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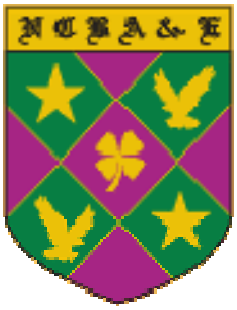

TACIT KNOWLEDGE SHARING MODEL (TKSM) FOR BANKS: IMPROVING THE FINANCIAL PERFORMANCE

BY

ABDUL AZIZ KHAN

MASTER OF PHILOSOPHY
IN
BUSINESS ADMINISTRATION

May, 2011

NATIONAL COLLEGE OF BUSINESS ADMINISTRATION & ECONOMICS

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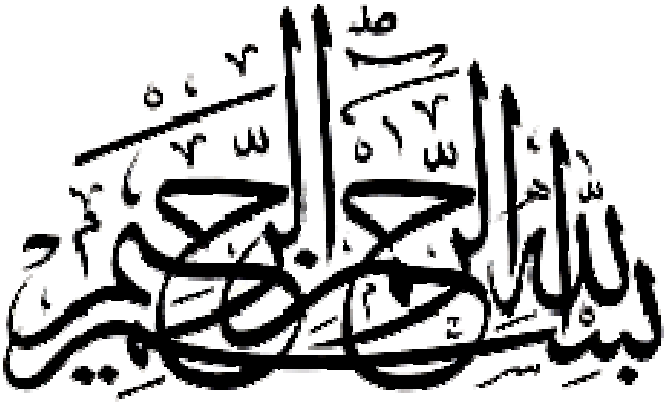

IN THE NAME OF ALLAH
THE MOST BENEFICENT
AND THE MERCIFUL

NATIONAL COLLEGE OF BUSINESS ADMINISTRATION & ECONOMICS LAHORE

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Dissertation Committee:

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Chairman

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Member

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Member

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Rector
National College of Business Administration & Economics

DECLARATION

This is to certify that this research work has not been submitted for obtaining similar degree from any other university / college.

ABDUL AZIZ KHAN
May, 2011

DEDICATED
TO

My wife Nasreen
and children Ifra, Arsam,
Ehtasham, Sundas and Wisam
for an exemplary love,
encouragement and support

ACKNOWLEDGEMENT

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In the last but not the least, I am thankful Mr. Sajid Iqbal Khan Niazi and Namatullah Khan Niazi who helped me in data collection.

RESEARCH COMPLETION CERTIFICATE

Certified that the research work contained in this thesis entitled **"Tacit Knowledge Sharing Model (TKSM) for Banks: Improving the Financial Performance"** has been carried out and completed by **Abdul Aziz Khan** under my supervision during his M.Phil. Business Administration Programme.

(Dr. Suleman Aziz Lodhi)
Supervisor

SUMMARY

Economic recessions and cyclical financial crises have recurred time and again in history. There are many contributory factors to the recessions and the resulting crises; one of the prominent contributory factors in such economic crises is financial sector. The financial sector majorly consists of banking systems that is borrowing from public and lending to businesses at a small premium. As banking is considered to be a nerve system in an economy therefore any problem in the banking system impedes the growth of the economy.

Non-Performing Loans (NPLs) are the deleterious problem of banks, because delayed payment or non-payment adversely affects the very performance of banks. Non-performing loans are resultant effect of low quality credit decisions; this problem of quality of credit decisions occur when the credit decision makers ignore tacit knowledge and decide solely on explicit knowledge based criteria. Knowledge Management has recently emerged in banking sector to improve performance in general, but still the contemporary banking is lacking a systematic mechanism for tacit knowledge sharing and necessitates a tacit knowledge sharing model.

The research establishes that (NPLs) adversely affect the financial performance of banks and poor quality of credit decisions of banks, at the time of sanction of loans, is one of the main reasons of NPLs. The mechanism proposed in the study expresses the way to improve the quality of credit decisions in order to control NPLs. The mechanism is based on tacit knowledge sharing among the functionally interrelated and interdependent dyads of communities (i.e. recovery and credit personnel) within a bank. The study provides an insight that recovery personnel possess valuable tacit knowledge particularly about the post disbursement behaviors of credit customers and this knowledge can play an important role in future credit decision making.

In the context of the study, an intensive literature review of knowledge management and banking domains have been done. Concepts of knowledge, Knowledge Management (KM), tacit knowledge, and explicit knowledge have been revisited. The knowledge management has been evaluated as a problem solver in the domain of banking. Existing KM models for banks have been critically reviewed from view point of any solution they could offer regarding problem of NPLs of banks. Finally the new KM model (i.e. Tacit Knowledge Sharing Model for banks) has been developed.

The model has been constituted on the constructs core to the credit and recovery functions of banking, with an appropriate blend of tacit knowledge. The theme of the model is that the quality of future credit decisions can be improved by the tacit knowledge sharing among credit and recovery personnel. It demonstrates that quality of credit decisions will improve the recovery of loans and resultantly the financial performance of the bank.

