature on quality management in order to build a conceptual framework with a new perspective in banking sector. The literature covers the broad aspects including TQM constructs, TQM from manufacturing to services, and service quality.

2.1   Background

Quality concepts dated back to 1800's during industrial revolution while American quality practices seemed to be shaped differently adopting the craftsmanship, factory system and Taylor system in place of predominant production method. The concept of quality has existed so many years with significant changes in its meaning over the period of time. The meaning of quality management in the early twentieth century is inspecting products to ensure that they met specifications. During World War II quality was turned to be more statistical in nature. Deming (1982) described that he gave an idea on statistical methods to Japanese engineers and on quality responsibility to the chief executive officers of many large organizations in Japan in 1950. Similarly, Juran & Gryna (1980) described about the awareness among Japanese organizations about the management's responsibility to achieve quality. Which in turn made Japanese set the quality standards for the rest of the world to follow.

In the 1960's with the help of quality gurus the concept of quality took broader meaning. Quality began to be viewed as something that encompassed entire organization rather than emphasizing on production process only. Quality gurus like Walter A. Shewhart contributed to understanding of process variability and developed a concept of quality control chart, W. Edward Deming stressed management responsibility for quality and developed "14 points" to guide companies in quality improvement, Josheph M. Juran defined quality as fitness for use and develop concept of cost of quality (Juran & Gryna, 1980), Armand V. Feigenbaum introduced concept of quality control, Philip B. Crosby coined phrase " Quality is free" and introduced concept of zero defects (Crosby, 1982) ,Kaoru Ishikawa developed cause and effect diagrams and identified concept of " internal customer" and Genichi Taguchi focused on product design quality and developed Taguchi loss function.

By the late 1970s and 1980s, U.S. managers were making frequent trips to learn about Japanese miracle as U.S. industries lost market share to foreign competition. In auto industry, manufacturers like Toyota and Honda became major players in the market. Likewise in the consumer good market companies such as Toshiba and Sony led the way. These Japanese companies were manufacturing quality goods at relatively low-price.

From 1970's companies adopted quality management as the competitive weapon. Competition based on quality has generated tremendous interest, concern and enthusiasm. By 1980's and beyond the focus of the companies shifted to customer driven quality starting from inspection focus in early 1900s ,statistical sampling focus in 1940's,organizational quality focus in 1960's . the focus from 1900s to 1960s referred to old concept of quality in which inspection for quality after production was conceived while by 1980's and beyond new concept of quality was emerged in which quality is built into the process. By the middle of 1980's the concept of TQM was being publicized.

Today, successful companies understand that quality provides them a competitive advantage. They put customers first and define quality as meeting or exceeding customers' needs and expectations. TQM has been described as a management philosophy and a way of thinking which has helped many organizations in the world to achieve business excellence. TQM helps organizations create a culture of management commitment, continuous improvement, customer focus, quality planning, quality mindset, participation, involvement, and team work.

TQM implementation, in an organization involves organizational planning and practices to embed quality into processes, products and services, and to make a quality as a common concern and responsibility at individual level in an organization. Achieving highest level of performance of an organization is termed as quality in broader sense. For the achievement human factor plays a significant role which leads to change in the organization behavior and adopting new ways of doing business. Dr. W. Edward Deming puts forward the principles in this connection which aptly called "Codes of ethics of Quality" (Naagarazan & Arivalagar, 2005).

A working definition of TQM has been proposed by Miller (1996) based on the extensive literature review.

An ongoing process whereby top management takes whatever steps necessary to enable everyone in the organization in the course of performing all duties to establish and achieve standards which meet or exceed the needs and expectations of their customers, both external and internal

This definition seeks scientific researches what TQM practices should be included and how organizational performance based on quality be improved. In this direction, thorough understanding of TQM constructs or elements by organizations seems vital through research.

2.2 TQM Constructs

TQM has become popular in the business world since early 1990's. The academic research on TQM has started in late 1980's, though. The TQM constructs have always been matter of discussion among practitioners and academics.

There are few significant researchers (Corbett et al., 1998; Curkovic et al., 2000; Wilson & Collier, 2000) who have assessed quality management practices by using seven critical factors of quality management based on Malcolm Baldrige National Quality Award (MBNQA) including leadership, information and analysis, strategic planning, human resource development and management, process management, business results, and customer focus and satisfaction.

Saraph, Benson, & Schroeder (1989) identified eight critical factors of quality management at the business unit level including top management support, quality reporting, employee training, employee involvement, product design, supplier quality, process management, and role of quality department. According to Choy Lee-man (2002) Saraph et al.'s eight critical factors TQM model has set the stage for developing any new TQM constructs. These eight critical factors model have been used extensively by many researchers (Benson et al., 1991; Motwani et al., 1994; Black & Porter, 1996;Quazi et al., 1998). There are some researchers (Powel, 1995; Ahire et al, 1996; Rao et al, 1997; Azaranga, 1998; Sun, 2000) who have integrated benchmarking as a major additional critical factor. Likewise, Sureshchndar et al. (2001b) has added technological system, union intervention, social responsibility in addition to above mentioned critical factors of TQM.

Once TQM constructs are identified it is necessary to specify the relationship among the factors after keeping the identified constructs and concept together which will then only be able to provide a way forward to particular industry with validity and reliability. There are some researchers (Nair, 2006;Fotopoulus & Posmas, 2009; Sit, Ooi, Lin, & Chong, 2009; Brun, 2010; Sadikoglu & Zehir, 2010) who have discussed about impact of TQM practices on quality management results.

Reflecting back to empirical researches on TQM constructs in the specific organizations it will be almost insufficient until the review on the development of the theory of quality management by Anderson, Rungtusanatham, and Schroeder (1994) is done. These authors applied Delphi method to generate a preliminary set of concepts based on Deming management by inviting seven expert panel members from both academe and industry. The experts identified and defined 37 concepts. Later on they employed a cluster analysis of 37 concepts heuristically and came up with seven building blocks of their proposed theory of quality management. The seven concepts are visionary leadership, internal and external cooperation, learning, process management, continuous improvement, employee fulfillment, and customer satisfaction. Figure 2.1 shows the path model. This model suggests that visionary leadership has direct and linear influences on both internal and external cooperation and learning. These two joint concepts of organizational system influence process management, which in turn influence on process outcomes via continuous improvement and employee fulfillment and finally these outcomes will influence on customer satisfaction.

Figure 2.1: Path Model
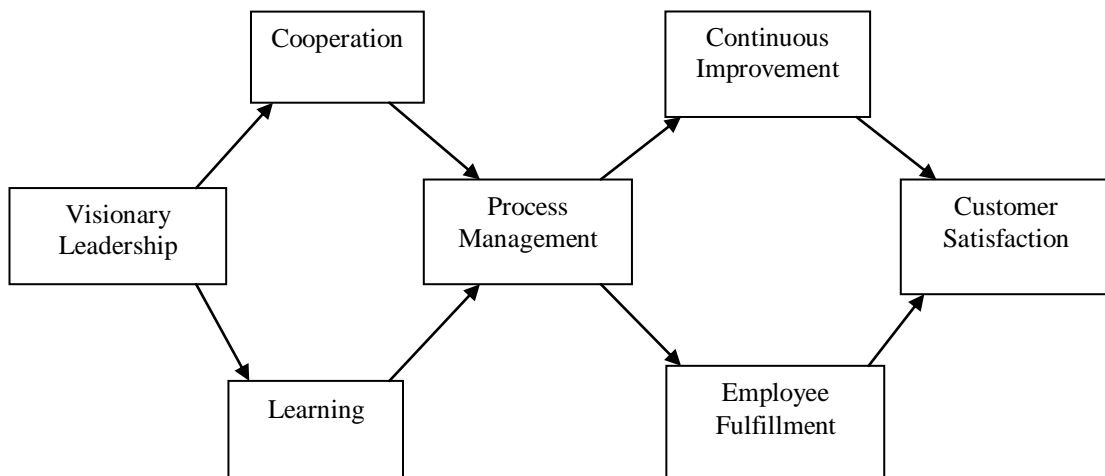
Reprint from Anderson, Rungtusanatham, Schroeder and Devaraj (1995)

11

Anderson J. C., Rungtusanatham, Schroeder, & Devaraj (1995) tested the seven concept model by using path analysis. As part of follow up study they empirically exmined their theory by using a sample of 41 manufacturing plants including electronics, machinery and transportation from an existing database. The path analysis results had indicated support for many of the relationship in the proposed theory.However,the researhers themsleves have agreed that the present theory may not be exhaustive in its specification of plausible causual and correlational relationship as there have been the presence of large unexplained effects for the path model in their study. This shows that the TQM construct validity is an issue here. In a study entitled retesting a model of the deming management method in Loyola University, New Orleans also indicated that unidimensionality of a key TQM constructs are highly questionable.This study supported the model developed by Anderson et.al (1994) with exception of one construct, employee fulfillment as this sclae showed the least number of significant correlations with the other scales suggesting that it is the weakest link in the model.

It is observed that the interaction of TQM construct to each other has not been materialized yet in the concrete way. Hence, it is important to identify the critical factors of TQM in contextual with the nature of organizations in order to formulate the theoretical models which can represent the complex relationships of TQM practices.

2.3 TQM from Manufacturing to Services

The manufacturing sectors have been found to be continuously supported by TQM theory, principles and practices along with empirical evidences. However, this is not same in case of service sectors. Based on the vast literature review of TQM and Total Quality Service (TQS) Sureshchandar, et al. (2001a) has 12 dimensions of TQS as being critical for effective implementation of quality management in service organizations. The dimensions identified by the authors are

1. Top management commitment and visionary leadership

2. Human resource management

3. Technical system

4. Information and analysis system

5. Benchmarking

6. Continuous improvement

7. Customer focus

8. Employee satisfaction

9. Union intervention

10. Social responsibility

11. Service spaces

12. Service culture

Among these dimensions union intervention and social responsibility are seldom addressed in literature. The dimension service culture is unique to service organizations. This study provides neither measurement instrument nor empirical validation. According to Sureshchandar et al. (2001) there are some researchers (Shostack, 1977; Rapoport, 1982; Bitner, 1992; Berry & Clark, 1986; Baker, Berry, & Parasuraman, 1988) who have done extensive research on this unique dimension.

There have also some researchers (Beaumont, Sohal, & Terziovski,1997; Cheng & Ngai, 1994; Dotchin & Oakland, 1994; Ghobadian & Jones, 1994; Lakhe & Mohanty, 1995; Reeves & Bendar, 1994; Samson & Parker, 1994; Sohal & Terziovski,2000; Woon, 2000; Brah, Wong, & Rao, 2000; Tang & Zairi, 1998; Waldman & Gopalkrishnana,1996) who generalize TQM research findings to the service setting.

Beaumont et al. (1997) presents a comparative analysis of the attitudes to and use of quality management practices in Australia's manufacturing and service industries along with identification of statistical significance difference between these two sectors. Cheng & Ngai (1994) discuss the potential of applying management support systems in quality management in a service context and suggests a viable research direction. Dotchin & Oakland (1994) assessed the influence of service quality dimensions and attributes of service operations on quality perceptions. Ghobadian & Jones (1994) examined the salient features of service quality and its determinants along with description of several service quality models. Lakhe & Mohanty (1995) attempt to explain the dimensions of TQM in service systems with various perspectves in conceptualization, articultion and implementation of TQM in various

service organizations. Samson & Parker (1994) conducted a detailed empirical analysis of service quality issue by using a gap model between service expectations and perceptions of delivered services in the Australian consulting Engineering industry.

Sohal & Terziovski (2000) discussed the trends in the adoption of quality management practices in the Australian manufacturing industry and highlights some of the barriers to the adoption of such practices. Woon (2000) used secondary data from 240 organizations from the Singapore quality award programme and found to have a significantly lower level of TQM implementation than the manufacturing-oriented service organizations and manufacturing organizations. Waldman & Gopalkrishnana (1996) examined the relationship between TQM factors and business unit performances as measured by customer perception of service quality. They confirmed the hypotheses that customer perceptions would be a function of a combination of operational, organizational, and human resource factors that have associated with TQM. In course of applying TQM tools and techniques in service setting Huq & Stolen (1998) developed a framework of 19 TQM dimensions and conducted a survey based on this framework to both manufacturing and service industries and concluded that commitment for a fully-fledged TQM has been lacking in service industries.

In an article captioned "Towards a contingency theory of TQM in services: How implementation varies on the basis of volume and variety" (Silvestro, 2001) based on the generic model Figure 2.2 developed contingency approach based on volume-variety continuum with professional services at one extreme, mass services at the other and service shops positioned on mid-way to continuum. In this study he found that mass services are more conducive to the implementation of quality measurement that are practiced in manufacturing firms while professional services are more conducive to the cultural managerial changes associated with TQM. In fact this study was done by Silvestro based on his conceptualization on industry-specific issue through a comprehensive literature review on TQM spanning over 50 years.

The model developed by Silvestro postulated six core percepts customer orientation, Leadership, Empowerment, Continuous improvement, Elimination of waste and quality measurement which were deemed conceptually central to TQM and identified

14

further concepts pertinent to service industry context. The model did not specify the relationships between the six core percepts, and the model was not subject to empirical test either.

Figure 2.2: Generic Model for Evaluating TQM Implementation in Services
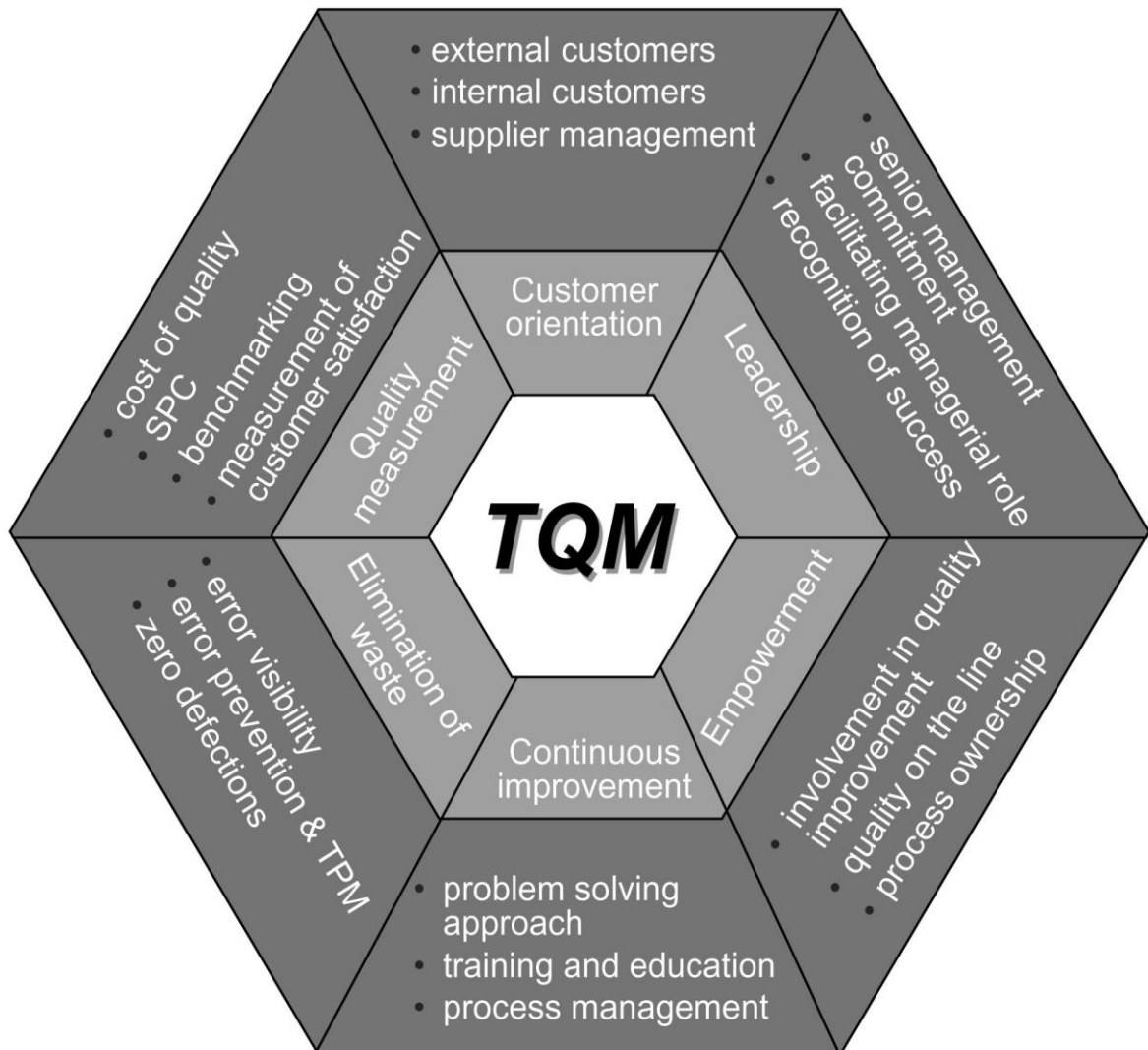
The interface between manufacturing and service industries in connection with TQM constructs and TQM implementation leads to need for empirical research for the demonstration of TQM in both manufacturing and service sectors.

2.4 Performance via TQM Practices

The links between TQM and organizational performance have been sought by various scholars as TQM is considered to be indispensable for the long term success of an

organization whether that may be manufacturing or service. Gharakhani et.al (2013) reviewed 59 papers on TQM practices to TQM performance and concluded that TQM is closely linked with different organizational performance such as financial, innovative, operational and quality performance. Munizu (2013) conducted a survey on impact of TQM in 66 fishery companies in South Sulawesi Province, Indonesia and concluded empirically that TQM practices have positive and significant effect both on organizational performance and competitive advantage.

Demirbag & Tatoglu (2006) determined the critical factors of TQM and measured their effect on organizational performance of Small and medium enterprises (SMEs) operating in Turkish textile industry. They showed empirically that there is a strong positive relationship between the implementation of TQM practices and non-financial performance of SMEs, while there is only weak influence of TQM practices on financial performances of SMEs.

Hendricks & Singhal (1997) explored the hypotheses that implementing effective total quality management programs improves the operating performance of firms. They found that firms that have own quality awards have outperformed on operating income based measure than the firms who have not won quality awards.

Choi & Eboch (1988) adopted a survey approach from 339 manufacturing companies and empirically justified that there is paradoxical relations among TQM practices, plant performances and customer satisfaction. Samson & Terziovski (1999) examined the total quality management practices and operational performance of a large number of manufacturing companies so as to determine the relationship between TQM practices individually and collectively, and firm performance. With the help of large database of 1200 Australian and New Zealand manufacturing companies the researchers were able to show significant relationship between TQM practices and organizational performance with significant proportion of variance of TQM in performance.

In context of increasing global competitive in business environment a business firm cannot keep itself isolated from the quality management practices as it is directly linked with customer satisfaction and business results. The business firms around the world have followed the TQM framework defined by different quality framework since 1990's viz: MBNQA in USA, European Foundation for quality management

(EFQM) excellence model in Europe and Deming prize (DP model) in Japan (Bou-Llusar J.C. et.al, 2008). Figure 2.3 shows the quality award frameworks.

Figure 2.3: MBNQA Quality Framework
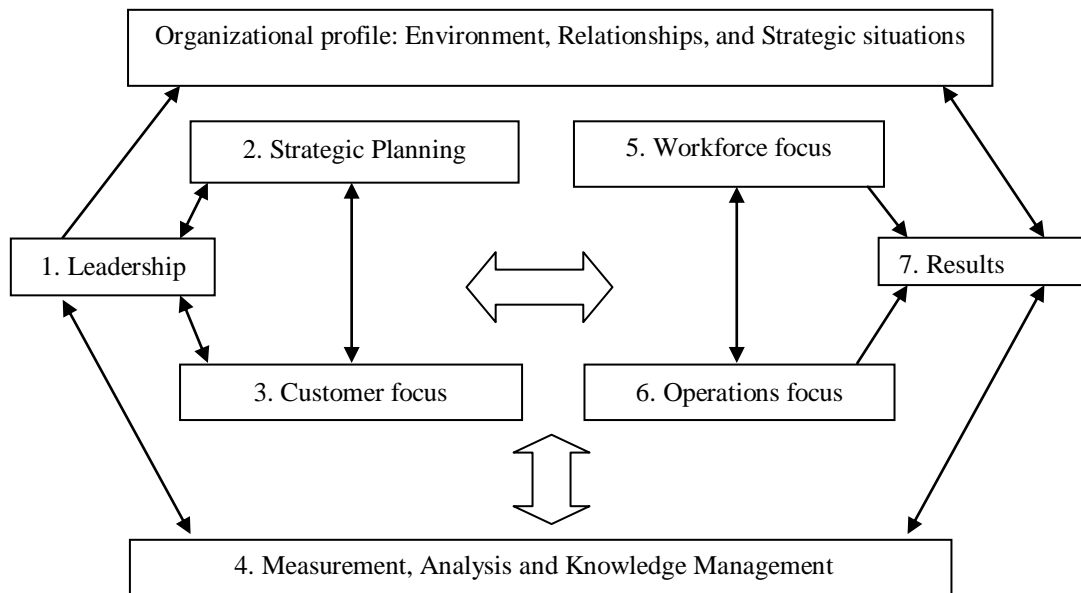
Source: http://www.nist.gov/baldrige/

MBNQA was established in 1987 with aim of promoting quality awareness, identifying role model-business, establishing criteria for evaluating improvement efforts, and disseminating the best practices. The core values and concepts of MBNQA includes customer-driven excellence, visionary leadership, valuing workforce members and partners, agility, system perspectives, organizational and personal learning focusing on the future and societal responsibility, management by fact, managing for innovation, focus on results and creating value.

EFQM was founded in 1989 by 14 leading European organizations with aim of assisting management in adopting and applying the principles of organizational excellence, improving the competitiveness of European industry and to close the gap of competitiveness between Europe and US/Japan. The core value and concepts of EFQM includes adding value for customers, leading with vision, inspiration and integrity, succeeding through people, managing by processes, taking responsibility for a sustainable future, building partnerships, nurturing creativity and innovation, achieving balanced results.

17

Figure 2.4: The EFQM Excellence model

Source: http://www.efqm.org/the-efqm-excellence-model
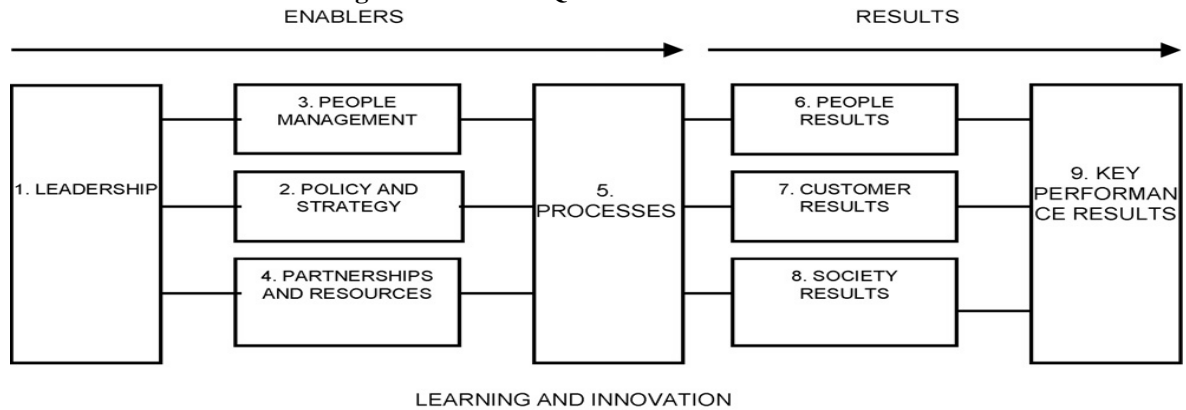
Looking into the quality award framework models and empirical researches as discussed above it is necessary to conduct researches to validate the practitioners' business model empirically. Black & Porter (1996) reviewd various dimensions of MBNQA and identified 10 critical factors of TQM which has been a step forward to validate MBNQA empirically. Bohoris(1995) did a comparative assessment of some major quality awards viz MBNQA, European quality award (EQA), Deming prize (DP). However, validation remains questionable. Corbett et al., (1998) conducted a survey in cross culture situations taking five countries in Asia/ South pacific region taking into the TQM practices. He found that the practices varied more than the performance. Curkovic et al (2000) conducted a field survey and collected responses from 526 plant managers form US automotive industry and assessed the extent of fit between the factors of MBNQA and their measures. Quality awards stress the importance of management process, customer satisfaction, people and total quality to the attainment of superior competitive position (Ghobadian & Woo, 1996). Hua, Chin, Sun, & Xu, (2000) focused on TQM practices and business results, between ISO 9000 standards and TQM, and between employee involvement and TQM results. Nabitz, Severens, van den Brink, & Jansen (2001) reviewed EFQM award criteria and recommended to focus on customer orientation and a new measurement system. They emphasize the need of empirical validation of the newly improved award criteria.

2.5 Service Quality

High quality goods and service are favored in the marketplace and high service quality performance does produce measurable benefits in profits, cost savings, and market share Research also indicated that service quality has been increasingly

recognized as a critical factor in the success of any business (Parasuraman, Zeithaml & Berry, 1988). The topic of measuring service quality has been studied extensively in the past twenty five years. Parasuraman and colleagues (1985) developed the instrument through exploratory research focuses to quantify the customers' global assessment of a company's service quality. The scale involved five dimensions: reliability, responsiveness, assurance, empathy and tangibles.

1. Reliability: Reliability involves consistency of performance and dependability. It means that the firm performs the service right the first time. It also means that the firm honors its promises.

2. Responsiveness: concerns the willingness or readiness of employees to provide service. It involves timeliness of service.

3. Assurance: This relates to the knowledge, competence, and courtesy of service employees and their ability to convey trust and confidence.

4. Empathy: The caring and individualized attention provided to customers includes the approachability and ease of contact with service providers and their efforts to understand customers' needs.

5. Tangibles: Tangibles include the physical evidence of the service.

The developed instrument is a multiple-attribute scale called SERVQUAL for measuring service quality. The SERVQUAL scale operationalizes and measures service quality along five distinct dimensions that can be viewed as indicators of the construct of perceived service quality. SERVQUAL is a generic instrument for measuring perceived service quality that is viewed as the degree and direction of discrepancy between consumers' perceptions and expectations. Thus, service quality, as perceived by consumers, stems from a comparison of what they feel service providers should offer with their perceptions of the performance

2.6   TQM and Service Quality in Banking

Li, Zhao, & Lee (2001) have conducted a research about quality management initiatives in the banking industry in Hong Kong and on the basis of response from the respondents, they have come up with most three popular definitions of quality which are "Speed and promptness of Service" (69 percent), "high standard of service" (68 percent), and "relationship with customers" (61 percent). The response showed that

the Hong-Kong based banks are struggling for efficiency. The researcher also discussed that UK banks were adopting the definition as "providing service the customers want". The research clearly indicated that banking industry is being operated in different aspects in different countries.

Competitiveness and effectiveness of an organization is possible only when customers' satisfaction is ensured by managing the business process through service quality approach. For the growth and development of service sector, quality in service sector is prime factor. The measurement of service factors will help service sectors identify the major factors contributed in the organizational performance so that the service sectors could manage accordingly in order to gain competitiveness and effectiveness in the business environment.

Customers perceive the differences in the products and services offered by state owned banks (SOB), Joint venture banks (JVB) and private commercial banks (PCB) in context of Nepal. However, any new offerings are quickly matched by the competitors in the banking sector customers keep on looking for the FIs that meet their growing and changing expectations. In this context, FIs strive for offering the new products and services to the customers differently from their customers with greater service quality to bring in the customers loyalty (Montes, Fuentes, & Fernandez, 2003).

It would be beneficial to FIs to identify the existing status of the institutions in connection with the implementation and control of the quality improvement programs for services with the help of managers, employees and customers Employee's view point about services received by customers in an organization is strongly related with the customers' attitude towards service quality (Schneider, Wheeler, & Cox, 1992). This supports in the employees and customers view point in service quality.

Banking sector plays a significant role in the country's national economy. Since banking sector involves in fund-channeling from those having surplus to those having its shortage, banks have to reach maximum customers offering the products and services. The banking products and services are almost same in the country. So, the quality aspects associated with products and services meant a lot to banks. The implementation and control part of TQM is proved to be the most important activity

which offers the solution to quality related problems in banking sector (Naeem & Saif, 2008)

Sit et al (2011) made a comprehensive review on TQM and service quality. They reviewed about the constructs of TQM. In the study they discussed that, due to the vast array of TQM definitions and different methods adopted by various scholars, it is difficult to reach to the conclusion of TQM constructs. Researchers such as (Badri & Davis,1995; Brah, et.al;2000; Reed, Lemak, & Mero,2000; Shenawy, Baker, & Lemak,2007) empirically analyzed the major practices of TQM, specifically leadership, top management commitment, teamwork employee involvement, customer focus, training and development, supplier quality management, process improvement, service design, benchmarking, quality improvement rewards, and organization. Based on all these studies, they came up with six constructs of TQM practices viz: leadership, strategic planning, information analysis, customer focus, human resource focus, and process management. This study also considers these six constructs of TQM practices in CBs in Nepal.

The pre-notion about the banks are in finance sector has been changed into service industry since banks depend on customer satisfaction to continue business. We need to consider the effect of applying TQM on the financial capital and return of a given organization. The study on the application of TQM in the Jordanian banking sector aims to identify the relationship between TQM principles and the bank performance taking into consideration of three building blocks viz requirements which will consider the critical factors needed for the implementation of TQM and measurement of organizational performance, Actions which will consider the activities needed for the implementation of TQM philosophy in an organization, and results which will cover the customer satisfaction and financial development as end outcome of the TQM practices in an organization (Al-Shobaki, Found, & Al-Bashir, 2010).

Ngware, R Wamakuru, & Rodebero (2006) took the tenets of TQM: leadership, empowerment, strategic quality planning, and human resource development which was practiced in secondary school of Kenya. Ziethamal & Bitner, (1996) had used these variables in different departments linking with service quality. Naeem & Saif (2008) integrated these concepts for building the model entitled "A TQM model for commercial branch banking operations" which visualizes the tenets of TQM which

should be practiced by branch management while handling the various functional units in a branch. These will result into quality services which ultimately will satisfy the customer leading to higher sales and bigger market share.

2.7 Identification of Constructs and Research Hypotheses

To cover a broad aspects of quality management practices six TQM constructs are selected in this study. A brief description of each of these constructs are given albeit their widespread familiarity both in manufacturing and in service sectors. Consequently, the relationship among the TQM practices in service setting is elaborated thereby research hypotheses are proposed to test the specified relationship among TQM practices.

2.7.1 Specification of TQM Model and Research Hypotheses

The next approach after TQM construct is to observe whether the relationship among TQM practices may exhibit different patterns in the banking .This section begins by postulating the hypothesized relationship among these six TQM constructs

Figure 2.5: **A Proposed Total-Quality-Management-Model**
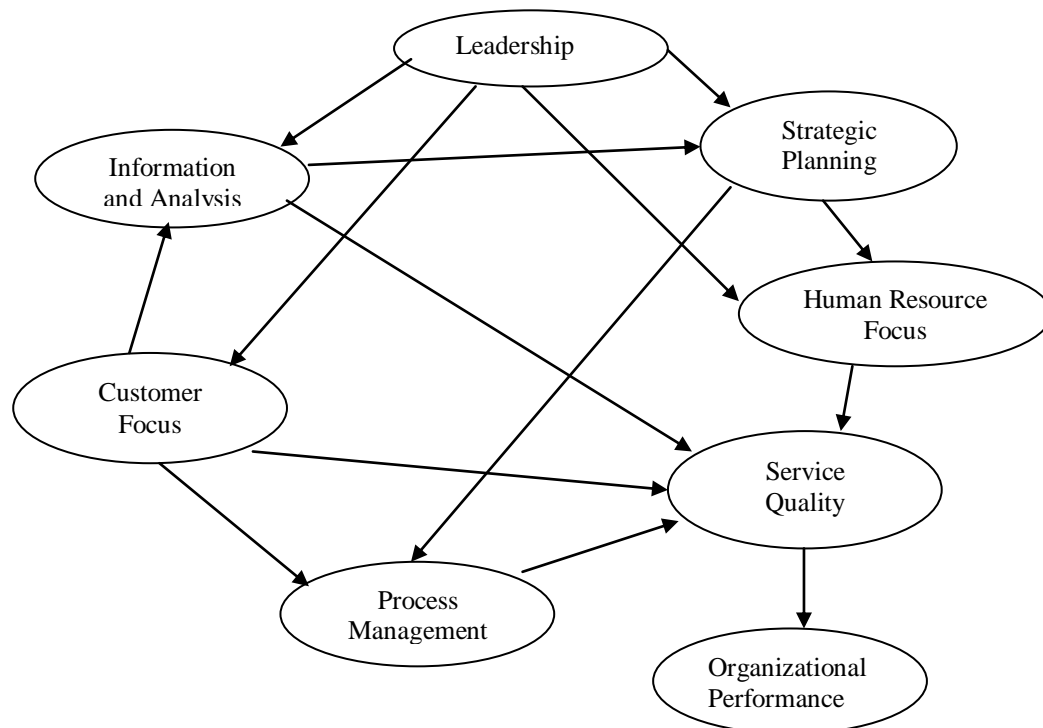
A more detailed explanation of TQM model is presented in the following section focusing on the relationship between constructs along with justification of causal

relationship. Consequently, research hypotheses are proposed to test the specified relationship among the constructs.

2.7.1.1 Leadership

It is clear that leadership plays important role in fostering the organization. In the competitive environment it is impossible to sustain in the market without knowing the customer requirement. Deming has called out for leadership institution in point 7 out of his prescribed 14 points for quality management. Point 7 clearly indicates that institute leadership through supervising people, machine and gadgets to do a better job. This is evident that leadership institution will be sustainable if it goes in line with customers' requirements and expectations. Anderson et.al (1994) states that leader's responsibilities are to create and communicate a vision to move the firm toward continious improvement. Silvestro (1998) has described about the Carlzon's personal eperience about leadership in his autobiography Moments of Truth. His message on the question of leadership and the role of managers in service organization is orienting business strategy around the needs of the customer and flattening organization structure so as to empower the front-liners to be responsible for and responsive to meeting the customer needs.

Hypothesis 1: leadership has positive influence on customer focus

Leaders always play important role in meeting the goals and objectives of an organization. In present competitive environment it's very much difficult to achieve the goals unless quality information about the various aspects of organizations related to various core processes and nested processes is obtained and analyzed carefully. This ultimately makes availability of key performance figures of an organization for a proper decision making for the quality upgradation. Leaders play important role in obtaining this quality information and make all employees put utmost effort in maintaining quality performance of an organization. This leads to second hypothesis:

Hypothesis 2: Leadership has positive influence on Information and Analysis

In the competitive environment an organization should be able to formulate operations strategy with aim of utilizing its resources to achieve the goals and objectives. Formulation of strategic planning seeks involvement of all stakeholders including customers, employees and suppliers. There have been several ways to achieve goals of an organization, however, for sustainability; an organization seems to

link the strategic planning to quality values. For this leaders should be able to spell quality goals of an organization to all stakeholders involved. Leaders must be able to formulate operational strategy and tactics for continuous quality improvement in an organization. This leads to third hypothesis.

Hypothesis 3: Leadership has positive influence on strategic planning

It is the people who ultimately contribute in achieving the goals and objectives of an organization. Leaders play important role in motivating the employees in work. Top management should be able to create reward systems in an organization to human resource of an organization in order to make them involve improving product or service in a quality way in an organization. Human resource in today's environment looks for career growth as well. It is the leader who will encourage staffs for their personal growth in an organization. Commitment of human resource in continuous quality improvement of an organization in all spheres is sought in today's organization.

This is possible only when human resource gets exposed with new ways of performing their tasks in a better and improved way in a team. All human resources in an organization must know that their tasks fit well into overall plan of the organization. For this leader should be able to empower and involve his/her people in the organization. This leads to fourth hypothesis.

Hypothesis 4: Leadership has positive influence on Human Resource

This study aims to cover the positive influence of the leadership on customer focus, information and analysis, strategic planning and on Human resource. However, Waldman & Gopalkrishnana (1996) in attempting identifying the predictive fators of customers' perception on service quality hypothesize that there is direct relation between other important variables like process management and perceived service quality. Likewise, Wilson & Collier (2000) also brought forward the same principle in their study about investigating the MBNQA causal model.

2.7.1.2 Customer focus

The success of an organization in today's competitive world is not possible keeping the customer away from core business function. In service management literature the customer focus has been a central theme. A customer focus approach towards

understanding quality has pervaded the service management literature (Chen, 1998; Gronroos & Gummerus, 2014; Johnston, 2005, 1995). The quality policy should focus on capturing and meeting customers' needs and delighting them. When everything comes together to produce customer delight it will retain customers by 90 per cent (Metters, Metters, Pullman, & Walton, 2007).

To delight the customers an organization is supposed to get customers' feedback frequently in order to design the product and services accordingly. In relation to organizational culture, (Bolton & Drew, 1991) stated that in many service industries companies have created programs that include surveys to elicit customers' assessment of service quality. A feedback loop allows service changes to be implemented and then evaluated with subsequent survey data. This is an outstanding approach which is totally different from functional approach of problem solving in an organization. The customer-driven organizational culture will be sustainable. It is needed to review the existing process flow of an organization with necessary data and information received from the customers' feedback. Customers provide vital information to organization indicating their needs and expectations as well as their level of satisfaction with the products and services being offered to them. Organizations can move towards a customer focused culture through information provided by customers which ultimately supports and ensures the effective delivery of services (Bartley et al., 2007). This leads to the following hypothesis:

Hypothesis 5: Customer focus has positive influence on information and analysis

Indeed it is the people at all level in an organization who are directly involved in acquisition and deployment of the knowledge about customers to enable a company to sell more of their product and service efficiently (Valmohammadi & Beladpas, 2014). An organization's workforce should realize the purpose of their existence in an organization is "service to customers." Human resource in an organization with this orientation is more likely to serve customers being able to build in trust and confidence in customers during service delivery. The principle of customer focus is more conducive to human resource in an organization. This leads to following hypothesis.

Hypothesis 6: Customer focus has positive influence on Human resource

To accomplish the customer focused culture in an organization we need to focus on process as well. Organizations must focus on continuous improvement in the process with frequent changes in existing products and services to keep pace with changing needs and expectations of the customers. Today only having marketing expertise, financial resources and technology, an organization may not gain competitive advantage unless it is able to design a core business process and motivate workforce for delivering the outcomes that are valued by customers. Uusitalo, Hakala, & Kautonen (2008) argues for a customer focused approach to the improvement of business process both at strategic and operational level of an organization. Many researchers (Boshoff, 1997; Brown et al., 1996; Feinberg et al., 1990; Hart et al., 1990; Anderson et al., 1995; Black & Porter, 1996; Silvestro, 1998) have mentioned that customer focus is more conducive to process management. This leads to following hypothesis:

Hypothesis 7: Customer focus has positive influence on Process management

2.7.1.3 Information and Analysis

It is utmost important that information about customers' needs and expectations should be continuously taken and analyze properly for continuous improvement of the processes in an organization. It is also necessary to keep information about key performance figures in order to improve the existing process for delivering the quality service to customers. In a nutshell we can say that leaders in service organization must use quality information and move towards formulating strategic planning through its proper analysis for the success of an organization in the competitive environment. Hence, it is postulated that capturing update information and analysis is a prerequisite of strategic planning. (Floyd & Wooldridge, 1990; Daft & Lengel, 1986)

Hypothesis 8: Information and analysis has positive influence on strategic planning

In the present study information and analysis not only include the availability of quality information regarding all facet of organization in order to improve the process, but also information on key performance figures which are directly related to customer –related performance. The information and analysis with aim of improving service quality includes the sequential steps of bringing benefits to organization with

better knowledge of service quality, improving service design, performance feedback to internal customers, simplifying work processes and eventually improving customers' perceptions on product and services provided.

Hypothesis 9: Information and analysis has positive influence on service quality

2.7.1.4 Strategic Planning

Strategic planning in an organization is done to meet the objectives of all stakeholders involved. It meets detours and obstacles that call for adapting and adjusting as the plan is implemented. Strategic planning should include clear quality goals of business. In today's competitive and changing business environment strategic planning becomes greater as it calls all people in the organization and makes them understand the direction and mission of the business. Organizations with a disciplined approach of strategic planning will evolve as market leaders as it helps organizations deliver quality goods and services to customers in different market segments. Involvement of the human resource in an organization plays important role in integrating the voice of the customers in designing the products and services. They will be fully involved in the work-process if they are called and encouraged to develop new ways in performing their tasks by giving them better packages including compensation and career growth plan. Hence, strategic planning should focus the plan of deploying human resource in an organization to meet the overall goals and objectives of an organization.

Hypothesis 10: Strategic planning has positive influence on human resource

The continual improvements in the product and service are possible only when a process is established in an organization which will take care of the voice of the customers. The need of today's market is designing for customers which include quality function deployment (QFD) which translates the customers' requirements into operating goals. To bring QFD into action an organization has to establish various work processes in a chain. The strategic planning has to be formulated with clear quality goals integrating all functional departments in an organization in a chain to address the voice of the customers thereby designing the product and services and delivering them to end customers effectively and efficiently in consistent with the delivery system established in an organization. This highlights the need of the process

from tapping the customers' needs and expectations and delivering the outputs to them. This leads to hypothesis.

Hypothesis 11: Strategic planning has positive influence on process management

2.7.1.5 Human Resource

It is quite easy to establish quality standards in a manufacturing industry than that of service industry since service operations are heterogeneous and standards for quality characteristics are difficult to establish since customers are to be processed while delivering the services. As there is close contact with customers during service design and delivery the perception of the customers leads the quality of the product and services offered to them. The perception of the customers can be greatly affected by employees.

As services are intangibles, the encounter with employees play important role to build up the positive perception in the customers. If employees are trained properly how to behave properly with customers, how to deliver services and how to resolve the customers problems , there will less defects in the service delivery which will lead to better customer perception of service quality. This leads to hypothesis that

Hypothesis 12: Human resources has positive influence on service quality

2.7.1.6 Process Management

The one of the pillars of TQM is continuous improvement which is built upon the premise of various work process with involvement of every individual from each level within an organization. This means there is series of interrelated process that always lead to quality output with consistent improvement gradually. If there occurred service error it, of course, will take both time and effort for service recovery, disrupting the normal service delivery process which eventually increase the cost of the service and decline the service quality as employees will not be able to deliver the services to customers timely. Hence it is necessary to have a close attention to each of the process involved in service delivery to customers which will prevent organization from incurring service error there by increasing the service quality.

The process variability will definitely lead to decrease in the service quality. There have been many tools and techniques in manufacturing to monitor about the process control. However, in case of service industry it would be kept in control if

organization can develop a process which will make employees have sense of process ownership there by making them flexible enough to take any kind of action being within the boundary to smooth out the process variance. This leads to hypothesis that:

Hypothesis 13: process management has positive influence on service quality

2.8 Operationalization of Constructs

The TQM constructs are operationalized by using measurement items adopted from well tested instrument from both manufacturing and services. Since this study focuses on the banking industry the items are modified to discriminate the information from banking industry. The items are widely used in the quality management literature

2.8.1 Leadership

The ability of the management in establishing and leading a long-term quality vision; to commit to quality practices in pursuit of service quality and customer satisfaction

LD1	There is regular reviews of quality issues in top management meetings	Saraph, et al.,1989
LD2	Top level management maintains close contact with staffs	Powel, 1995., Anderson et al.,1995
LD3	Top level management enforces total quality commitment to all staffs	Saraph, et al.,1989
LD4	Top level management gives quality issues to top priority as criteria when decision making	Saraph, et al.,1989

Top management of the company plays an important role in implementing TQM practices. The role of top management starts with the senior level commitment for quality which should be made transparent to all .Top management should encourage each individual at each level for achieving the service excellence. Quality related issues should be a top priority in the executive meetings. This implies the continuous effort of leadership is required in bringing the quality philosophy in the operational level of an organization.

2.8.2 Strategic planning:

Systematic, comprehensive analysis to develop a plan of action (Ward & Peppard, 2002)

SP1	We see regular strategic planning in this bank	New item
SP2	Business has clear quality goals in this bank	Modified from Alrgaibat & Alkhazali, 2011
SP3	I think strategic planning is linked to quality values in this bank	New item
SP4	Planning process includes continuous quality improvement in this bank	Modified from Besterfiled et al., 2011

Strategic planning incorporating quality plans will prove organization competitive in the business environment. Concrete quality-goals are needed to provide a focus, such as improve customer satisfaction, employee satisfaction and processes. It is necessary that goals should be measurable for evaluation in order to trace the improvement continually.

2.8.3 Information and Analysis:

A process of discriminating useful information in order to support decision making with the help of the process of inspecting, collecting, cleaning, transforming and modeling data

IA1	We carefully collect data on all facets of this bank	New item
IA2	We analyze all work processes in the bank	Adpated from Metters et al., 2007
IA3	Key performance figures are always available for analysis and decision making in this bank	Modified from Iveta, 2012

All organizations must have information regarding all areas which should be communicated to all employees at all level. This will deliver the organization's values, expectations and directions to everyone involved which will in return provide feedback from all levels in order to improve the work processes continuously.

2.8.4 Customer focus:

Overall attention of organizations in fulfilling the needs and expectations of the customers both efficiently and effectively

CF1	We collect data to monitor changes in customer needs	Modified from Sharma et.al.,1999
CF2	We ask customers systematically what they expect in product/services	Modified from Sharma et.al.,1999
CF3	We ask customers if they are satisfied with product/services	Modified from Sharma et.al.,1999
CF4	We investigate when we lose a customer	New item

Identification of customer needs is a must to an organization as this helps organization to integrate their needs in product/services. As well as customers feedback is to be collected to know the voice of the customers thereby implementing quality function deployment (QFD) in an organization. QFD will help translate customers' requirement into engineering characteristics of product and services during their development stages. Customer focus strategy will make an organization competitive in the business environment.

2.8.5 Human resource focus:

The workforce to deliver quality service; the extent of employee competency, empowerment, teamwork, training and continuous improvement

HR1	Staffs work as a team with clear goals in this bank	Modified from McGovern et al., 2007
HR2	Each member is encouraged to develop new ways to do their job better	Modified from Cohen & Ledford, 1994
HR3	All staffs understand how their tasks fit into overall plan in this bank	Modified from Vlahos et al., 1994
HR4	All staffs are focused on continuous improvement effort in all areas	Anderson et al., 1995
HR5	I observe that staffs are encouraged for their personal growth	New item
HR6	We have policy of reward to staff who help improve product/service	Modified from Ramsay et al., 2000
HR7	Staff members are aware of long term business goals in this bank	Modified from Mowday et al., 1979
HR8	Staff members receive appropriate training and are multi skilled in this bank	Modified from Spreitzer et al., 1999
HR9	Staff members are responded with immediate feedback on his/her task.	Modified from Hattie & Timperley, 2007

For driving an organization's quality effort in a right direction we need to focus on the human resource of high level of competency, knowledge and skills and commitment aligning with organizational values. Human resource should be willing to work in a team for quality improvement in an organization. For the continuous improvement we need to focus on employee empowerment and employee involvement as well as on employee training and development.

2.8.6   Process management:

Involves the planning, organizing and controlling the activities in an organization

PM1	We make improvements in product/services continually	Adpted from Ledolter & Burril, 1999
PM2	In the past year we have introduced at least one new product/service	Modified form Griffin, 1997
PM3	We have improved at least one feature of products/services in the past year	Adpted from Ledolter & Burril, 1999
PM4	We monitor all production/service process in this bank	Modified from Besterfiled et al., 2011
PM5	We use statistical process control to monitor production/service process	Modified from Besterfiled et al., 2011
PM6	We always quality factors in product/service design.	Adpated from Dilber et al., 2005

The major element of operations system is a process that constitutes the technology and skill which will ultimately add the value to product and services an organization offers to its customers. As there have been rapid changes in the needs and expectation of the customers, the process should include the appropriate product development strategy incorporating the addition of new features in the existing product and services to address the needs and expectation of the customers. This will also help organization to retain and satisfy the customers in the competitive business world. Today's organization has to offer quality product and services at low cost in the competitive market which is possible only through integrating quality factors in product and service design. To offer the quality product and services consistently in the market it is indispensable to keep the process in control by involving all concerned departments in monitoring the activities during production and service delivery and evaluating them with the help of appropriate quality tools and techniques. It is necessary to use statistical process control methodology in an organization to track the ongoing process.

2.8.7   Service Quality:

Refers to an assessment of how well a delivered service conforms to the customers' expectation in order to improve the service of an organization thereby to identify the problems and to assess the level of customers' satisfaction.

SQ1	We have increased physical facilities and equipment in this bank and also maintained the physical appearance of employees	Adapted from Nazarko, 2004.
SQ2	We are able to provide exact required service according to given specifications.	Adapted from Ovretveit, 1993.
SQ3	We have raised the inclination and willingness of the employees to serve customers quickly and promptly	Adpated from Hartline & Ferrel, 1993.
SQ4	Employees are knowledgeable , experienced and able to build self-confidence as well as confidence in the customers themselves	Adpated from Hartline & Ferrel, 1993.
SQ5	We look at the customers as close friends and distinguished clients.	Adapted from Taylor, 1993.

Organizations always strive for excellence. Excellence outcomes are possible through continuous improvement by incorporating the service gaps. It is quite important to identify the gaps starting from *understanding the customer*: Customer expectation versus Management perception of customer expectations, *service design*: Management perception of customer expectations versus service standards, *conformance*: service standards versus service delivery, *managing the evidence*: service delivery versus customer perception and *customer satisfaction*: Customer perception versus customer expectation.

2.8.8 Organizational performance:

Refers to analysis of company's performance against its intended results.

OP1	Profitability has increased in the past three years due to our quality program	Adapted from Srivastava & Mishra, 2009
OP2	Due to quality improvement effort revenue have increased in the past	Adapted from Yeow & Sen, 2006
OP3	The number of customers has increased in the past three years	Adapted from Yeow & Sen, 2006
OP4	Both interest and non-interest incomes have in the past three years	New item
OP5	We have increased the loans and investments in the past three years in parallel with the deposit.	New item

Organizational performance can be measured in multi-dimension ways. Particularly the financial measures take place the important consideration in today's competitive business world as it is one of the major concerns for the sustainability of an organization. Moreover, looking into the intermediation approach and operation approach of the financial institutions is must as it determines the threshold of sustainability of FIs. Hence, FIs should focus on the two parts particularly interest and non-interest income as well as loans and investments status. Of course, the

profitability is a major indicator of any financial institution while coming to assess the performance part. Above all the quality service of an organization should contribute in the customers' retention and increase in the number of customers gradually.

2.8.9   Service Quality:

Refers to the degree and direction of discrepancy between consumers' perceptions and expectations.

Parasuraman, Zeithamal, & Berry (1988) operationalized the conceptual model of service quality by means of a 22 paired –item instrument called SERVQUAL. The five dimensions included are tangibles, reliability, empathy, assurance and responsiveness. In this study all items are taken from the SERVQUAL model. In addition to measurement of service quality as per the views of the customers, customer satisfaction has also been measured. Hayes (1998) described about the way of measuring customer satisfaction. To assess the customer satisfaction there should be the surgery of service delivery system including the way service is provided to customers. In this study all items are being adopted from the Hayes (1998).

CHAPTER 3: MATERIALS AND METHODS

This chapter deals with the materials and methods employed in order to meet the research objectives of this study. More specifically, this chapter describes – sample selection procedure, data sources, methods used to measure relative efficiency, primary data collection tools, and methods of data analysis.

3.1 Overall Design

This study is based on both secondary and primary data. The overall research design constitutes both descriptive and analytical. Figure 3.1 displays the overall design interfacing conceptual model and data sources.

Figure 3.1: **Overall Design Interfacing Conceptual Model & Data Sources**
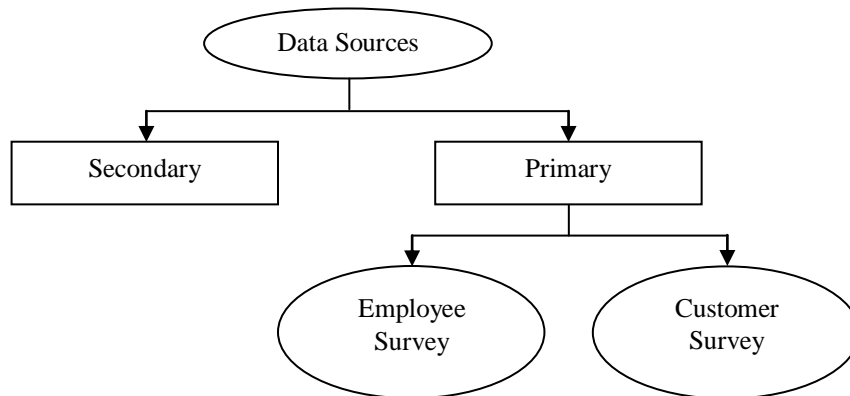
- Secondary data were used to measure the relative efficiency of a sample of 17 commercial banks. The main source of secondary data is the NRB website: www.nrb.org.np.

  The annual data on total deposit, total expenses, total credit, total loan and advances, interest expenses, operating expenses, interest income, and other incomes of 17 commercial banks were taken from website for the period 2005/06 to 2009/10. The data were compiled in Excel's spreadsheets and used for computing relative efficiency.

- Employee survey was carried out to measure the six dimensions of TQM practices – leadership, strategic planning, customer focus, human resource focus, information analysis, and process management as well as the five dimensions of service quality and organizational performance.

- Customer survey was carried out to generate measures of the customer satisfaction and five dimensions of service quality – tangibles, responsiveness, reliable, assurance and empathy.

3.2 Sample Selection

At the starting year (2009/10) of this study, 27 commercial banks were in operation. Out of 27 commercial banks only 17 banks meet the selection criterion – commercial banks that were under operation for at least seven years by the fiscal year 2009/10 – and these 17 banks constitute the primary sample. The name list and category (based on ownership) of these 17 banks are in Table 3.1.

Table 3.1: **Name List of Sampled Banks by Category**

S.N.	Bank	Category
1	Nepal Bank Limited (NBL)	SOB
2	Rastriya Banijya Bank (RBB)	SOB
3	NABIL Bank Limited.(NABIL)	JVB
4	Standard Chartered Bank Nepal Limited.(SCBNL)	JVB
5	Himalayan Bank Limited.(HBL)	JVB
6	Nepal SBI Bank Limited. (NSBI)	JVB
7	Nepal Bangladesh Bank Limited. (NBBL)	JVB
8	Everest Bank Limited.(EBL)	JVB
9	Nepal Investment Bank Limited.(NIBL)	PCB
10	Bank Of Kathmandu (BOK)	PCB
11	Nepal Credit and Commerce bank Limited. (NCC)	PCB
12	Nepal Industrial and Commercial Bank Limited. (NIC)	PCB
13	Lumbini Bank Limited.(LUMBINI)	PCB
14	Machhapuchre Bank Limited.(MBL)	PCB
15	Kumari bank Limited.(KUMARI)	PCB
16	Laxmi Bank Limited (LAXMI)	PCB
17	Siddhartha Bank (SIDDHARTHA)	PCB

In employee survey, some difficulties were faced in the selection of respondents. First, the sampling frames of the employees were not available. Second, during the pilot survey it was realized that not all selected employees were willing to participate in the survey. It was, therefore, decided to select not less than 200 employees who were willing to take part in the survey. In customer survey, it was decided to interview not less than 200 customers visiting for bank services after taking their consent.

36

3.3   Methods for Measuring Relative Efficiency

In this study Data Envelopment Analysis (DEA) was used to measure the relative efficiency of 17 commercial banks from fiscal year 2005/6 to 2009/10. For computing relative efficiency solver add-in was used that comes with Microsoft Excel.

DEA which is also called frontier analysis is a performance measurement technique which can be used for analyzing the relative efficiency of productive units, having the same multiple inputs and multiple outputs. This technique measures how efficiently a Decision Making Unit (DMU) uses the resources available to generate a set of outputs (Ramanathan, 2006).In this study DMUs are 17 commercial banks.

The technique of Frontier analysis has been described by Farrel in 1957, but a mathematical framework to handle the frontier analysis was provided by Charnes, Cooper and Rhodes (CCR-Model) in 1978 and coined the term as data envelopment analysis.

Efficiency can be defined as the ratio of virtual output to virtual Input.

The virtual output of a firm is obtained as the linear weighted sum of all its outputs and that of virtual input is also obtained as the linear weighted sum of all its inputs.

$$\text{Efficiency} = \frac{\text{Weighted sum of outputs}}{\text{Weighted sum of inputs}}$$

The critical issue at this stage is the assessment of the weights as there is no unique set of weights. The weights assigned should be flexible and reflect the performance of the individual DMU and should be restricted to values between 0 and 1.

Suppose that there are n DMUs, each with m inputs and n outputs, relative efficiency score of a given DMUo is obtained by solving the following linear programming model.

$$\max h_{\text{o}}(u,v) = \frac{\sum_{r=1}^{n} v_r y_{ro}}{\sum_{i=1}^{m} u_i x_{io}}$$

Subject to

$$\frac{\sum_{r=1}^{n} v_r y_{rj}}{\sum_{i=1}^{m} u_i x_{ij}} \leq 1; j = 1,2,.......n$$

$u_i \geq 0; i = 1,2,.......m$

$v_r \geq 0; r = 1,2,.......n$

Where

x_{ij} = the amount of input i utilized by the jth DMU

y_{rj} = the amount of output r produced by the jth DMU

u_i = weight given to input i

v_r = weight given to output r

According to the charnes-cooper transformation (1962), we can select a representative solution (u, v) for which

$$\sum_{i=1}^{m} u_i x_{io} = 1$$

Hence, the denominator in the efficiency score h_0 shown above is set equal to one, the transformed linear programming model for DMUo can be written as follows.

$$\max z_o = \sum_{r=1}^{n} v_r y_{r0}$$

Subject to

$$\sum_{r=1}^{n} v_r y_{rj} - \sum_{i=1}^{m} u_i x_{ij} \leq 0; j = 1,2,..........,n$$

$$\sum_{i=1}^{m} u_i x_{i0} = 1$$

$u_i \geq 0; i = 1,2,.......m$, $v_r \geq 0; r = 1,2,.......n$

The linear programming model shown above will be run n times in identifying the relative efficiency scores of all the DMUs. Each DMU selects input weights that maximize its efficiency score. Generally, a DMU is considered to be efficient if it obtains a score of 1.00, implying 100% efficiency; whereas a score of less than 1.00 implies that it is inefficient.

In this study, two approaches were employed to evaluate the relative efficiency of CBs by category as employed by Supachet Chansarn (2008) to examine the relative

efficiency of Thai Commercial banks during 2003-2006 via operation approach and intermediation approach according to size: large, medium and small banks.

The first one is intermediation approach (asset approach) in which the banks are regarded as entities which transform deposits into loans credit and investments by employing labor and capital. For this approach two inputs and two outputs are being included.

Input 1-Total deposit.

Input 2-Total expense (includes interest expenses, operating expenses and other expenses)

Output 1-Total Credit

Output 2- Total loans and advances

Let i be amount of input utilized by a decision making unit (DMU),

r be amount of output produced by a DMU,

u_i be weight given to input i,

v_r be weight given to output r,

The DEA model will be as follows:

$$Max\ Z_o = \sum_{r=1}^{2} v_r y_{ro}$$

Subject to

$$\sum_{r=1}^{2} v_r y_{rj} - \sum_{i=1}^{2} u_i x_{ij} \leq 0;\ j = 1, 2, \dots .17$$

$$\sum_{i=1}^{2} u_i x_{io} = 1$$

$$u_1, u_2 \geq 0$$

$$v_1, v_2 \geq 0$$

The second one is operation approach in which the efficiency of commercial banks are evaluated from the perspective of costs/revenue management .For this approach following variables are considered.

Input 1-Interest expenses

Input 2-Operating expenses

Output 1-Interest income

Output 2-Other incomes

The simplex procedure was applied for the efficiency evaluation of commercial banks through solver add-in. The procedure was given below:

Procedure simplex

$$\text{While } opt = 'no' \text{ and } unbounded = 'no' \text{ Do}$$
$$if \ c_j \geq 0 \ for \ all \ j \ then \ opt = 'yes'$$
$$\text{else begin}$$
$$choose \ any \ j \ such \ that \ c_j < 0$$
$$if \ x_{ij} \leq 0 \ for \ all \ i \ then \ unbounded := 'yes'$$
$$else$$

$$find \, \theta_o = \min_{\substack{i \\ x_{ij} > 0}} \left[\frac{x_{io}}{x_{ij}} \right] = \frac{x_{ko}}{x_{kj}}$$

$$and \ pivot \ on \ x_{kj}$$
$$end$$

Source: Combinatorial optimization Algorithms and complexity by Christis H. Papadimitriov & Kennteth Steiglitz

3.4 Employees Survey

This survey was conducted to know about perception of TQM practices, service quality and organizational performance from bank employees' perspectives.

3.4.1 Key Variables

In the study, TQM components viz: leadership, information analysis, strategic planning, human resource focus, customer focus, and process management were defined as independent variables. The dependent variable is service quality. The additional variable is organizational performance which includes customer satisfaction, profitability and productivity. The operational definition of these variables is given below:

3.4.1.1 Independent variables:

- Leadership (LD)

  Leadership is defined as "the process whereby one individual influences other group members towards the attainment of defined group or organizational goals." (Yuki, 1989). The influences to subordinates matters a lot in any organization.

- Information and analysis (IA)

40

Information analysis is a systematic recording of data of all facets of each process which will facilitate taking a proper decision.

- Strategic planning (SP)

Strategic planning is procedures for making decisions about the organization's long-term goals and strategies (Snell & Bohlander, 2007).One of the main strategic planning of a bank is clear quality goal to gain competitive advantage.

- Human resource focus (HR)

Any organization will achieve its objectives and goals only if it is able to plan its human resource. While focusing on human resource an organization should have plan for their involvement through empowerment and capacity development.

- Customer focus (CF)

Customers' needs and expectation should be well addressed by any organization for its advancement in the market. There should be some defined system of managing customer taking into the consideration of their satisfaction as a destiny

- Process management (PM)

Continual improvement in products and services an organization offers to its customers with innovative ideas is much appreciated. Monitoring and evaluating the production or service process is equally important to withstand in the market.

3.4.1.2 Independent variable

Service Quality (SQ)

The service quality is the level of quality in service organization including five dimensions: tangibles, reliability, empathy, assurance and responsiveness.

3.4.1.3 Additional variable

- Organizational performance

An organization keeps itself different from others by its performance which could easily be measured. In this study three measurable terms namely customer satisfaction, profitability and productivity were coined. Customer satisfaction is measured by assessing the customers' expectation and address of the customer complaints in improving product and services. Profitability is

earnings an organization makes in specific time bound while productivity is the output to each unit of input.

3.4.2 Development of Survey Instrument

A questionnaire was designed to elicit information about TQM practices service quality and organizational performance in CBs. Questionnaire was also translated in Nepali. The questionnaire was adapted from the review of many research papers that includes Rahman, 2001; Saraph, Benson, & Schroeder, 1989; Anderson et al.,1995; Alrgaibat & Alkhazali, 2011; Besterfiled et al., 2011; Metters et al., 2007; Iveta,2012; Sharma, Niedrcih, & Dobbins, 1999; McGovern et al., 2007; Cohen & Ledford, 1994; Vlahos et al., 1994; Ramsay, Scholarios, & Harley, 2000; Mowday, Steers, & Porter, 1979; Spreitzer, Cohen, & Ledford, 1999; Hattie & Timperley, 2007; Ledolter & Burril, 1999; Dilber et al., 2005; Nazarko, 2004; Ovretveit, 1993; Hartline & Ferrel, 1993; Taylor, 1993; Srivastava & Mishra, 2009; Yeow & Sen, 2006.

All items in an instrument are in 5 point Likert scale. The adapted instrument consists of 28 items of six TQM practices, 5 items of service quality each representing tangibles, reliability, empathy, responsiveness, and assurance ,5 items of profitability and productivity and 4 items of customer satisfaction.(see Annex 1)The questionnaire was used for pilot test. On the basis of pilot study some modification on the questionnaire was made and survey was being carried out.

3.4.3 Survey

Survey was done among employees of sampled commercial banks. Respondents were selected randomly from selected banks for study. Respondents were included from assistant level to special class level from any functional department whoever met during survey at a bank. During the survey, the respondents were told that the study was a part of a doctoral level research work. They were also informed about the objectives of the study as to know their attitudes towards TQM practices, service quality and organizational performance of their banks. It took almost three months of time to collect the filled in questionnaire. The collection was very much tedious since the employees were busy in their work. There were at least two visits to a bank for collection purpose.

To get a first–hand experience of the practice of bank, the researcher visited banks personally. The purpose was to interact with employees to know about their perception towards banking operations which was not being covered by structured questionnaire. It was realized that personal visit by researcher made employees fill in questionnaires enthusiastically.

3.4.4 Data Management

The collected questionnaire were carefully checked and given number for identifying the case as an individual. A coding list was prepared for all variables in the questionnaire. After coding a data entry format was built in variable view of SPSS and entered data subsequently.

3.4.5 Measuring Instruments/Questionnaire: Description and Adaptation

For testing the psychometric characteristics of the instruments, the data were collected from 206 employees including six functional departments of a bank. The functional departments were: Human resources, Treasury / cash / remittance / bills / swift, Trade finance / international banking / LIC, Credit, Marketing, Accounts / operations / administration. It was done to ensure the external validity of the questionnaire across various functional units of a bank.

3.4.6 Scale for Measuring Total Quality Management Practice and Organizational performance

The scale we adapted was used to be in a different cultural context and organizational context so it was decided to perform pilot study although the authors had provided psychometric characteristics of the scale.

After successful pilot study, modification of scale was done. Then the employee survey was done. The data collected from 206 respondents were subjected to run factor analysis to see the unidimensionality. There had been suppression of factor loadings less than .004. The five factor solution was obtained in the initial run. Then dropped the items subsequently which were cross loaded in two or more than two factors at a time and found to be scattered from the specific cluster. Finally in the sixth run 23 items were retained into five factors. Fearing about the loss of information due to dropping the items at once which were cross loaded, the one by

one deletion of cross loaded item was performed subsequently. These items were considered for further analysis.

3.4.7 Reliability and Validity of The Survey Instruments

Validity indicates the degree to which an instrument measures what it is supposed to measure (Kothari, 2000).In this study factor analysis was used for construct validity. Once the unidimensionality was established as discussed above, an assessment of reliability was performed. Reliability of a questionnaire is given by the proportion of true variance resulting from the presence of specific situation under consideration and error variance resulting from the presence of some factors irrelevant to the present situation (Roy, 2010). In this study Cronbach's coefficient alpha was considered as the internal consistency indices.

3.4.8 Statistical Modeling

In this stage of the research there were many statistical analyses from various angles to establish the relationship among the variables under study. At the end the model was accepted which fulfilled the objectives of the research justified with the tests of its suitability. In an effort of building statistical model between TQM components and service quality in context of CBs in Nepal through employees' survey, initially both TQM components and service quality variables are extracted via Factor analysis. Finally multiple regression model was fitted between Service quality (SQ) as dependent variable and five Independent variables as follows.

$$SQ = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \varepsilon$$

Where,
SQ=Service quality
$x_1 = $ Leadership (LD)

$\qquad x_2 = $ Strategic planning and Information Analysis (SPIA)

$x_3 = $ Human Resources (HR)

$x_4 = $ Customer Focus (CF)

$x_5 = $ Process Management (PM)

$\varepsilon = $ Error term

Like-wise an attempt has been made to build the statistical model between Customer satisfaction (CST) as dependent variable and five independent Service quality variables. These six variables (constructs) were extracted through factor analysis. Finally multiple regression model was built to investigate the functional relationship as follows

$$CST = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \varepsilon$$

Where,

CST=Customer satisfaction

$x_1 = \text{Tangibles (TAN)}$

$$x_2 = \text{Reliability (REL)}$$

$x_3 = \text{Empathy (EMP)}$

$x_4 = \text{Assurance (ASN)}$

$x_5 = \text{Responsiveness (RES)}$

$\varepsilon = \text{Error term}$

All assumptions regarding linearity, multi-collinearity, homoscedasticity, and normality of error were fulfilled.

3.5 Customer Survey

To know about the perceptions of bank customers towards service quality and their satisfaction customers of above sampled banks were administered structured questionnaires.

3.5.1 Key variables

In this study five dimensions of service quality are defined as independent variables. The dependent variable is customer satisfaction. The operational definition of these variables is given below:

3.5.1.1 Independent variable

Service quality is independent variable which includes following five dimensions.

1. Tangibles (TAN): This dimension includes physical aspects with services like outlook of persons, buildings, physical facilities, equipment and other visible facilities.

2. Reliability (REA): This dimension refers to the ability of an organization to keep up with its promises made to its clients on time.

3. Empathy (EM): This dimension refers to ability of employees understanding the customers' personal needs and treating them as close friends showing all sorts of sympathy and affection.

4. Assurance (ASN): This dimension refers to ability of employees creating feeling of trust and confidence in dealing with the customers.

5. Responsiveness (RES): This dimension refers to employees' quick response to customers to fulfill their needs and expectation.

45

3.5.1.2 Dependent variable

Customer satisfaction (CS): It measures whether a customer has received the level of service he/she has been looking for from the service provider.

3.5.2 Development of survey Instrument

A questionnaire was designed for customer survey. There had been review of similar studies to draw an idea about designing the questionnaire. Parasuraman, Zeithamal, & Berry (1988) had developed a 22 item instrument called SERVQUAL to assess the service quality of service and retailing organizations. Al-Hawary, Alhamali, & Alghanim (2011) had done research on banking service quality provided by commercial banks and customer satisfaction. This study had adopted the instrument for customer survey from these studies. All items were rated by respondents on A 5-point Likert scale starting 1 with strongly disagree to 5 with strongly agree. In this study one open-ended question was added to know about any extra suggestion and comments from respondents' regarding the service quality of a bank. The questionnaire was also translated into Nepali to make respondents much clear on the information sought from them (see Annex 3).

Since the instruments was going to be used in different context from what it was originally being used, 50 customers from selected banks were administered the questionnaire personally. It was very much easy for the respondents to fill in the questionnaire leading the researcher stick on the questionnaire adopted for study.

3.5.3 Survey

A total of 202 customers were contacted personally and received information via questionnaire with face to face interview. During the survey, the respondents were told that the study was a part of a doctoral level research work. They were also informed about the objectives of the study as to know their attitudes towards service quality and their satisfaction and provide some comments and suggestion for the improvement of a bank. The main challenge in survey was time factor of a respondent and security reason in a bank. The average collection of questionnaire was 5 per day. The survey took about two months of time. The average time taken for a questionnaire to get filled in was from 30-45 minutes.

3.5.4 Further process

After collecting the data, there had been data management subsequently and the validity and reliability of instruments was assessed by using factor analysis and Cronbach's alpha. Exploratory factor analysis on items of each service quality dimension has produced each group of items as single construct which confirmed the construct validity. Finally the suitable statistical model was built after rigorous process.

3.6 Methods Impact Assessment

This study used the perceptual nature of data to reflect the theoretical constructs. For answering the questions of impact of TQM constructs on service quality and its refection on organizational performance the perceptual data were obtained from the employees. Likewise, for answering the perceptions of service quality and satisfaction the perceptual data were obtained from customers.

To establish the relationship between (i) valid TQM construct and service quality; (2) service quality and customer satisfaction, multiple regression analysis was used

All assumptions regarding, linearity, multi-collinearity, homoscedasticity, and normality of error were tested. For both survey scatter diagrams were obtained to confirm the linear relationship between each independent variable and dependent variable, correlation matrix and variance inflation factor were used to see the presence or absence of multi-collinearity. To observe the acceptable distribution pattern regarding normality of error and homoscedasticity the histogram and scatter graph of residuals were used. Also, Kolomogorov Smrinov test was performed to ensure the normality assumption.

CHAPTER 4:   RESULTS AND DISCUSSION

The main results of this study are presented in this chapter. In the first section of this chapter, results based on secondary data are presented; more specifically Data Envelopment Analysis of secondary data measuring relative efficiency of 17 commercial banks via intermediation and operation approach is presented. In the other two sections results based on employee survey and customer survey are presented.

4.1   Relative Efficiency: Intermediation Approach

Intermediation approach (IA) primarily measures the efficiency of banks in transforming the deposits into credits and investments with intermediation of expenses. The mean and coefficient of variation (CV) of four variables – total deposits, total expenses, total credits and total investments – involved in IA as input and output variables based on 17 commercial banks are summarized In Table 4.1 by year.

Table 4.1: **Summary Measures of Input and Output Variables of IA (in '000 Rs)**

Variables	Statistics	2005/06	2006/07	2007/08	2008/09	2009/10
Total Deposits	Mean	15432557	17667629	21742755	26569578	28764053
	CV (%)	76.5	72.2	71.4	62.7	59.0
Total Expenses	Mean	741378	843847	983343	1324953	1851960
	CV (%)	75.6	65.5	60.6	54.7	50.9
Total credits	Mean	8238159	10050682	13151293	16808830	19172981
	CV (%)	45.0	46.4	48.7	49.6	50.4
Total Investments	Mean	4876044	5304708	5812737	6650388	6708021
	CV (%)	96.3	98.8	95.5	90.1	85.3

Source: Computed from the NRB Database

The correlation coefficient between the two input variables (total deposits and total expenses) for the years 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 based on 17 banks correspondingly turned out to be 0.931, 0.965, 0.936, 0.937, and 0.897, showing very strong linear relationship between input variables in each year. Likewise, the correlation coefficient between the two output variables (total credits and total investments) for the years 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 correspondingly turned out to be 0.741, 0.696, 0.616, 0.443, and 0.467, showing moderately high linear relationship for the first three years and low for the last two years.

The annual relative efficiency via intermediation approach of the 17 commercial banks for the study period, 2005/06 to 2009/10, is presented in Table 4.2.

Table 4.2: Relative Efficiency of Commercial Banks via Intermediation Approach

Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Row Ave
NBL	0.7185	0.6747	0.6775	0.5005	0.6399	**0.6422**
RBB	0.5667	0.5687	0.5710	0.5712	0.6427	**0.5841**
NABIL	0.9406	1.0000	0.9657	1.0000	0.9783	**0.9769**
SCBNL	1.0000	0.9448	1.0000	0.7625	1.0000	**0.9415**
HBL	0.9577	0.9174	1.0000	0.9429	0.9525	**0.9541**
NSBI	0.9723	0.9976	1.0000	0.8500	0.8909	**0.9421**
NBBL	0.6589	0.5407	0.5370	0.7461	0.9386	**0.6843**
EBL	0.9571	0.9697	0.9168	0.9642	0.9211	**0.9458**
NIBL	0.9180	0.9192	0.9175	0.9830	0.9817	**0.9439**
BOK	0.9638	0.9440	0.9260	1.0000	0.9822	**0.9632**
NCC	0.6873	0.7183	0.7524	0.8758	0.8840	**0.7836**
NIC	0.9714	0.9809	0.9249	1.0000	1.0000	**0.9754**
LUMBINI	0.6857	0.7336	0.7548	0.8437	1.0000	**0.8036**
MBL	0.8179	0.8315	0.7877	0.9482	0.8452	**0.8461**
KUMARI	0.9505	0.9419	0.9034	0.9524	0.9085	**0.9313**
LAXMI	0.9165	0.9717	0.8703	0.9800	0.9361	**0.9349**
SIDDHARTHA	1.0000	1.0000	0.8959	0.9306	0.8991	**0.9451**
Column Average	**0.8637**	**0.8621**	**0.8471**	**0.8736**	**0.9059**	**0.8705**

Source: Computed from the NRB Database

The main findings are summarized below.

- Comparison of the average efficiency of the seventeen CBs (that is column averages) has shown small variations, ranging from 0.8637 in 2005/06 to 0.9059 in 2009/10, across the five years and, also, has shown an increasing trend. The number of banks producing their output on efficient frontier (relative efficiency = 1) has also increased from 2 in the first two consecutive years to 3 in the last three consecutive years. These evidences lead to conclude that the commercial banks of Nepal, on the average, are continually improving their relative efficiency.

- On the contrary, comparison of the average relative efficiency of five years (that is row averages) has shown large variations, ranging from 0.5841 for NBL to 0.9769 for NABIL, across the seventeen banks. This means commercial banks of Nepal vary drastically in transforming the deposits into credits and investments with intermediation of expenses. This is more vividly presented in Figure 4.1 where banks are ordered (lowest to highest) with respect to their average efficiency.

Figure 4.1: Ordering of Banks by Average IA Relative Efficiency
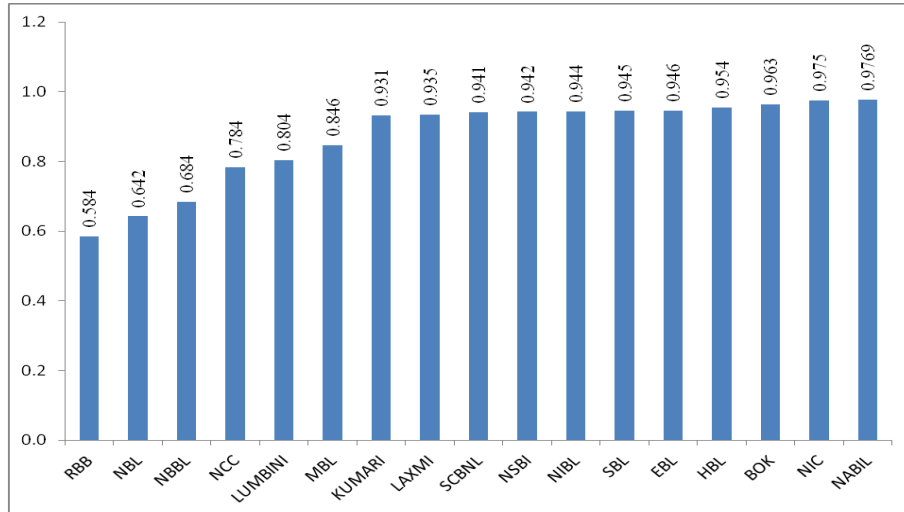
Figure 4.2 presents the average efficiency of commercial banks bank type. The average efficiency of SOBs is consistently lower than that of JVBs and PVBs in each year. The average efficiency of PCBs is consistently lower than that of JVBs in each year except in the year 2008/09.

Figure 4.2: Average IA Relative Efficiency of Bank Type by Years

	2005/06	2006/07	2007/08	2008/09	2009/10	Average
SOBs	0.6426	0.6217	0.6242	0.5359	0.6413	0.6131
JVBs	0.9144	0.8951	0.9033	0.8776	0.9469	0.9074
PCBs	0.8790	0.8935	0.8592	0.9460	0.9374	0.9030
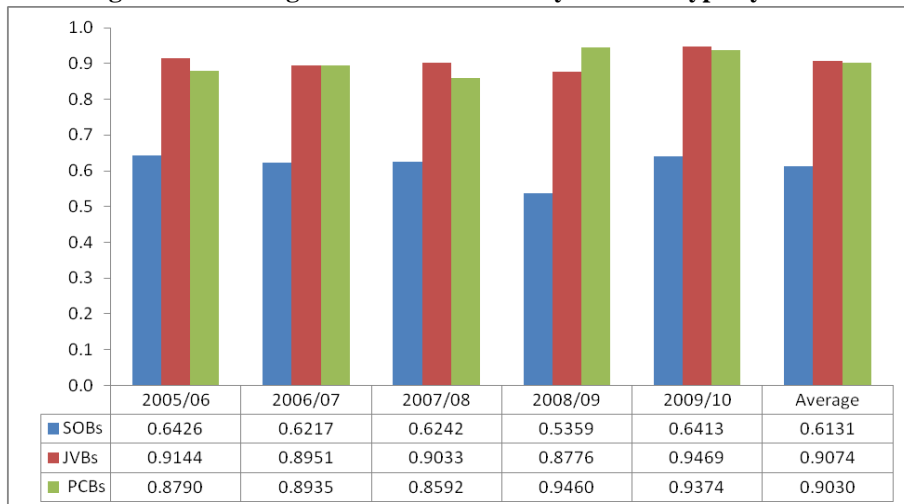
In summary, despite the large variations in efficiencies across the 17 commercial banks, the average efficiency across time has shown an increasing trend. The average efficiency of the State owned banks is remarkably lower than that of the joint venture banks or private commercial banks in each of the five years. Also, the average relative efficiency of joint venture banks is higher than that of private commercial banks in each of the five years except in the year 2008/09.

This indicates that joint venture banks are able to transform deposits into credits and investments more efficiently comparing to state owned banks and private commercial banks. This finding tells us that TQM practices are more effective in case of joint venture banks. The success of JVBs shows the good sign for the foreign investments in this sector. At the same time both SOB's and PCB's are getting space for improvement for becoming competitive enough in the market.

4.2 Dynamics of Input/output of IA

In order to examine the position of the bank in the competitive financial markets, this section mainly compares the annual distribution of percentage shares of input/output variables of intermediation approach over the bank type. The results are summarized in Table 4.3.

Table 4.3: Percentage Share of Input-Output Variables of IA By Year & Bank Type

	2005/06	2006/07	2007/08	2008/09	2009/10
Total Deposits					
SOB	31.3	29.8	28.7	25.1	22.6
JVB	40.7	39.0	38.4	39.7	41.1
PCB	28.1	31.2	32.8	35.2	36.2
Total Expenses					
SOB	33.0	29.6	27.6	24.8	22.3
JVB	36.1	36.5	35.9	34.9	35.3
PCB	31.0	33.9	36.6	40.3	42.4
Total Credit					
SOB	17.4	16.6	15.4	15.3	16.5
JVB	43.1	41.3	40.5	39.1	39.6
PCB	39.5	42.1	44.1	45.6	43.9
Total Investments					
SOB	31.4	31.9	31.4	25.5	16.5
JVB	48.7	47.7	47.3	54.2	57.3
PCB	19.9	20.5	21.3	20.4	26.2

Source: Computed from the NRB Database

The main findings are below.

- In the case of JVB, the percentage share of two input variables has remained almost same throughout the study period: around 40% for deposit and around 36% for expenses. The percentage share of credit has declined from around 43% in 2005/06 to around 40% in 2009/10. On the other hand, the percentage share of investment has dramatically increased from around 49% in 2005/06 to around 57% in 2009/10.

- In the case of SOB and PCB, the percentage share of deposit has continually decreased in the case of SOB, while it has continually increased in the case of

PCB. Similar trend is continued for the variables – expenses and credits. The percentage share of investment has declined by around 15 percentage points in the case of SOB, while it has increased by around 6 percentage points in the case of PCB and around 9 percentage points in the case of JVB.

In summary, SOB continually slipped down in the financial market by not being able to retain its initial percentage shares of deposit, credit, and investment over the study period. The slipped percentage shares seem to be spelled over the PCB.

This indicates that SOB's were not able to retain its customers due to lack of TQM practices because these banks got affected by political scenario of the country. The market of JVB's remaining untouched because of the range of the product and services being offered to customers. This may be due to consistent TQM practices in these banks. The PCB's comparatively offers the flexibility in the interest rates to depositors as well as less hazels in approving loans and investments comparing to SOB's. However, empirical research is necessary to validate the claims.

4.3 Relative Efficiency: Operation Approach

Operation Approach (OA) primarily measures the efficiency of banks from the perspectives of costs/revenue management. The mean and coefficient of variation (CV) of four variables - Interest expenses, operating expenses, interest income and other income – involved in OA as input (first two) and output (last two) variables based on 17 commercial banks are summarized in Table 4.4 by year.

Table 4.4: **Summary Measures of Input and Output Variables of OA (in '000 Rs)**

		2005/06	2006/07	2007/08	2008/09	2009/10
Interest Expenses	Mean	401695	479638	560541	782039	1177322
	CV (%)	48.9	42.0	41.6	43.6	48.2
Operating expenses	Mean	152805	159770	178675	223437	259641
	CV (%)	71.8	60.2	51.1	49.7	46.6
Interest Income	Mean	941138	1084662	1303036	1774430	2369043
	CV (%)	62.7	53.1	51.3	48.8	47.9
Other Income	Mean	210188	235629	286524	357538	358832
	CV (%)	83.4	73.6	69.5	63.6	71.1

Source: Computed from the NRB Database

The correlation coefficient between the two input variables – interest expenses and operating expenses - for the years 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 correspondingly turned out to be 0.857, 0.922, 0.898, 0.733, and 0.707, showing very strong linear relationship between input variables in the first three years and moderate linear relationship in the last two years. Likewise, the correlation coefficient between

the two output variables – interest income and other income - for the years 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 correspondingly turned out to be 0.890, 0.899, 0.0.851, 0.844, and 0.746, showing high linear relationship in each year .

The annual relative efficiencies via operation approach of the 17 commercial banks for the study period, 2005/6 to 2009/10, are presented in Table 4.5.

Table 4.5: Relative Efficiency of Commercial Banks Via Operations Approach

Bank	2005/06	2006/07	2007/08	2008/09	2009/10	Row Average
NBL	0.5113	0.8405	0.9355	0.6655	0.9157	**0.7737**
RBB	0.8261	0.8435	0.9215	0.7714	1.0000	**0.8725**
NABIL	1.0000	1.0000	1.0000	0.8238	1.0000	**0.9648**
SCBNL	1.0000	1.0000	1.0000	1.0000	1.0000	**1.0000**
HBL	0.5963	0.7379	0.7020	0.5477	0.6410	**0.6450**
NSBI	0.5546	0.7375	0.6422	0.3370	0.5459	**0.5635**
NBBL	0.7735	0.8533	0.9738	1.0000	0.8990	**0.8999**
EBL	0.5931	0.7712	0.7332	0.4878	0.7248	**0.6620**
NIBL	0.6703	0.7972	0.7707	0.4981	0.8376	**0.7148**
BOK	0.6893	0.7945	0.7197	0.5312	0.6402	**0.6750**
NCC	0.6214	0.5987	0.6847	0.6008	0.7383	**0.6488**
NIC	0.7889	0.7261	1.0000	0.7153	0.9106	**0.8282**
Lumbini	0.4173	0.6537	0.7449	0.7326	0.7107	**0.6519**
MBL	0.5483	0.6618	0.6475	0.3285	0.5588	**0.5490**
Kumari	0.4725	0.7501	0.6284	0.3354	0.6325	**0.5638**
Laxmi	0.4490	0.6546	0.7805	0.5230	0.8090	**0.6432**
SBL	0.5093	0.7067	0.8872	0.4151	0.6859	**0.6408**
Column Average	**0.6483**	**0.7722**	**0.8101**	**0.6066**	**0.7794**	**0.7233**

Source: Computed from the NRB Database

The main findings are summarized below.

- The trend of average efficiency (along column: study period) of commercial banks seems in increasing trend. However, it has the lowest efficiency score in 2008/09, while the trend experiences the highest efficiency score in 2007/08.There are two joint venture banks namely NABIL and SCBNL producing their output on efficient frontier throughout the study period except in the year 2008/09 in case of NABIL. From the SOB, RBB appeared to be in the efficient frontier only in 2009/10.

- The average efficiency (along row: bank- wise) of commercial banks has shown large variations, ranging from 0.5490 for MBL to 1.000 for standard chartered. This means commercial banks of Nepal vary drastically from the perspectives of cost/revenue management. This is more vividly presented in Figure 4.3 where banks are ordered (lowest to highest) with respect to their average efficiency.

Figure 4.3: Ordering of Banks by Average OA Relative Efficiency
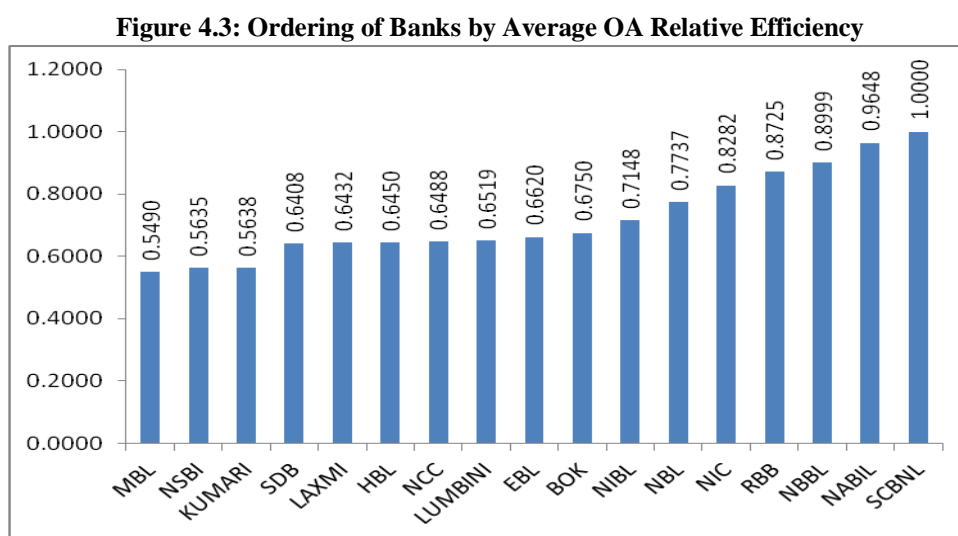
Source**:** Computed from the NRB Database

Figure 4.4 presents the average efficiency of commercial banks categorized by type. The average efficiency of SOBs is consistently higher than that of JVBs and PCBs in the study period except in the year 2005/06 and 2006/07.The average efficiency of JVBs is consistently higher than that of PCBs in study period.

Figure 4.4: Average OA Relative Efficiency of Bank Type by Years

	2005/06	2006/07	2007/08	2008/09	2009/10	Average
SOB	0.6687	0.8420	0.9285	0.7184	0.9579	0.8231
JVB	0.7529	0.8500	0.8419	0.6994	0.8018	0.7892
PCB	0.5740	0.7048	0.7626	0.5200	0.7248	0.6573
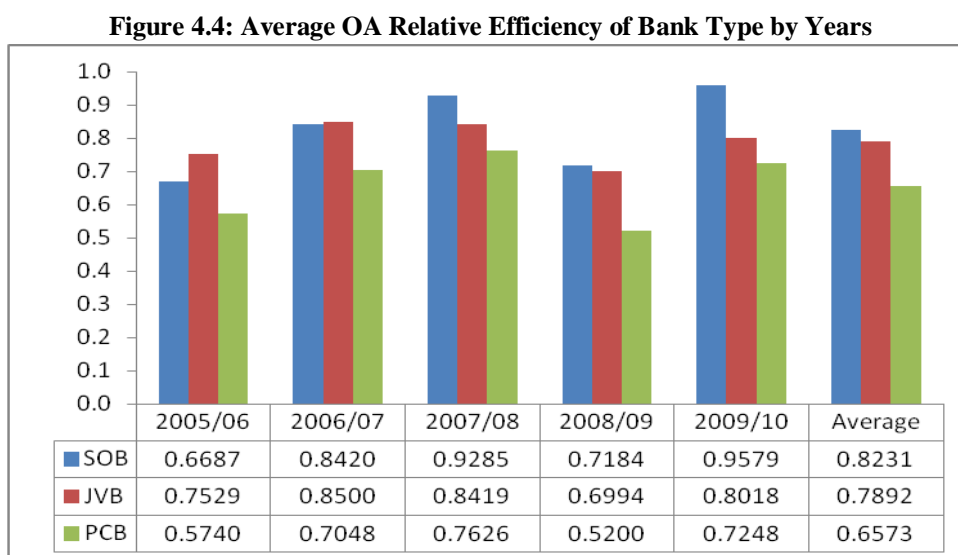
Source: Computed from the NRB Database

In summary, despite the wide variation in efficiencies across the 17 commercial banks, the average efficiency across the study period shows an increasing trend. The average efficiency score the SOB is remarkably higher than that of JVs and PCBs in the last three periods. Also, the average relative efficiency score of JVBs is higher than that of PCBs in each of the five years.

4.4 Dynamics of Input/output of OA

In order to examine the position of the bank in the competitive financial markets, this section focuses the annual distribution of percentage shares of input/output variables of operation approach over the bank type. The results are summarized in Table 4.6.

Table 4.6: Percentage Share of Input Output Variables of OA by Year & Bank Type

	2005/06	2006/07	2007/08	2008/09	2009/10
Input 1: Interest Expenses					
SOB	23.8	21.0	18.9	14.0	10.7
JVB	37.5	38.0	37.1	36.7	37.9
PCB	38.7	41.0	44.0	49.3	51.4
Input 2: Operating Expenses					
SOB	27.6	22.7	19.4	18.2	15.2
JVB	42.2	43.1	42.4	41.6	43.6
PCB	30.2	34.2	38.2	40.3	41.1
Output 1: Interest Income					
SOB	27.1	22.8	21.7	20.3	17.6
JVB	40.6	41.9	40.1	39.8	39.2
PCB	32.3	35.3	38.2	39.8	43.3
Output 2: Other Income					
SOB	25.6	23.4	22.5	21.8	17.8
JVB	50.4	49.1	48.6	46.0	49.1
PCB	24.0	27.6	29.0	32.2	33.1

Source: Computed from the NRB Database

The main findings are below:

- In case of SOB the percentage share of two input variables has declined drastically. The percentage share of interest expenses has declined from around 23.8% in 2005/06 to around 10.7% in 2009/10. Similarly, that of operating expenses has also declined from 27.1% in 2005/06 to 15.2% in 2009/10. Consequently it has been observed the same pattern of percentage share of two output variables.

- In case of JVB the percentage share of input variables has remained almost constant throughout the study period: around 37% for interest expenses and around 42% for operating expenses. While there has been slight decline in the

55

percentage share of output variables: from around 40.6% in 2005/06 to around 39.2% in 2009/10 for interest income and from around 50.4% in 2005/06 to 49.1% in 2009/10 for other income.

- In case of PCB the percentage share of both input variables and output variables have been observed drastically in increasing trend. The percentage share of input variables namely interest expenses has been observed around 38.7% in 2005/06 and around 51.4% in 2009/10 and operating expenses from around 30.2% in 2005/06 to around 41.1% in 2009/10. Similarly, the percentage share of output variables namely Interest income has been found around 32.3% in 2005/06 to around 43.3% in 2009/10. Also, the percentage share of other income in 2005/06 has been observed as 24% and 33.1% in 2009/10.

4.5 Comparison of Two Approaches

The outputs of two approaches have produced two very dissimilar results, particularly when banks are ordered with respect to their average efficiencies. In fact the correlation coefficient between the five years average efficiencies of 17 banks via two approaches appear to be negative. Likewise, the least efficient SOB type via intermediation approach turned out to be the most efficient via operation approach. Despite this fact, it is reasonable to investigate which of the two approaches is less volatile in terms of their outputs. Volatility is investigated by comparing means and coefficient of variations of efficiency scores as described below.

The mean efficiency of 17 banks for five years due to the two approaches is displayed in Figure 4.5. The line graph of IA approach is more stable than that of the OA approach, in the sense that less magnitude of ups-and-downs (shocks) are appeared among the outputs of IA approach than those among the OA approach.

Figure 4.5: Comparison of IA and OA Efficiency Score Means by Year

	2005/06	2006/07	2007/08	2008/09	2009/10
Average of IA	0.8637	0.8621	0.8471	0.8736	0.9059
Average of OA	0.6483	0.7722	0.8101	0.6066	0.7794

56
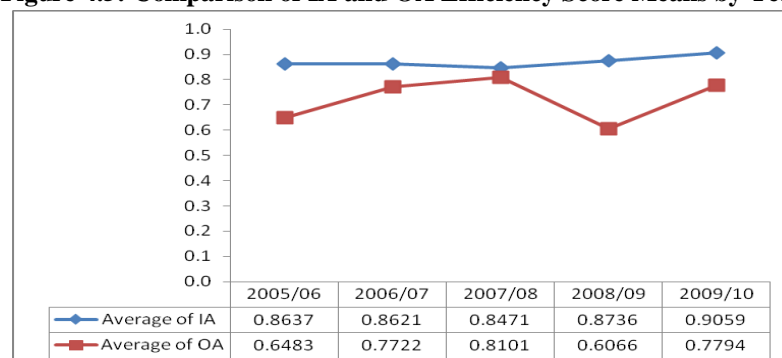
The coefficient of variations (CV) within each year of efficiency across the 17 banks for two approaches are computed and displayed in Figure 4.6. The CV is also appeared more erratic for among the OA outputs than among the IA outputs.

Figure 4.6: Comparison of IA And OA Efficiency Scores CVs By Year

	2005/06	2006/07	2007/08	2008/09	2009/10
CV of IA Efficiences	16.5	17.9	17.1	17.2	12.1
CV of OA Effeciences	27.4	14.5	17.0	34.9	19.8
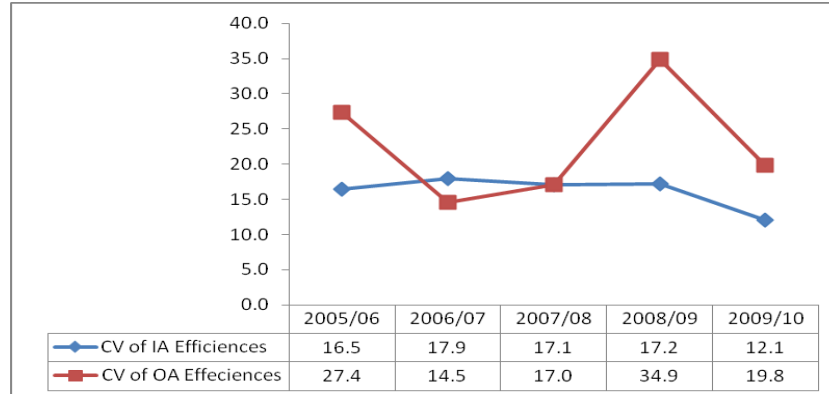
In summary, the outputs of OA have shown higher magnitudes of ups-and-downs in five years both in mean efficiency scores and coefficient of variations across banks as compared to those of IA. In terms of volatility, the conclusion is IA outputs are less volatile than OA outputs.

The above finding is just opposite to the study by Chansarn (2008) which indicated that efficiency of Thai commercial banks via intermediation approach is not as high as the efficiency via operation approach. The reason behind this situation in Thailand was due to Asian financial crisis in 1997. Because this crisis leads to enormous NPLs which caused Thai commercial banks more cautious in approving loans leading to too much liquidity situation in banking sector. In context of Nepalese commercial banking sectors due to increasing number of banks in recent times, the competitive situations prevailed in the market which leads to banks to approve loans more efficiently to show their competitive position in the financial market. At the same time expansion of bank branches to a quite large numbers in this sector leads to increase in the operating expenses which caused the lower efficiency in case of operation approach. Therefore, it has been observed the challenges in TQM implementation in commercial banking sector.

4.6 Employee Survey: Results

In order to measure the five constructs (see Table below) a questionnaire containing 42 Likert items (hereafter referred to as items) – each is in 5-point scale - is constructed and distributed to randomly selected 300 employees of the 17 CBs. The

results regarding the TQM practice, SQ and organizational performance of the 17 CBs from employees' perspectives is discussed in this section along with testing of research hypothesis. Socio-demographic characteristic of respondents, descriptive characteristics of items and constructs, correlation analysis, factor analysis, scale reliability analysis are presented first followed by multiple regression models for emergent factors and service quality. Finally, descriptive statistics and scale reliability of customer satisfaction, productivity, and profitability are presented along with relationship between productivity and profitability.

Construct	# of Items	Remarks*
TQM	28	Q1 to Q28
Service Quality (SQ)	5	Q33 to Q37
Productivity	2	Q41 and Q42
Profitability	3	Q38, to Q40
Customer Satisfaction	4	Q29 to Q32

Note: *Refer to Annex 1

4.6.1 Respondent Profile

Out of 300 questionnaires distributed, only 206 were able to collect implying that this survey's response rate is 68.7%. The distribution of the 206 respondents (employees) across the three bank types is 60 in SOB, 42 in JVB and 104 in PCB. The profile of the 206 respondents is summarized below which indicates that the coverage of sample respondents is broad in terms of socio-demographic variables.

- Composition of respondents by sex is 64.1% male and 35.9% female.

- Composition of respondents by age is 46.8% in the age group 20-29 years, 26.3% in the 30-39 years, 15.8% in the 40-49 years, and 11.1% in the 50+ group.

- Composition of respondents by marital status is 65.0% married and 35.0% unmarried.

- Composition of respondents by level of education is 4.6% intermediate level, 33.5% bachelor level, 61.3% master level, and 0.5% higher than master level.

- Composition of respondents by work experience is 69.7% below 11 years, 8.6% between 11 to 20 years, 21.7 above 20 years

- Composition of respondents by official position is 56.0% at assistant officer level, 26.0% officer level, 18.0% at top level.

4.6.2 Descriptive Statistics of TQM Dimensions

The distribution of 28 items across the six TQM dimensions is summarized in Table 4.7 (see last column). The mean value of summated item scores of each bank type and each dimension is computed and summarized in Table 4.7 which shows that the mean value of JVB is relatively higher than those of SOB and PCB in each dimension of TQM.

Table 4.7: Comparison of Mean Values of Six Dimensions across Bank Type

TQM Dimension	SOB	JVB	PCB	Overall	Total Items
Leadership (LD)	14.3 (3.58)	15.6 (3.9)	14.84 (3.71)	14.83 (3.71)	4
Information and analysis (IA)	10.97 (3.66)	12.7 (4.23)	11.09 (3.7)	11.38 (3.79)	3
Strategic planning (SP)	14.92 (3.73)	16.08 (4.02)	14.31 (3.58)	14.84 (3.71)	4
Human resource (HR)	27.98 (3.5)	28.13 (3.52)	27.09 (3.39)	27.56 (3.45)	8
Customer focus (CF)	12.92 (3.23)	14.8 (3.7)	12.88 (3.22)	13.27 (3.32)	4
Process management (PM)	18.32 (3.66)	20.18 (4.04)	18.35 (3.67)	18.7 (3.74)	5
Total cases	60	42	104	206	

Note: Figures in the parentheses are mean per item

The correlation coefficient of each pair of summated item scores is displayed in Table 4.8 which indicates that every pair of summated item scores is positively and significantly correlated.

Table 4.8: Correlation Matrix of each pair of Summated Item Scores

	LD	IA	SP	HR	CF	PM
LD	1					
IA	0.611	1				
SP	0.544	0.632	1			
HR	0.579	0.555	0.654	1		
CF	0.467	0.582	0.541	0.666	1	
PM	0.561	0.573	0.554	0.566	0.555	1

Note: Correlations are highly significant

4.6.3 Abstraction of TQM Components via Factor Analysis

Initial Solution of the Factor Analysis: The data collected from 206 employees on 28 items of TQM dimensions were submitted to exploratory factor analysis for validation of the factors. The overall measure of sampling adequacy as indicated by the Kaiser-Meyer-Olkin (KMO) turned out to be 0.923, which is above the acceptance level. The p-value of the Bartlett's test of sphericity turned out to be 0.000, which indicates that the correlation matrix is different from the identity matrix. The factor

loadings of the rotated solution are displayed in Table 4.10. The main findings are as follows.

- The extracted number of factors is five since 5 eigenvalues of the 28×28 correlation matrix are greater than one. The five factors extracted around 60% of total variance.

- Factor 1 contains 4 items of the dimension "CF" with relatively high value of factor loadings (> 0.6). It also contains 3 items of the dimension "HR" with relatively low value of factor loadings (< 0.5).

- Factor 2 contains 4 items of the dimension "SP" with relatively high value of factor loadings (> 0.6). It also contains 1 item of the dimension "HR" and 1 item of the dimension "IA" with relatively low value of factor loadings.

- Factor 3 contains 5 items of the dimension "PM" with relatively high value of factor loadings. It also contains 1 item of the dimension "HR" with relatively low value of factor loadings.

- Factor 4 contains 4 items of the dimension "LD" with relatively high value of factor loadings except in one case. It also contains 1 item of the dimension "IA" and 2 items of the dimension "HR" with relatively low value of factor loadings.

- Factor 5 contains only 4 item of the dimension "HR".

- The item HR1 is cross-loaded over the three factors- F1, F2 and F4. Similarly the item H8 is cross-loaded over two factors – F3 and F5.

Table 4.9: Rotated Component Matrix

Item	F1	F2	F3	F4	F5
LD1				0.763	
LD2				0.826	
LD3				0.663	
LD4				0.408	
IA1				0.436	
IA2		0.476			
IA3					
SP1		0.637			
SP2		0.812			
SP3		0.754			
SP4		0.610			
HR1	0.418	0.472		0.463	
HR2	0.495				
HR3	0.459				
HR4					0.794
HR5			0.499		
HR6					0.485
HR7					0.675
HR8			0.406		0.436
CF1	0.732				
CF2	0.794				
CF3	0.757				
CF4	0.616				
PM1			0.612		
PM2			0.839		
PM3			0.866		
PM4			0.583		
PM5			0.555		

Note: Factor loadings < 0.4 are suppressed

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

It is quite difficult to assign meaningful names to the extracted five factors mainly due the problem of cross-loading as well as nuisance factor loadings appeared in all factors except F5. In order to get meaningful factors, a number of runs of factor analysis is made as described below in the Table.

Run Number	Removed Variable	Entered	Alpha	KMO	p-value	Total variance explained
1	None	28	0.942	0.923	0.000	60.411
2	HR1	27	0.939	0.921	0.000	60.495
3	IA1	26	0.936	0.918	0.000	60.946
4	HR2	25	0.934	0.916	0.000	61.429
5	HR3	24	0.930	0.913	0.000	62.135
6	HR5	23	0.929	0/913	0.000	63.353

Final Solution of Factor Analysis: The overall measure of sampling adequacy in the final solution as indicated by the Kaiser-Meyer-Olkin (KMO) turned out to be 0.913. The p-value of the Bartlett's test of sphericity turned out to be 0.000. The factor loadings of the final rotated solution are displayed in Table 4.10. The main findings are as follows.

- The five factors as observed in the initial solution continued to remain in the final solution too. The observed number of factors (5) is less than the expected number of factors (6). This is mainly due to the merging tendency of the items of the IA dimension with the SP dimension.

- Out of 28 items of the initial solution, 23 items were retained in the final solution. About 82 per cent of the total items retained.

- The lowest value of the communality is 0.449 for the item "HR6" and highest value is 0.825 for the item "PM3".

- The five factors F1, F2, F3, F4, and F5 correspondingly extract 14.27, 14.10, 13.93, 11.8, and 9.20 per cent of the total variance, and the five factors together extracted 63.3 percent of the total variance.

- The naming of the five factors is as follows.

  F1 = Process Management (PM)
  F2 = Customer Focus (CF)
  F3 = Strategic Planning and Information Analysis (SPIA)
  F4 = Leadership (LD)
  F5 = Human Resource (HR)

- The reliability of the five factors F1, F2, F3, F4 and F5 is correspondingly turned out to be 0.856, 0.831, 0.855, 0.794 and 0.696 which are approximately equal or above the accepted level of 0.7.

<div align="center">Table 4.10: Rotated Component Matrix</div>

Item	F1	F2	F3	F4	F5	Communality
LD1				0.786		0.755
LD2				0.830		0.722
LD3				0.716		0.676
LD4				0.489		0.482
IA2			0.466			0.499
IA3			0.381			0.479
SP1			0.656			0.654
SP2			0.817			0.778
SP3			0.765			0.691
SP4			0.628			0.559
HR4					0.776	0.661
HR6					0.468	0.449
HR7					0.727	0.626
HR8					0.503	0.496
CF1		0.739				0.702
CF2		0.803				0.759
CF3		0.782				0.743
CF4		0.644				0.534
PM1	0.620					0.616
PM2	0.860					0.783
PM3	0.872					0.825
PM4	0.567					0.582
PM5	0.547					0.501
Contribution of factors	3.283	3.244	3.204	2.720	2.116	14.569
% of variance explained	14.276	14.105	13.932	11.826	9.202	63.342

4.6.4 Comparison of TQM Practices across Bank Type

Descriptive Statistics: The comparison of means of five constructs across bank type is presented in Table 4.11. Means are tilted towards positive direction, implying the positive attitude of the employees towards TQM practices. Means of JVB's are found to be greater than those of SOB and PCB implying that TQM practices in JVB are better than those in SOB and PCB. This finding supports with the study of Selvaraj (2009) who found that the foreign banks are found to be most successful in implementing TQM factors.

<div align="center">Table 4.11: Comparison of means</div>

Construct	SOB	JVB	PCB	Overall	Total Items
LD	14.300 (3.575)	15.600 (3.9)	14.835 (3.709)	14.828 (3.707)	4
SPIA	18.552 (3.71)	20.25 (4.05)	18.0294 (3.606)	18.625 (3.725)	5
HR	13.915 (3.479)	13.500 (3.375)	12.9216 (3.23)	13.328 (3.332)	4
CF	12.917 (3.229)	14.800 (3.700)	12.8846 (3.221)	13.269 (3.317)	4
PM	18.317 (3.663)	20.175 (4.035)	18.3462 (3.669)	18.696 (3.739)	5

Note: Figures in the parentheses are mean per item

Inferential statistics: In order to compare the TQM practices across bank type, one-way ANOVA test is carried out for each construct: LD, SPIA, HR, CF and PM. The main results of ANOVA tests are summarized in Table 4.12.

Table 4.12: ANOVA

Construct		Sum of Squares	df	Mean Square	F	Sig.
LD	Between Groups	40.571	2	20.286	2.328	0.100
	Within Groups	1742.394	200	8.712		
	Total	1782.966	202			
SPIA	Between Groups	142.118	2	71.059	5.652	0.004
	Within Groups	2476.757	197	12.572		
	Total	2618.875	199			
HR	Between Groups	38.38	2	19.19	2.275	0.105
	Within Groups	1669.949	198	8.434		
	Total	1708.328	200			
CF	Between Groups	116.573	2	58.286	5.882	0.003
	Within Groups	1991.599	201	9.908		
	Total	2108.172	203			
PM	Between Groups	108.86	2	54.43	4.001	0.020
	Within Groups	2734.297	201	13.603		
	Total	2843.157	203			

The main findings are as follows:

- There is no significant difference in the means of the construct "leadership" across the bank type.

- There is significant difference in the means of the construct "strategy planning and information analysis" across the bank type.

- There is no significant difference in the means of the construct "human resource" across the bank type.

- There is significant difference in the means of the construct "customer focus" across the bank type.

- There is significant difference in the means of the construct "process management" across the bank type.

Further post hoc analysis shows the following results

- There is significant difference in the means of SPIA between SOB and JVB so as between PCB and JVB.

- There is significant difference in the means of CF between SOB and JVB so as between PCB and JVB.

- There is significant difference in the means of PM between SOB and JVB so as between PCB and JVB

4.6.5   Measurement of Service Quality

In order to measure the construct "SQ", five items were administered over 206 employees. The reliability of these five items as measured by Cronbach's alpha is 0.808. Exploratory factor analysis when carried out upon these five items produces a single construct with KMO=0.768 and p value of Bartlet's test is 0.000. The summated scale is considered to be the measure of service quality. The mean values of five items and summated scale is tilted towards positive direction (Table 4.13).

Table 4.13: Mean Values of Five Items and Summated Scale

Tangible	Reliability	Responsiveness	Assurance	Empathy	Summated Scale
3.51	3.59	3.69	3.81	3.78	18.38

4.6.6   Statistical Modeling

In order to investigate the relationship between dependent variable - service quality - with independent variables - LD, SPIA, PM, CF, and HR – a correlation matrix is displayed in Table 4.14. All independent variables are positively correlated with the dependent variable as usual expected. To examine the linearity between each independent variable and dependent variable five scatter diagrams are presented in Annex 2 which clearly shows the linear relationship of each pair.

Table 4.14: Correlations Matrix

	SQ	LD	SPIA	HR	CF	PM
SQ	1					
LD	0.586	1				
SPIA	0.610	0.535	1			
HR	0.595	0.411	0.498	1		
CF	0.617	0.467	0.587	0.529	1	
PM	0.705	0.561	0.554	0.477	0.555	1

In order to establish a functional relationship between dependent variable and independent variables, multiple regressions is fitted. The fitted model explains around 64% of the total variation of dependent variable by the five independent variables, since $R^2 = 0.644$. Also, the fitted model is highly significant as shown by F-value = 70.397 and p - value = 0.000. The regression coefficients (both unstandardized and standardized) and their significance with collinearity diagnostic (VIF) are shown in Table 4.16. The main findings are summarized below.

- All regression coefficients are positive implying that each independent variable has positive impact on service quality.

- All coefficients are significant except SPIA at 5% level of significance.

- Standardized coefficient is highest for PM implying that it has highest influence on service quality as compared to other independent variables. Similarly, SPIA has the lowest influence on service quality as compared to other independent variables.

- The problem of multicollinearity does not seem to be serious since VIF values are less than 5.

Table 4.15: Regression Coefficients and Related Statistics

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	Sig.	VIF
(Constant)	1.651	0.933		0.078	
LD	0.212	0.065	0.181	0.001	1.65
SPIA	0.086	0.059	0.091	0.147	2.103
HR	0.267	0.062	0.229	0.000	1.539
CF	0.163	0.064	0.154	0.011	1.967
PM	0.335	0.055	0.363	0.000	1.889

Model Adequacy:

- The assumption of Homoscedasticity seems to be not violated as it can be seen from Figure 4.8 which shows no pattern when residuals are plotted against the predicted values.

- The histogram of residuals is displayed in Figure 4.7 which seems residuals are normally distributed. This is confirmed by Kolmogorov Smirinov test with p value=0.596

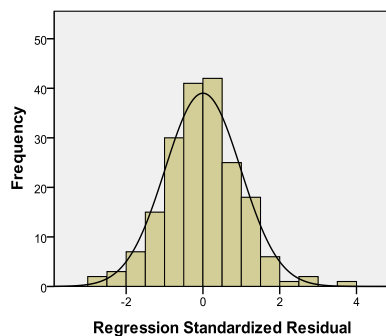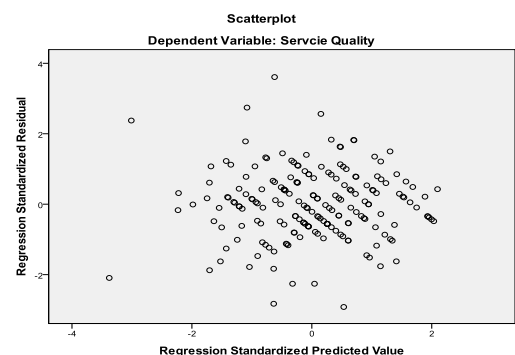**Figure 4.7: Histogram of Residuals**

Figure 4.8: Null plot

4.6.7 Organizational Performance

The assessment of organizational performance from employees' perspectives comprises three major areas productivity, profitability and customer satisfaction. Scale reliability of each of these scales is higher than 0.70 implying that items included in each scale is highly consistent. Exploratory factor analysis for four items of customer satisfaction produces a single construct with KMO = .773. Exploratory factor analysis for three items of profitability produces a single construct with KMO = .773.

Mean value of each scale is tilted toward positive direction, implying employee's positive attitude towards productivity, profitability and customer satisfaction.

Table 4.16: **Descriptive Statistic and Scale realibility of Organizational Performance**

Scale	# of items	Alpha	Mean	Std. Deviation	Min	Max
Productivity	2	0.726	7.650 (3.825)	1.61	2	10
Profitability	3	0.827	11.149 (3.716)	2.432	3	15
Customer satisfaction	4	0.794	14.294 (3.573)	2.874	6	20

Note: Figures in the parentheses are mean per item

4.6.8 Research Hypotheses Tests and Discussions

In this section the specified research hypotheses (See Section 2.7.1) are tested based upon the TQM model. This test will help in gaining a deeper understanding on how the extracted TQM constructs relate to each other in Nepali commercial banking sectors. Bivariate correlations were used to test the hypotheses. The results of hypotheses tests are summarized in Table 4.17. The discussions based on test of research hypotheses are presented below.

- The significant positive influence of leadership on customer focus of this study connects with the study of Lee-man (2002) which states that effect of leadership on quality outcome hinges greatly on the creation and sustaining of customer-focuses culture. Anderson et al., (1994) states that leader's responsibilities are to create and communicate a vision to move the firm toward continuous improvement via information analysis. Unfortunately, the exploratory factor analysis discarded the two items of construct "IA" and one item tangled with the construct "SP".

- The driving forces of TQM constitute both soft factors such as top management commitment, customer-oriented culture and employee empowerment and hard factors such as product/service design, information and analysis , process management (Lee-man, 2002). Hence, it has been observed in this analysis that until the organization is able to integrate Information analysis it cannot implement TQM. It has been discussed in many researches that integrating customers' voice in product and services has become one of the fundamental tasks of an organization. For integration we need to have a better information and analysis system in an organization. Bartley et al., (2007) added the relationship between customers focused culture and information. However, the finding of this study did not support it. This indicates that Nepali commercial banks are still in the verge of establishing the well communication strategy.

- People at all level in an organization should directly involve in knowing about customers' needs and expectations to enable a company sell more of their products and services efficiently (Valmohammadi & Beladpas, 2014). This signifies the need of human resource when an organization keep its eyes on customer. This proposition is supported by the finding. This shows that banking sector is able to identify the need of HR as competitive priorities.

- The major thing that today's customer look for the improvements in product/service offered to them. We can see the increasing number of frequencies of new product and services with new and innovative features. This is possible through quality function deployment. Many researchers thus focused on the process management. Boshoff (1997); Brown et al., (1996); Feinberg et al., (1990) and Silvestro (1998) focused on more conducive of customer focus on process management. This proposition is well supported by the finding of this study.

- Daft & Lengel (1986) and Floyd & Wooldridge (1990) postulated that capturing update information and analysis is a prerequisite of strategic planning. This proposition is not supported in this study. This has proved that there have been still many opportunities for the improvement regarding

communication and strategic planning in commercial banking sectors of Nepal.

<p style="text-align:center">Table 4.17: Results of Research Hypotheses</p>

Number	Research Hypothesis	Results
1	Leadership has positive influence on customer focus	Supported for SOB,JVB and PCB
2	Leadership has positive influence on Information and Analysis	Not supported
3	Leadership has positive influence on strategic planning	Supported for SOB, JVB, and PCB
4	Leadership has positive influence on Human Resource.	Supported for SOB and PCB but not for JVB
5	Customer focus has positive influence on information and analysis	Not supported
6	Customer focus has positive influence on Human resource	Supported for SOB, JVB, and PCB
7	Customer focus has positive influence on Process management	Supported for SOB, JVB, and PCB
8	Information and analysis has postive influence on strategic planning	Not supported
9	Information and analysis has positive influence on service quality	Not supported
10	Strategic planning has positive influence on Human resource	Supported for SOB, JVB, and PCB
11	Strategic planning has positive influence on process management	Supported for SOB, JVB, and PCB
12	Human resources has positive influence on service quality	Supported for JVB and PCB but not for SOB
13	Process management has positive influence on service quality	Supported for SOB, JVB, and PCB

4.7 Customer Survey: Results

With a view to measure the six constructs (see below), a questionnaire containing 30 Likert items – each is in 5-point scale - is constructed and data is collected via questionnaires with face-to-face to interview with 202 customers of the 17 CBs. The results regarding the five components of service quality and customer satisfaction is discussed in this section. Socio-demographic characteristic of respondents, descriptive characteristics of items and constructs, correlation analysis, factor analysis, scale reliability analysis are presented, followed by multiple regression model for appropriate variables.

Construct	# of Items	Remarks*
Tangibles (TAN)	4	Q1 to Q4
Reliability (REL)	4	Q5 to Q8
Empathy (EMP)	5	Q9 to Q13
Assurance (ASN)	4	Q14 to Q17
Responsiveness (RES)	3	Q18 to Q20
Customer satisfaction (CST)	10	Q21 to Q30

Note: *Refer to Annex 3

4.7.1 Respondent Profile

The profile of the 202 respondents (customers) is summarized below which indicates that the coverage of sample respondents is broad in terms of socio-demographic variables.

- Composition of respondents by sex is 68.7% male and 31.33% female.

- Composition of respondents by age is 51.8% in the age group 20-29 years, 22.1% in the 30-39 years, 15.4% in the 40-49 years, and 10.7% in the 50+ group.

- Composition of respondents by marital status is 53.6% married and 46.4% unmarried.

- Composition of respondents by level of education is 6.0% school level, 13.6% intermediate level, 43.2% bachelor level, 35.2% master level, and 2.0% higher than master level.

- Composition of respondents by profession is 48.4% service, 6.3% business, 8.9% social work, 19.8% students, 2.1 housewife and 14.7% retired.

- Composition of respondents by permanent address is 36.5% Kathmandu valley, 63.5% out of Kathmandu valley.

4.7.2 Scales Reliability and Validity

The reliability of 4 items of each TAN, REL, and RES, 5 items of EMP, 3 items of ASN and 10 items of CST as measured by Cronbach alpha is presented in Table 4.18. The alpha values are above the acceptance level (> 0.7). Exploratory factor analysis on each group of these items has produced each group of items as single construct with sufficiently high value of KMO (Table 4.18). Consequently, the summated six groups of items separately constitute six scales which are correspondingly taken as measures of six constructs: TAN, REL, RES, EMP, ASN, and CST.

Table 4.18: Scale Reliability and Validity of Six Constructs

Construct	Alpha	Remarks
TAN	0.731	FA shows a single construct with KMO = 0.746 and eigen value (>1)=2.218
REL	0.797	FA shows a single construct with KMO = 0.735 and eigen value (>1)=2.512
EMP	0.853	FA shows a single construct with KMO = 0.844 and eigen value (>1)=3.161
ASN	0.752	FA shows a single construct with KMO = 0.752 and eigen value (>1)=2.304
RES	0.772	FA shows a single construct with KMO = 0.682 and eigen value (>1)=2.063
CST	0.908	FA shows a single construct with KMO = 0.907 and eigen value (>1)=5.528

4.7.3 Descriptive Statistics of Constructs

The mean value of the six constructs is summarized in Table 4.19 which shows that the mean value of each dimension is in positive direction, implying the positive attitude and of employees regarding the each of the five components of service quality and customer satisfaction.

Table 4.19: Descriptive Statistics of Six Constructs

Construct	Mean	Std. Deviation	Min	Max
TAN	15.098 (3.775)	2.56	8	20
REA	14.313 (3.578)	2.984	4	20
EMP	15.835 (3.167)	3.924	5	25
ASN	13.73 (3.433)	2.893	7	20
RES	9.801 (3.267)	2.304	4	15
CST	31.274 (3.127)	6.421	10	45

The correlation coefficient of each pair of constructs is displayed in Table 4.20 which shows that every pair of construct is positively and significantly correlated.

Table 4.20: Correlation Matrix

	CST	TAN	REA	EMP	ASN	RES
CST	1					
TAN	0.577	1				
REA	0.538	0.443	1			
EMP	0.652	0.509	0.642	1		
ASN	0.643	0.523	0.527	0.647	1	
RES	0.705	0.519	0.616	0.698	0.719	1

Note: Correlations are highly significant

4.8 Multiple Regression Model

In order to investigate the functional relationship between dependent variable - CST - with independent variables - TAN, REA, EMP, ASN, and RES – a correlation matrix is examined (see Table 4.19) and scatter diagram of dependent variable with each independent variable is presented in Annex-4 where each diagram sows liner trend.

Based on the above results, it is decided to fit a multiple regression model. The fitted model explained around 62% of the total variation of dependent variable by the five independent variables, since $R^2 = 0.619$. Also, the fitted model is highly significant as shown by F-value = 57.17 and p - value = 0.000 of ANOVA table. The regression coefficients (both unstandardized and standardized) and their significance with collinearity diagnostic (VIF) are shown in Table 4.21. The main findings are summarized below.

- All regression coefficients are positive implying that each independent variable has positive impact on customer satisfaction.

- All coefficients are statistically significant except REA at 5% level of significance.

- Standardized coefficient is highest for RES implying that it has highest influence on customer satisfaction as compared to other independent variables. Similarly, REA has the lowest influence on customer satisfaction as compared to other independent variables.

Table 4.21: Regression Coefficients and Related Statistics

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.	VIF
	B	Std. Error			
(Constant)	2.960	2.021		0.145	
TAN	0.422	0.148	0.167	0.005	1.585
REA	0.246	0.152	0.109	0.107	2.099
EMP	0.350	0.125	0.213	0.006	2.683
ASN	0.484	0.163	0.218	0.003	2.487
RES	0.645	0.229	0.232	0.005	3.130

Model Adequacy

- The problem of multicollinearity does not seem to be serious since VIF values in Table 4.20 are less than 5.

- The assumption of homoscedasticity seems to be not violated as it can be seen from Figure 4.10 which shows no pattern when residuals are plotted against the predicted values.

- The histogram of residuals is displayed in Figure 4.9 which seems residuals are normally distributed. This is confirmed by Kolmogorov Smirinov test with p- value = 0.353

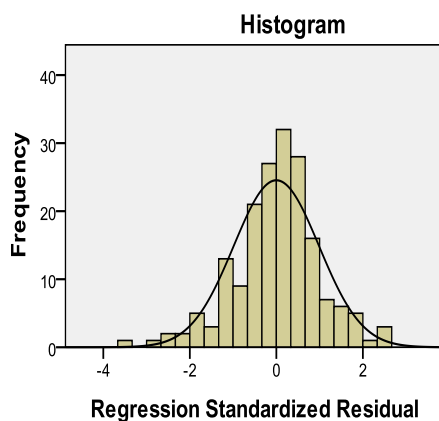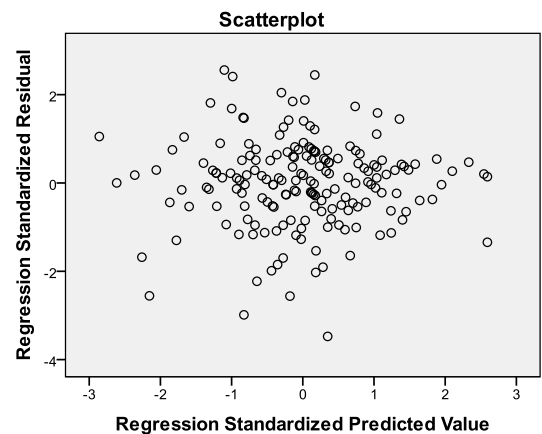**Figure 4.9: Histogram of Residuals**

Figure 4.10: Null plot

Discussion

The result shows that RES is the most influencing factor on customer satisfaction according to customers of Kathmandu. This shows that bank employees are assisting and providing prompt services to customers.

The demonstration of moderate degree of influence of empathy on customer satisfaction does not support with the study conducted by (Luo, 1997; Ramasamy et al., 2006; Theingi & Phungphol, 2008) which found where empathy factor plays major influencing role on customer satisfaction from East Asian countries.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

This chapter deals with the conclusions based on the results and discussion. It also includes the relevance and managerial implications and suggestion regarding future research directions as part of recommendation.

5.1 Conclusion

The TQM model specifies the relationships among five TQM constructs and service quality. The approach of this empirical research confirms the validity of the constructs and testing the proposed TQM model. The results of the correlation analysis support to the theoretical relationships among the TQM constructs. The results of the multiple regression analysis show impact in two ways (1) the impact of TQM constructs on service quality of the banks (2) the impact of service quality dimensions on customer satisfaction.

It is evident that the prevalence of the process management is a pivotal factor which determines the ultimate success of TQM. This factor plays important role in transformation model of an organization. The next influential factor on service quality is human resource. This shows that banks have focused on the training and development of employees. Consequently, there have been the influences of leadership, customer focus, strategy and planning on service quality in sequential order. The merging of the items of information analysis with strategic planning has shown some new aspects in TQM theory in banking sector.

This study has also revealed the fact that among five dimensions of service quality responsiveness factor has much impact on customer satisfaction. This concludes that Nepalese customers believe that bank employees provide prompt service to them willingly.

This study contributes to TQM theory building by identifying the TQM constructs in case of commercial banking sectors in Nepal. The survey instruments and measurement model are very comprehensive. The study includes many carefully executed steps to ensure construct validity of the survey instruments. The current methodology and findings will be a benchmark for future research in linking TQM practices and organizational performances even in rigorous way.

In conclusion, the present study is successful in providing insights and contributions for both bank managers and researchers. For bank managers the study provides the concrete empirical evidences in enhancing organizational performance through TQM journey. For researchers this study has shown how to link a philosophical aspect of TQM to empirical testing in an organization. Researchers can make use of proposed TQM model of this study for developing new theories by exploring the new construct in a competitive business world.

5.2 Managerial Implications

5.2.1 Managerial Implications Based on Employee Survey

As this study was based on the empirical and quantitative evaluation, managers would have opportunity in practical implication in identifying the determinants for quality improvement in an organization in service setting particularly in a financial sector. Process management has been found to be much influential factor in affecting the service quality according to employees of the banks in Nepal. In this context managers can improve the process management for quality initiatives. This could be more practicable to banking sectors as customers are being processed during the service delivery. It is evident that in transformation system if we could intervene the process part for betterment the expected outcomes will appear in the reality.

It has been found that human resource focus as the next influencing factor on service quality while leadership, customer focus and strategic planning remain behind as influencing factors. Managers can be benefitted in knowing this reality in banking sectors which normally does not happen in service settings. This definitely helps manager in formulating plans and policies for quality initiatives in banking sectors.

Out of six TQM constructs one construct (namely information and analysis) did not load in the factor analysis separately. This is what mangers should know the existing status of Nepali commercial banking sectors. It is hard to believe that TQM practices without proper information analysis. However, we should agree on the employees' perspectives that organizations in Nepalese context have not focused in information analysis. Now what can we learn from this finding is that mangers should focus on information analysis part as well for bringing in quality initiatives in their organization to keep at par with global operations of similar nature of organizations to

be competitive enough. This definitely seeks the communication among various functional departments within a bank. This will definitely complement to process management. This opens up the opportunity for managers to design the organization more of organic rather than mechanistic.

5.2.2 Managerial Implications Based on Customer Survey

This study also incorporates the views of the customers of banks regarding the service quality and customer satisfaction. According to customer survey it is found that there has been positive attitude of customers towards service quality dimensions and customer satisfaction. This is good news to managers of banking sectors. However, they should know the much influencing dimension on customer satisfaction. It is found that responsiveness is the most influencing factor on customer satisfaction. This implies that bank employees are able to provide prompt services to customers willingly.

The next influencing factor is assurance. This indicates that employees are able to instill confidence in customers making them feel safe in business transaction. It can be said that bank employees are courteous and are knowledgeable. Other service quality dimensions empathy, tangibles, and reliability subsequently remain behind as influencing factors on customer satisfaction. Now what mangers can borrow from this finding is that the current status regarding the service quality dimensions should not be borrowed forever. There should be continuous tracking of the customers' perceptions and integrating the findings for the quality services to customers.

5.2.3 Managerial Implications Based on Relative Efficiency

The managerial implications of study based on relative efficiency can be categorized into three areas. The first one implies in the product and service design in the competitive environment. The second one focuses for the internal improvements within a bank while the third one strikes for the regulatory body of financial institutions.

Managers can adopt the reverse engineering tool for product and service design looking into the competitors in the efficient frontier. This will ultimately create a sound environment to customers in the financial sectors. Eventually, there will be a stable economic development in the country.

Managers can use the technique of evaluating relative efficiency to track the relative efficiencies of branches within a bank such that they can apply the appropriate strategy to make inefficient branch efficient. Moreover, mangers can actually identify the variable to be intervened in order to bring the inefficient branch as efficient.

Regulatory body and policy makers can identify the efficient banks in order to set benchmark for other inefficient banks. This will ease the regulatory body create plan and policies guided by facts and figures for achieving the targeted results.

5.3 Limitation and Future Research

There are a number of limitations in this study which eventually can consider the opportunities for future research. The present study is based on both primary and secondary data. For primary data both employee survey and customer survey are carried out. Both surveys are being carried out only in Kathmandu valley. Hence, this limitation opens the avenue for the future researchers to see the impact of certain environmental variables on TQM practices, service quality and organizational performance. The generalizability of the results limits to only Kathmandu valley. This study has not separated the population sample from the cultural background. The cultural background of the respondents may have a different view on the TQM practices of banks, different expectations and perceptions towards customer services offered by banks. For example the ambience of the banks affect too much to both employees and customers of Kathmandu valley while it might have minimal impact in case of banks in the rural area. Likewise people living in remote area may not be familiarized with ATM machine.

It has been realized that time factor plays the significant role in the perceptions of employees and customers of an organization. Because time factor will have impact on the internal and external business environment in terms of the financial, technical , policy , and human resources over several years before achieving any results. Hence, similar study can be conducted as longitudinal study taking into consideration of pre and post TQM implementation phase in banking sectors. This will be very much fruitful in testing cause effect relationships in a better way and effect of time dimension on TQM practices.

The attitude of people also gets influenced by the work design in an organization .So; the future research can incorporate the work design variable as well. Similarly, the future research could also consider the organizational background in terms of their development as an intermediation which possibly impacts much on the TQM implementation in an organization.

Another important limitation of this study is the size of the bank on the basis of market value of asset size as this study has categorized the banks on the basis of ownerships. The size of the banks is dynamic. Usually larger bank will have more resources available for implementing TQM. Hence, future research can be conducted taking into consideration of dynamism of market size of banks which would actually evaluate banking industry in real sense.

CHAPTER 6: SUMMARY

This study begins to provide answers to three questions: How is the pattern of relative efficiency of commercial banks under study? What are views of employees regarding TQM practices of commercial banks?, and whether customers are satisfied or not with services of banks?

To get the answers the study design used both primary source of information and secondary source of information. For obtaining the answer of the first question regarding relative efficiency of commercial banks, 17 commercial banks (which were under operations for at least five years by 2010) were considered. For measuring relative efficiency DEA was used under two approaches: Intermediation approach and operation approach. The findings of this analysis strongly suggest there are important implications for bank managers and bank regulatory to take an action for operating the banks in efficient frontier in the competitive environment and form a benchmarking for the improvement of banking sectors.

For obtaining the answer of second question regarding the employees' perception towards TQM practices, service quality and organizational performance 206 employees from all categories of banks SOB, JVB, and PCB, were included in the employee survey. The survey instrument was developed by reviewing the previous empirical researches. The instrument comprises the six constructs of TQM: Customer focus, strategy and planning, human resource focus, information and analysis, leadership and process management along with service quality items and organizational performance: productivity, profitability and customer satisfaction items. The Cronbach alpha was used for testing the reliability and exploratory factor analysis was used to ensure the construct validity. Multiple regression modeling was used to see impact of the extracted constructs: Customer focus, process management, strategy planning and information analysis, leadership, and human resource focus on service quality. It is good to observe that the fitted model become as the best predictive function for explaining the variance by 64.0% in service quality. The model adequacy tests also prove the fitted model as the best predictive function.

To answer the third question regarding customers' points of view towards service quality and customer satisfaction 202 customers from all category of banks have been included in the survey. The survey instrument consists the service quality dimensions:

Tangibles, Reliability, Responsiveness, Empathy and Assurance. It also includes items related to customer satisfaction. The Cronbach alpha was also used to check the internal consistency of items of a factor, and found reliable. Multiple linear regression modeling was used to establish the relationship between service quality dimensions and customer satisfaction. The process management construct was found to be much influencing on service quality. The finding of the study resembles the attitude of common Nepali person. It has been found the 62.0% of the variation in customer satisfaction can be explained by variation in service quality dimensions taken together.

The models developed in this study will serve as a threshold to carry on future research to investigate the impact of TQM practices in financial institutions. Future research should explore the impact of TQM on organizational performances taking into time factor, cultural factor, work design factor, and most importantly organizational development factor. Moreover, the developed TQMB model will help bank managers and practitioners in their daily operation as the model clearly specified the impact of TQM practices on service quality and impact of service quality on customer satisfaction.

REFERENCES

Abdullah, F., Suhaimi, R., Saban, G., & Hamali, J. (2011). Bank Service Quality (BSQ) Index:A Indicator of Service Prformance. *International Journal of Quality and Reliability Management , 28* (5), 542-555.

Ahire, S. L., Golhar, D. Y., & Waller, M. A. (1996). Development and validation of TQM implementation constructs. *Decision Sciences , 27* (1), 23-56.

Al-Hawary, S. I., Alhamali, R. M., & Alghanim, S. A. (2011). Banking Service Quality Provided by Commercial Banks and Customer Satisfaction. *American Jornal of Scientific Research* (27), 68-83.

Alrgaibat, G. A., & Alkhazali, A. s. (2011). Comprehensive quality management in the jordamian commercial banks. *European Journal of Economics, Finance and Administrative Sciences* (40), 16-27.

Al-Shobaki, S. D., Fouad, R. H., & Al-Bashir, A. (2010). The implementation of total quality management (TQM)for the banking sector in Jordan. *Jordan Journal of Mechanical and Industrial Engineering , 4* (2), 304-313.

Anderson, J. C., Rungtusanatham, M., & Schroeder, R. G. (1994). A theory of quality management underlying the Deming management method. *Academy of management review , 19* (3), 472-509.

Anderson, J. C., Rungtusanatham, M., & Schroeder, R. G. (1994). A Theory of Quality Management Underlying The Deming Management Method. *Academy of Management Review , 19* (3), 472-509.

Anderson, J. C., Rungtusanatham, M., Schroeder, R. G., & Devaraj, S. (1995). A path analytic model of a theory of quality management underlying the Deming Management Method:preliminary empirical findings. *Decision Sciences , 26* (5), 637-658.

Azaranga, M. (1998). An empirical investigation of the relationship between quality improvement techniques and performance- a Mexican case. *Journal of Quality Management , 3* (2), 265-292.

Badri, M. A., & Davis, D. (1995). A study of measuring the critical factors of quality management. *International Journal of Quality and Reliability Management , 12* (2), 36-53.

Bajpai, N. (2012). *Business Statistics.* Gwalior, India: Pearson Education.

Baker, J., Berry, L. L., & Parasuraman, A. (1988). The marketing impact of branch facility design. *Journal of Retail Banking* (10), 33-42.

(July 2010). *Banking and Financial Statistics.* Nepal Rastra Bank .

Baral, K. J. (2005). Health-check up of commercial banks in the framework of CAMEL:A case study of joint venture banks in Nepal. *The Journal of Nepalese Business Studies , 2* (1), 41-55.

Bartley, B., Gomibuchi, S., & Mann, R. (2007). Best practices in achieveing a customer-focused culture. *Benchmarking: An International Journal , 14* (4), 482-496.

Baruwa, B. (2011). Prospect of Implementing Total Quality Management Appoach in Commercial Banks of Bangaladesh. *East West Journal of Business and Social Studies , 2.*

Beaumont, N. B., Sohal, A. S., & Terziovski, M. (1997). Comaring quality management practices in the Australian service and manufacturing industries. *International Journal of Quality and Reliability Management , 14* (8), 814-833.

Benson, P. G., Saraph, J. V., & Schroder, R. G. (1991). The effects of organizational context on quality management:an empirical investigation. *Management Science , 37* (9), 1107-1124.

Berry, L. L., & Clark, T. (1986, Oct-Dec). Four ways to make services more tangible. *Business* , 53-54.

Besterfiled, D. H., Besterfield, C., Besterfield, G. H., Besterfield, M., Urdhwareshe, H., & Urdhwareshe, R. (2011). *Total Quality Management.* New Delhi: Dorling Kindersley.

Bitner, M. J. (1992). Servicescapes:the impact of physical surroundings on customers and employees. *Journal of Marketing* (56), 57-71.

Black, G. A., & Porter, L. J. (1996). Indentifcation of the critical factors of TQM. *Decision Sciences , 27* (1), 1-21.

Black, S. A., & Porter, L. J. (1996). Identification of critical factors of TQM. *Decision Sciences , 27* (1), 1-21.

Bohoris, G. A. (1995). A comparative assessment of some major quality awards. *International Journal of Quality and Reliability Management , 12* (9), 30-43.

Bolton, R. N., & Drew, J. H. (1991). A Multistage Model of Customers' Assesments of Service Quality and value. *17* (4).

Boshoff, C. R. (1997). An experimental study of service recovery options. *International Journal of Service Industry Management , 8* (2), 110-130.

Bou-Llusar, J. C., Escrig-Tena, A. B., Roca-puig, V., & Beltran, M. I. (2008). An empirical assessment of the EFQM excellence model:Evaluation as a TQM framework relative to MBNQA model. *Journal of Operations Management .*

Brah, S. A., Wong, J. L., & Rao, B. M. (2000). TQM and business performance in the servcie sector: a Singapore study. *International Journal of Operations and Production Management , 20* (11), 1293-1312.

Brah, S. A., Wong, J. L., & Rao, B. M. (2000). TQM and business performance in the service sector:a Singapore study. *International Journal of Operations and Production Management , 20* (11), 1293-1312.

Brown, S. W., Cowles, D. L., & Tuten, T. (1996). Service recovery, its value and limitations as a retail strategy. *International Journal of Service Industry Management , 7* (5), 32-46.

Brun, A. (2010). Critical success fators of six sigma implementation in Italian companies. *International Journal of Production Economics* , 1-7.

chansarn, S. (2008). The Relatve Efficiecny of Commercial Banks in Thailand:DEA Approach. *International Research Journal of Finance and Economics* , 53-67.

Chen, W. H. (1998). Benchmarking quality goals in service systems. *The journal of service marketing , 12* (2), 113-128.

Cheng, T. E., & Ngai, E. W. (1994). Management support systems for service quality management: a research direction. *International Journal of Quality and Reliability Management , 11* (8), 44-56.

Choi, T. Y., & Eboch, K. (1988). The TQM paradox: Relations among TQM practices, plant performance and customer satisfaction. *Journal of Operations Management , 17* (1), 59-75.

Choi, T. Y., & Ehoch, K. (1989). The TQM paradox: Relations among TQM practices,plant performance,and customer satisfaction. *Journal of Operations Management , 17*, 59-75.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale,NJ: Lawrence Erlabaum Associates.

Cohen, S. G., & Ledford, G. E. (1994). The effectiveness of self managing teams- a quasi experiment. *Human Relations , 47* (1), 13-43.

Comrey, A. (1973). *A first course in factor analysis.* New York: Academic press.

Corbett, L. M., Adam, E. E., Harrison, N. J., Lee, T. S., Rho, B. H., & Samson, D. (1998). A study of quality management practices and performance in Asia and the South Pacific. *International Journal of Production Research , 36* (9), 2597-2607.

Crosby, P. B. (1982). *Quality is Free.* New York, USA: The new American Library Inc.

Curkovic, S., Melnyk, S., Calantone, R., & Handfield, R. (2000). Validating the Malcolm Baldrige National Quality Award Framework through structural equation modelling. *International Journal of Production Research , 38* (4), 765-791.

Curkovic, S., Melnyk, S., Calantone, R., & Handfiled, R. (2000). Validating the Malcolm Baldrige National Quality Award Framework through stuctural equation modelling. *International Journal of Production Research , 38* (4), 765-791.

Daft, R. L., & Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. *Management Science , 32* (5), 554-571.

Dahlgaard, J. j., Kristensen, k., & Kanji, G. K. (2007). *Fundamentals of Total Quality Management.* Taylor & Francis e- library .

Deming, W. E. (1982). *Quality,Productivity and Competitive position.* USA: MIT.

Demirbag, M., & Tatoglu, E. (2006). An analysis of the relationship between TQM implementation and organizational performance: Evidence from Turkish SMEs. *Journal of Manufacturing Technology Management , 17* (6), 829-847.

Dilber, M., Bayyurt, N., Zaim, S., & Tarim, M. (2005). Critical factors of total quality management and its effect on performance in health care industry:A Turkish experience. *Problems and Perspectives in Management , 4*, 220-235.

Dotchin, J. A., & Oakland, J. S. (1994). Total quality management in services-part 3: distinguishing perceptions of service quality. *International Journal of Quality and Reliability Management , 11* (4), 6-28.

Feinberg, R. A., Widdows, R., Hirsch-Wyncott, M., & Trappey, C. (1990). Myth and reality in customer service: good and bad service sometimes leads to repurchase. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior , 3*, 112-14.

Floyd, S. W., & Wooldridge, B. (1990). Path analysis of the relationsip between competitive strategy,information technology and financial performance. *Journal of Management Information System , 7* (1), 47-64.

Flyyn, B. B., Schroder, R. G., & Sakakibara, S. (1994). A framework for quality management research and an associated measurement instrument. *Journal of operations management , 11*, 339-366.

Fotopoulos, C. V., & Psomas, E. L. (2010). The structural relationships between TQM factors and organizational performance. *The TQM Journal , 22* (5), 539-552.

Fotopoulus, C. B., & Posmas, E. L. (2009). The impact of soft and hard TQM elements on quality management results. *International Journal of Quality and Reliability Management , 26* (2), 150-163.

Franklin, C. J. (1997). Industry output and employment projection to 2006. *Monthly Labor Review , 120* (11), 39.

Freixas, X., & Rochet, J. (1997). *Microeconomics of Banking.* London: Cambridge MA.

Gaire, H. N. (2012). Real interest rate and saving behaviour in Nepal. *Banking Journal , 2* (1), 16-34.

Garvin, D. (1991). How the Baldrige Award really works. *Harvard Business Review , 69* (6), 80-95.

Gharakhani, D., Rahmati, H., Farrokhi, M. R., & Farahmandian, A. (2013). Total quality management and organizational performance. *American Journal of Industrial Engineering , 1* (3), 46-50.

Ghobadian, A. S., & Jones, M. (1994). Service quality:concepts and models. *International journal of Quality and Reliability Management , 11* (9), 43-66.

Ghobadian, A., & Woo, H. S. (1996). Charecteristics, benefits and shortcomings of four major quality awards. *International journal of Quality and Reliability Management , 13* (2), 10-44.

Ghost, F. H., & Gnanadhas, M. E. (2011). Impcat of Service Quality in Commercial Banks on the Customers Satisfaction: An Empirical Study. *International Journal of Multidisciplinary Research , 1* (6), 19-32.

Gotlieb, G., Grewal, D., & Brown, S. W. (1994). Consumer Satisfaction and percieved quality : Complementary or divergent constructs ? *Journal of Applied Psychology , 79* (6), 875-85.

Griffin, A. (1997). PDMA Research on New Product Development Practices:Updating Trends and Benchmarking Best Practices. *Journal of Productivity and Innovation Management* (14), 429-458.

Gronroos, C., & Gummerus, J. (2014). The service revolution and its marketing implications:service logic VS service-dominant logic. *Managing Service Quality , 24* (3), 206-229.

Harry, N. B., & Deborah, A. (2012). Analyzing Likert Data. *Journal of Extension , 50* (2).

Hart, C. L., Heskett, J. L., & Sasser, W. E. (1990, July-August). The profitable art of service recovery. *Harvard Business Review,* , 148-156.

Hartley, J., & Warr, P. (2002). Psychology at work. In J. Hartley, & P. Warr, *Organizational Change and Development* (pp. 399-425). New York: Penguin press.

Hartline, M. D., & Ferrel, O. C. (1993). *Service quality implementation the effects of organizational socialization and managerial actions on customer-contact employee behaviors.* MSI.

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research , 77* (1), 81-112.

Hayes, B. E. (1998). *Measuring Customer satisfaction: Survey design, use and statistical analyis methods.* ASQ Quality press.

Hendricks, K. B., & Singhal, V. R. (1997). Does implementng an effective TQM program actually improve operating perfromance? Empirical evidence from firms that have won quality awards. *Management Science , 43* (9), 1258.

Hua, H., Chin, K. S., Sun, H., & Xu, Y. (2000). An empirical study on quality management practices in Shanghai manufacturing industries. *Total Quality Management , 4* (1), 5-22.

Huq, Z., & Stolen, J. D. (1998). Total quality management constrasts in manufacturing and service industries. *International Journal of Quality & Reliability Management , 15* (2), 138-161.

Iveta, G. (2012). Human resources key performance indicators. *Journal of Competitiveness , 4* (1), 117-128.

Johnston, R. (2005). Service operations management:retrns to tools. *International Journal of Operations & Production Management , 25* (12), 1278-1297.

Johnston, R. (1995). The determinants of service quality: satisfiers and dissatisfiers. *International Journal of Service Industries Management , 6* (5), 53-71.

Juran, J. M., & Gryna, F. M. (1980). *Quality Planning & Analysis-From product development through use.* New York, USA: McGraw-Hill.

Kosmidou, K. (2008). The determinants of banks'profits in Greece during the period of EU financial integration. *Managerial Finance , 34* (3), 146-159.

Kothari, C. R. (2000). *Research Methodology Methods and Techniques.* New Delhi: New Age International (P) Limited.

Lakhe, R. R., & Mohanty, R. P. (1995). Understanding TQM in service systems. *International Journal of Quality and Reliability Management , 12* (9), 139-153.

Lau, M. M., Cheung, R., Lam, A. Y., & Chu, Y. T. (2013). Measuring Service Quality in the Banking Industry: A Hong Kong Based Study. *Contemporary Management Research , 9* (3), 263-282.

Ledolter, J., & Burril, C. W. (1999). *Statistical quality control strategies and tools for continual improvement.* New York: Wiley.

Lee-man, C. (2002, January). Development and Validation of a Total-Quality Management-for-Service (TQMS) Model. The Chinese University of Hong Kong.

Levine, R. (1997). Financial Development and Economic Growth:Views and Agenda. *Journal of Economic Literature , 35* (2), 688-726.

Li, E. Y., Zhao, X., & Lee, T.-S. (2001). Quality Management Initiatives in Hong Kong's Banking Industry: A longitudinal study. *Total Quality Management , 12* (4), 451-467.

Luo, Y. (1997). Guanxi: principles, philosophies, and implications. *Human Systems Management , 16* (1), 43-51.

Masood, O., & Ashraf, M. (2102). Bank specific and macroeconomic profitability determinants of islamic banks:the case of diffrent countries. *Qualitative Research in Financial Markets , 4* (3), 255-268.

McGovern, P., Hill, S., Mills, C., & White, M. (2007). *Market, Class and Employment.* Oxford: Oxford University Press.

Metters, R., Metters, K. K., Pullman, M., & walton, s. (2007). *Successful Service Operations management , 2e.* New Delhi: South-Western.

Metters, R., Metters, K. K., Pullman, M., & Walton, S. (2007). *Successful Service Operations Management* (second ed.). Thomson South-Western.

Miller, W. J. (1996). A Working Definition for Total Quality Management (TQM) Researcher. *Journal of Quality Managemnt , 1* (2), 149-159.

Mishkin, F. (2004). *The economics of Money,Banking and Financial Markets* (Seventh ed.). Boston: Addision Wesley series.

Mohammad, A. A., & Alhamadani, S. Y. (2011). Service Quality Perspectives and Customer Satisfaction in Commercial Banks working in Jordan. *Middle Eastern Finance nd Economics* (14), 60-72.

Montes, F., Jover, A. V., & Fernandez, L. (2003). Fatctors affecting the relationship between total quality management. *International Journal of Quality and Relibaility Management , 20* (2), 189-209.

Motwani, J. G., Mahmoud, E., & Rice, G. (1994). Quality practices of Indian organizations:an empirical analysis. *International Journal of Quality and Reliability Management , 11* (1), 38-52.

Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behaviours , 14*, 224-227.

Munizu, M. (2013). The impact of total quality management practies towards competitive advantage and organizational performance:Case of fishery industry in south sulawesi rovince of Indonesia. *Pakistan Journal of Commerce and Social Sciences , 7* (1), 184-197.

Naagarazan, R., & Arivalagar, A. (2005). *Total Quality Management.* New Delhi: New Age International (P) Limited .

Nabitz, U., Severens, P., van den Brink, W., & Jansen, P. (2001). Improving the EFQM Model:an empirical study on model developemnt and theory building using concet mapping. *Total Quality Management , 12* (1), 69-81.

Naeem, H., Saif, M. I., & Qasim, S. (2008). Total quality management-a recommended strategy for the pakistani banking sector. *International Business & Economics Research Journal , 7* (11), 49-54.

Nair, A. (2006). Meta Analysis of relationship between quality management practices and firms performance. *Journal of Operaions Management , 24*, 948-975.

Nazarko, L. (2004). *Managing a quality service.* Oxford:Heinemann.

Nepal Rastra Bank STRATEGIC PLAN [2012-2016]. Bauwatar , Kathmandu: Corporate Planning Department Nepal Rastra Bank .

Ngware, M. W., Wamukuru, D. K., & Odebero, S. O. (2006). Total quality management in secondary schools in Kenya:extent of practice. *Quality Assurance in Education , 14* (4), 339-362.

Nunnally, J. C. (1978). *Psychometric Theory.* New York: McGraw-Hill.

Omar, H. A., & Mutairi, A. A. (2008). Bank specific determinants of profitability:the case of kuwait. *Journal of Economic and Administrative Science , 24* (2), 20-34.

Ovretveit, J. (1993). *Measuring service quality practical guidelines.* Technical communications.

Parasuraman, A., Zeithamal, V., & Berry, L. (1988). SERVQUAL:a multiple item scale for measuring consumer perceptions of service quality. *Journal Of Retailing , 64* (1), 12-40.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing , 49*, 41-50.

Pattanayak, D., & Maddulety, K. (n.d.). Effect of TQM on customer satisfaction in Indian Banking Industry: A Literature Review. *European Journal of Business and Management* .

Powel, T. C. (1995). Total quality management as competitive advantage:a review and empirical study. *Strategic Management journal , 16* (1), 15-37.

Quazi, H. A., Jemangin, J., Low, W. K., & Chin, L. K. (1998). Critical factor in quality management and guidelines for self-assessment:the case of Singapore. *Total Quality Management , 9* (1), 35-55.

Rahman, S.-u. (2001). A comparative study of TQM practice and organiational performance with and without ISO 9000 certification. *International Journal of Quaity & Reliability Management , 18* (1), 35-49.

Ramanathan, R. (2003). *An Introduction to Data Envelopment Analysis: A Tool for Performance Analysis.* Sage.

Ramasamy, B., Goh, K. W., & Yeung, M. C. (2006). Is guanxi (relationship) a bridge to knowledge transfer? *Journal of Business Research , 59* (1), 130-139.

Ramsay, H., Scholarios, D., & Harley, B. (2000). Employees and high performance work systems : testing inside the black box. *British Journal of Industrial Relations , 38* (4), 501-531.

Rao, S. S., Solis, L. E., & Raghunathan, T. S. (1997). Relative impact of performance and important ratings on measurement of service quality. *Journal of Professional Services Marketing , 15* (2), 69-86.

Rapoport, A. (1982). *The meaning of the built environment.* CA: Sage publication.

Reed, R., Lemak, D. J., & Mero, N. P. (2000). Total quality management and sustainable competitive advantage. *Journal of Quality Management , 5* (1), 5-26.

Reeves, C. A., & Bendar, D. A. (1994). Defining Quality: alternatives and implications. *Academy of Management Review , 19* (3), 419-445.

Rencher, A. C. (2002). *Methods of Multivariate Analysis* (second ed.). A John Wiley & Sons Inc.

Rosly, S. A., & Bakar, M. A. (2003). Performance of islamic and mainstream banks in Malaysia. *International Journal of Social Economics , 30* (12), 1249-1265.

Roy, D. D. (2010). *Principles of Questionnaire Developement With Empirical Studies.* New Delhi: Prasad Psycho Corporation.

Sadikoglu, E., & Zehir, C. (2010). Investigating the effect of innovation and employee performance on relationship between TQM practices and firm performance:An empirical study of Turkish firms. *International Journal of Production Economics* , 1-14.

Samson, D., & Parker, R. (1994). Service quality: the gap in the Australin consulting engineering industry. *Internationl Journal of Quality and Reliability Management , 11* (7), 60-76.

Samson, D., & Terziovski, M. (1998). The relationship between total quality management practices and operational performance. *Journal of operations management , 17*, 393-409.

Samson, D., & Terziovski, M. (1999). The relationship between total quality management practices and operational performance. *Journal of Operations Management , 17* (4), 393-409.

Saraph, J. V., Benson, G. P., & Schroder, R. G. (1989). An instrument for measuring the critical factors of quality managemetn. *Decision Science , 120*, 810-829.

Saraph, J. V., Benson, P. G., & Schroeder, R. G. (1989). An instrument for measuring the critical factors of quality management. *Decision Sciences , 20* (4), 810-829.

Schneider, B., Wheeler, J. K., & Cox, J. F. (1992). A passion for service:using content analysis to explicate service climate themes. *Journal of Applied Psychology , 77*, 705-716.

Selvaraj, M. (2009). Total Quality Management in Indian Commercial Banks: A Comparative Study. *Journal of Marketing & Communication , 4* (3), 59-70.

Sharma, S., Niedrcih, R. W., & Dobbins, G. (1999). A framework for monitoring customer satisfaction:an empirical illustration. *Industrial Marketing Management , 28*, 231-243.

Shenawy, E. E., Baker, I., & Lemak, D. J. (2007). A meta-analysis of the effect of TQM on competitive advantage. *International Journal of Quality & Reliability Management , 24* (5), 442-471.

Shostack, G. L. (1977). Banks sell services-not things. *Bankers Magazine* (32), 40-45.

Shrestha, G. K. (2009). Financial Sectors Reform in Nepal. *Economic Review , 75*, 75-90.

Shrestha, S. (1995). *Portfolio Behaviour of Commercial Banks in Nepal.* Kathmandu: Sunity Shrestha.

Silvestro, R. (1998). The manufacturing TQM and service quality literatures:synergistic or conflicting paradigms? *International Journal of Quality & Reliability Management , 15* (3), 303-328.

Silvestro, R. (2001). Towards a contingency theory of TQM in services How implementation varies on the basis of volume and variety. *International Journal of Quality and Reliability Management , 18* (3), 254-288.

Siraz, M. (2003). *Context Setting Paper in Quality and Stangards in WTO regime.* Consumer right commision of Pakistan.

Sit, W. Y., Ooi, K. B., Lin, B., & Chong, A. Y. (2009). TQM and customer satisfaction in Malaysia's service setor. *Industrial Management and Data Systems , 109* (7), 957-975.

Snell, S., & Bohlander, G. (2007). *Human Resource Management.* Delhi: Thomson South-Western.

Sohal, A. S., & Terziovski, M. (2000). TQM in Australian manufacturing: factors critical to success. *International Journal of Quality& Reliability Management , 17* (2), 158-167.

Spreitzer, G. M., Cohen, S. G., & Ledford, G. E. (1999). Developing effective self managing work teams in service organizations. *Group & Organization Management , 24* (3), 340-366.

Srivastava, S. B., & Mishra, R. C. (2009). Quality and profitability improvement by technical audit. *International Journal of Engineering and Technology , 1* (2), 30-39.

Stein, P. (1998). Effective measurement of business performance. *Annual Quality Congress Proceedings*, (pp. 414-417).

Stevens, S. (1946). On the Theory of Scales of Measurement. *Science , New Series , 103* (2684), 677-680.

Stevenson, W. j. (2012). *Operations Management* (11th Edition ed.). McGraw-Hill Irwin.

Sun, H. Y. (2000). Total quality management, ISO 9000 certification and performance improvement. *International Journal of Quality & Reliability Management , 17* (3), 168-179.

Sureshchandar, G. S., Rajendran, C., & Anantharaman, R. N. (2001a). A conceptual model for total quality management in service organizations. *Total Quality Management , 12* (3), 343-363.

Sureshchandar, G. S., Rajendran, C., & Kamalanabhan, T. J. (2001). Customer perceptions of service quality: a critique. *Total Quality Management , 12* (1), 111-124.

Talib, F. (2013). An overview of total quality management:Understanding the fundamentals in service organization. *International Journal of Advanced Quality Management , 1* (1), 1-20.

Tang, K. H., & Zairi, M. (1998). Benchmarking quality implementation in a service context: a comparative analysis of financial services and institutions of higher education.Part I: Financial service sector. *Total Quality Management , 9* (6), 407-420.

Taylor, L. K. (1993). *Quality sustaining customer service* . Century business.

Theingi, P. S., & Phungphol, Y. (2008). Social capital in southeast asian business relationships. *Industrial Marketing Management , 37* (5), 523-530.

Uusitalo, k., Hakala, H., & Kautonen, T. (2008). Customer complaints as a source of customer-focussed process improvment: A constructive case study. *Int. Journal of Business Science and Applied Management , 3* (1), 1-13.

Valmohammadi, C., & Beladpas, M. (2014). Customer relationship management and service quality, a survey within the banking sector. *Industrial and Commercial Training , 46* (2), 77-83.

Vlahos, N. J., Khattak, A., Manheim, M. L., & Kanafani, A. (1994). The role of teamwork in planning methodology for intelligent urban transportation system. *2* (4), 217-229.

Waldman, D. A., & Gopalkrishnana, M. (1996). Operational, organizational, and human resource factors predictive of customer perceptions of service quality. *Journal of Quality Management , 1* (1), 91-107.

Ward, J., & Peppard, J. (2002). *Strategic planning for information Systems* (Third ed.). England: John Wiley & Sons, Limited.

Wilson, D. D., & Collier, D. A. (2000). An empirical investigation of the Malcolm Baldrige National Quality award causal model. *Decision Sciences , 31* (2), 361-390.

Wilson, D. D., & Collier, D. A. (2000). An empirical nvestigation of the Malcolm Baldrige National Quality Award causal model. *Decision Sciences , 31* (2), 361-390.

Woon, K. C. (2000). TQM implementation: comparing Singapore's servcie and manufacturing leaders. *Managing Service Quality , 10* (5), 318-331.

Yeow, P. H., & Sen, R. N. (2006). Productivity and quality improvements, revenue increment, and rejection cost reduction in the manual component insertion linesthrough the application of ergonomics. *International Journal of Industrial Ergonomics , 36*, 367-377.

Young, R. D., & Hasan, I. (1998). The performance of de no vo commercial banks:A profit efficiency approach. *Journal of Banking and Finance , 22*, 565-587.

Yuki, G. (1989). *Leadership in Organisations.* Prentice-Hall.

Ziethaml, A. V., & Bitner, M. J. (1996). *Services Marketing.* McGraw Hill Inc.

ANNEX

Annex 1: Employee Survey Instrument

Using 1-to-5 scale, where

   1= strongly disagree, 2 = disagree, 3= undecided, 4 = agree and 5 = strongly agree

Please indicate your rating with each item (Q1 to Q42) by placing the appropriate number in the box following that item.

Question number	Code	Item	Your Score
Q1	LD1	My supervisor conducts regular reviews of quality performance.	
Q2	LD2	My supervisor maintains close contact with staffs	
Q3	LD3	My supervisor enforces total quality commitment to all staffs.	
Q4	LD4	Top level management gives quality issues to top priority as criteria.	
Q5	IA1	We carefully collect data on all facets of this bank.	
Q6	IA2	We analyze all work process in the bank	
Q7	IA3	Key performance figures are always available for analysis and decision making in this bank	
Q8	SP1	We see regular strategic planning in this bank.	
Q9	SP2	Business has clear quality goals in this bank.	
Q10	SP3	Strategic plan is linked to quality values in this bank.	
Q11	SP4	Planning process includes continuous quality improvement in this bank	
Q12	HR1	Staffs work as a team with clear goals in this bank.	
Q13	HR2	Each member is encouraged to develop new ways to do their job better	
Q14	HR3	All staffs understand how their tasks fit into an overall plan in this bank.	
Q15	HR4	All staffs are focused on continuous efforts in all areas.	
Q16	HR5	I observe that staffs are encouraged for their personal growth	
Q17	HR6	We have policy of reward to staff who help improve product/service quality in this bank	
Q18	HR7	Staff members are aware of long term business goals in this bank	
Q19	HR8	Staff members receive appropriate training and are multi-skilled in this bank	
Q20	CF1	We collect data to monitor changes in customer needs	
Q21	CF2	We ask customers systematically what they expect in product/services.	
Q22	CF3	We ask customers if they are satisfied with product/services.	
Q23	CF4	We investigate when we lose a customer	
Q24	PM1	We make improvements in product/services continually.	
Q25	PM2	In the past year we have introduced at least one new product/service.	
Q26	PM3	We have improved at least one feature of products/services I the past year.	
Q27	PM4	We monitor all production/service process in this bank.	
Q28	PM5	We use statistical process control to monitor production/service process.	
Q29	CS1	All customers' complaints are recorded in this bank.	

Q30	CS2	A customer is adequately satisfied if they continue to use products/services.	
Q31	CS3	We know what customers expect from our products/services.	
Q32	CS4	We use customer complaints to improve product/services.	
Q33	SQ1	We have increased physical facilities and equipments in this bank and also maintained the physical appearance of employees.	
Q34	SQ2	We are able to provide exact required service according to given specifications.	
Q35	SQ3	We have raised inclination and willingness of the employees to serve customers quickly and properly.	
Q36	SQ4	Employees are knowledgeable, experienced and able to build self-confidence as well as confidence in customer themselves.	
Q37	SQ5	We look at the customers as close friends and distinguished clients.	
Q38	OP1	Profitability has increased in the past three years due to our quality program	
Q39	OP2	Due to quality improvement effort revenue have increased in the past.	
Q40	OP3	Both interest income and non-interest incomes have increased the past three years.	
Q41	OP3	The number of customers has increased in the past three years.	
Q42	OP5	We have increased the loans and investments in the past three years in parallel with the deposit.	

Respondent's Details

First Name: …………………………………………. Last name: ………………...........

Age: ☐   Gender: Male   ☐   Female   ☐

Name of the Bank and Address: ………………………………………………………....

Working Department: ……………………...

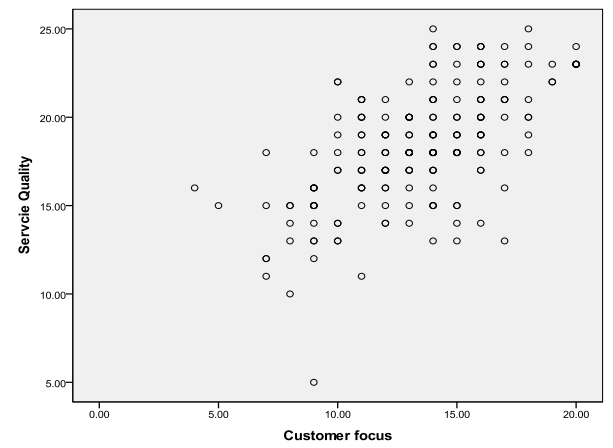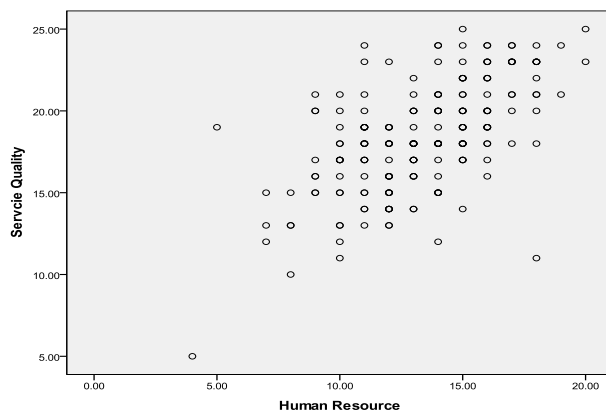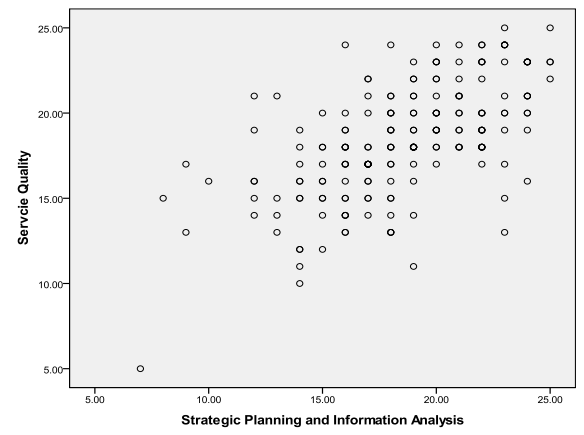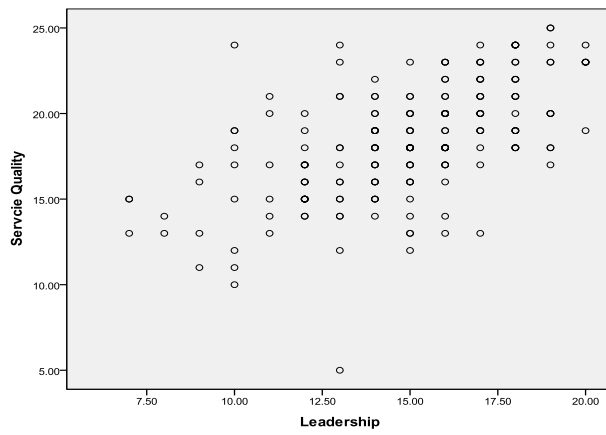Position/Level: ……………………………………………………………………………

Number of service years in this bank: ☐

Educational Level:

Intermediate ☐   Bachelor ☐   Master ☐

Mphil ☐   Doctorate ☐

Marital Status: Married ☐   Unmarried ☐

Annex 2: Scatter Diagram showing linear Relationships
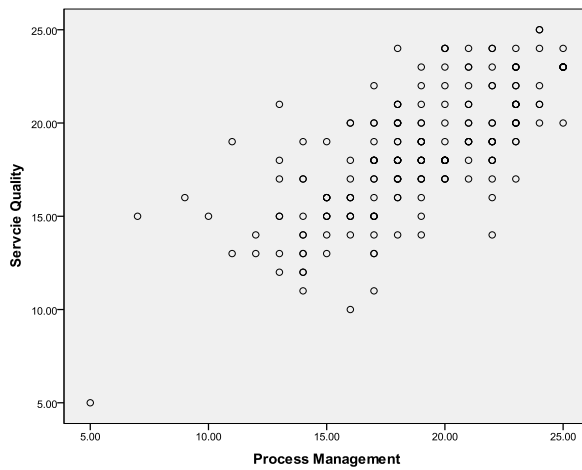
Annex 3: Customer Survey Instrument

Using 1-to-5 scale, where

   1= strongly disagree, 2 = disagree, 3= undecided, 4 = agree and 5 = strongly agree

Please indicate your rating with each item (Q1 to Q30) by placing the appropriate number in the box following that item.

| Question number	Code	Item	Your score
Q1	TAN1	Employees have a neat, professional appearance	
Q2	TAN2	The bank has modern equipment	
Q3	TAN3	The bank has visually appealing material associated with service.	
Q4	TAN4	The facilities of bank are visually appealing	
Q5	RE1	Bank employees provide service as promised	
Q6	RE2	Bank employees are dependable in handling customer's service problems.	
Q7	RE3	Bank employees perform services right at the first time.	
Q8	RE4	Bank employees provide services at the promised time.	
Q9	EM1	Bank employees giving customers individual attention	
Q10	EM2	Bank employees deal with customers in a caring fashion	
Q11	EM3	Bank employees have the customer's best interest at heart.	
Q12	EM4	Bank has hours convenient to all customers	
Q13	EM5	Bank employees understand the individual needs of their customers	
Q14	ASN1	Bank employees instill confidence in customers.	
Q15	ASN2	Bank employees make customers feel safe in their transaction	
Q16	ASN3	Bank employees are consistently courteous.	
Q17	ASN4	Bank employees have the knowledge to answer customer question.	
Q18	RES1	Bank employees provide prompt service to customers.	
Q19	RES2	Bank employees are always willing to help customers.	
Q20	RES3	Bank employees are ready to respond to customers' request.	
Q21	CS1	I have an inner stimulant to deal with the bank.	
Q22	CS2	I have full satisfaction with the way service is provided.	
Q23	CS3	I have full satisfaction with the responsiveness speed to complaints submitted.	
Q24	CS4	I have full satisfaction with workers' skill in providing services	
Q25	CS5	I am fully satisfied with the way workers treat me.	
Q26	CS6	I am fully satisfied with the speed of providing services.	
Q27	CS7	I am fully satisfied with the means of communication with the bank.	
Q28	CS8	I am fully satisfied with the facilities the bank is provided with	
Q29	CS9	I persuade my friends to deal with the bank.	
Q30	CS10	I am fully satisfied with the amount of time I spend waiting for service.	

Respondent's Details

Full Name: ……………………………………………………………………

Gender: Male   [ ]   Female   [ ]

Age: [ ]

Name of the Bank and address having account: …………………………………...

Profession:

   Service   [ ]   Business   [ ]   Social work   [ ]

Students   ☐   House-wife   ☐   Retired   ☐

Educational Level:

School level   ☐   Intermediate   ☐   Bachelor   ☐

Mater   ☐   Higher than Master level   ☐

Marital Status: Married   ☐   Unmarried   ☐

Permanent Address: ………………………………………………………………

Temporary Address: ………………………………………………………………

Annex 4: Scatter Diagram showing linear Relationships of CST with SQ Dimensions
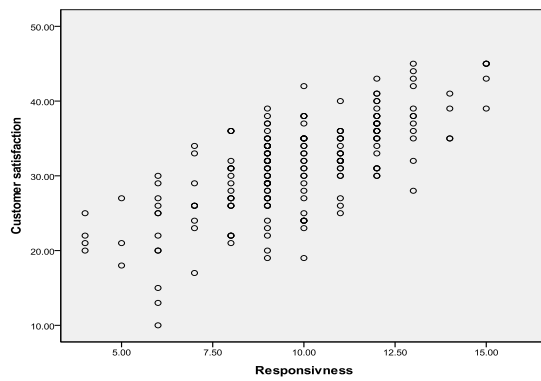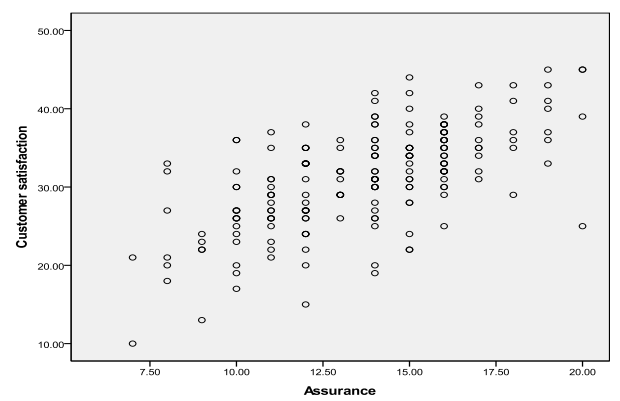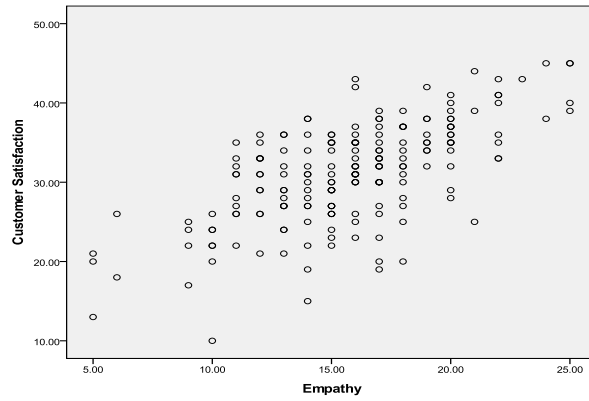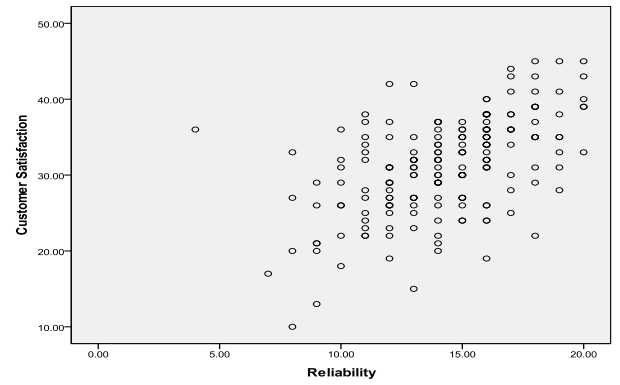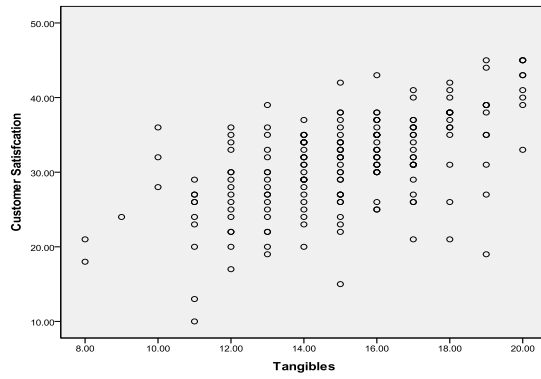
Annex 5: **Correlations Matrices and p-value by Bank Type**

Bank Type		SQ	LD	SPIA	HR	CF	PM
	SQ	1					
	LD	0.405	1				
		0.001					
	SPIA	0.317	0.619	1			
SOB		0.015	0.000				
	HR	0.253	0.705	0.717	1		
		0.054	0.000	0.000			
	CF	0.486	0.559	0.609	0.594	1	
		0.000	0.000	0.000	0.000		
	PM	0.501	0.561	0.397	0.507	0.536	1
		0.000	0.000	0.002	0.000	0.000	
	SQ	1.000					
	LD	0.540	1.000				
		0.000					
	SPIA	0.683	0.630	1.000			
JVB		0.000	0.000				
	HR	0.689	0.296	0.555	1.000		
		0.000	0.064	0.000			
	CF	0.750	0.511	0.618	0.654	1.000	
		0.000	0.001	0.000	0.000		
	PM	0.773	0.620	0.817	0.591	0.674	1.000
		0.000	0.000	0.000	0.000	0.000	
	SQ	1.000					
	LD	0.570	1.000				
		0.000					
	SPIA	0.467	0.416	1.000			
PCB		0.000	0.000				
	HR	0.546	0.322	0.357	1.000		
		0.000	0.001	0.000			
	CF	0.543	0.371	0.519	0.457	1.000	
		0.000	0.000	0.000	0.000		
	PM	0.606	0.516	0.461	0.424	0.441	1.000
		0.000	0.000	0.000	0.000	0.000	