The model has been tested in real life situation by a comprehensive survey of banking sector in Pakistan through carefully designed instrument. A cross sectional empirical study was conducted in field setting based on multistage probability sampling. The hypothesized relationships among the constituent constructs were statistically tested through t-Test to prove the accedence of proposed model by the community of practice. The study also contains additional insight that the tacit knowledge (on which the model has been modeled), is practically sharable by using technology. The research is also able to advance empirical evidence to support the argument of additional insight.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The world over cyclical financial crises questions the implied assumption of standard economic models that economies are inherently stable (Logojan 2010). It compels the economists to rethink the role of humans in economic theories. The concept of expressing the economy as a state of a country in terms of production, consumption of goods, services, and supply of money has changed. The economies have shifted from industrialization to information and from information to knowledge era. This paradigm shift of the economies also necessitates incorporating the due changes in the financial systems. The financial systems in contemporary economies majorly consist of the banking sector. Therefore to effect any change in financial systems necessarily involves the banking. Banking is one of the most important sectors that play pivotal role in financial systems (Salehi et al. 2009).

Although, there is no dearth of research on the role of banking in economies and the scope of our study is not extended to this already settled issue but still we find room to iterate the role of banking in economy to outset the context of the study. The arguments of Okpara (2009) suffice the establishment of the importance of banking sector to any economy. He argued that banks are considered as:

i) principal depositories of public saving,
ii) nerve center for payments,
iii) vessels endowed with ability of creating & allocating financial resources, and
iv) conduit for implementation of monetary and fiscal policies.

The success of monetary and fiscal policies, to large extent, depends on the banking system (Okpara 2009).

Banking is the business of loans. It is borrowing from the public and lending to the businesses at a small premium (Karunakar et al. 2008). It is a highly leveraged business, sensitive to interest rates and recovery of loans. The history speaks that banking systems time and again reach to the verge of collapse and necessarily drag economies towards crisis. Banks' failures, inter alia, are major cause for depression in economies (Logojan 2010). One of the prominent reasons for the world over financial crisis is building up of NPLs

in banking and financial sector (Karunakar et al. 2008). Lending of money involves lot of credit risk i.e. the occurrence of Non-Performing Loans (NPLs). The banks' credit is a catalyst in the economic development of a country therefore a smooth flow of credit is necessary and consequent risk of NPLs is not avoidable. But, the bottlenecks in the flow of credit, due to the mounting NPLs, create an adverse repercussion for the economy (Karunakar et al. 2008). At the same time, a slow down in economic activity is also likely to accelerate the growth of the NPLs (Fistic et al. 2009). The high level of NPLs in banks is a matter of grave concern to the general public as well as to the governments. In today's bubble economies, the banks are on the hump of non-performing loans (Ito 2004) e.g. accumulated bad debts of State Owned Commercial Banks (SOCB) of China had reached nearly 50 percent (4 trillion Yuan) of the nation's GDP in 1999 (Yeung 2009).

Recovery of loans is the core issue of the banks. NPLs are considered the main variable of financial crisis. NPLs deteriorate liquidity and profitability of the banks particularly where NPLs are out of proportion. The risk of NPLs cannot be eliminated but can only be reduced and managed effectively. The management of non-performing loans is a vital task before the bankers because it challenges the bank's resistance capacity (Ahmed 2010). It is also proved beyond doubt that NPLs in banks ought to be kept at the lowest level (Karunakar et al. 2008). The researchers are in search of the effective possible solution to the problem of NPLs.

Before embarking upon any solution, let us comprehend problem and the causes of the problem. The issue of recovery of NPLs is the major phenomena under study in the domain of banking. In fact, recovery is the function of the judgment of a bank about customers' credit worthiness and capacity to pay back the loans. The people initiating, processing, sanctioning and disbursing credits have to deliver very important and quick decisions in a short span of time. NPLs are neither a cause nor an action but an effect of the actions. Credit decisions are the actions, some of which result into NPLs. Obviously, there are certain causes, as a consequence of which credit decisions result into NPLs. There is lot of research literature to establish these causes. Poor credit appraisal system, lack of vision while sanctioning, reckless advances to achieve targets, lack of sincere corporate culture, lack of co-ordination, lack of knowledge sharing and lack of proper monitoring are common causes of poor credit decisions (Ahmed 2010). Customer's failure to disclose vital information during the loaning process is other main factor contributing towards NPLs (Waweru et al. 2009). Laxities in legal system, defective accounting disclosure practices, general recession and willful defaults are yet some other reasons to lead the banks to the accumulation of NPLs (Karunakar et al. 2008). High levels of corruption, on top of the other

reasons, lead the banking sector to increased vulnerability (Zarrouk et al. 2009).

The lasting solution to the issue of NPLs can be achieved with proper credit assessment and risk management mechanism (Karunakar et al. 2008). Therefore we have to engineer the process of credit assessment for uncovering the solution. The credit assessment can be defined as a set credit decisions taken by the credit personnel of a bank for assessment of a proposal of credit, whereas, the credit (loan) is an expectation of a sum of money (from a bank) for and within some limited time (Atieh 1990). Credit decision is a function of different variables. Every credit decision has, inter alia, following four major parts (Rose 2001; Nagarajan 2009).

i) Judgment about capacity of the customer to pay back the loan. This part is quantitative hence objective.
ii) Judgments about willingness of the customer to pay back the loan. This part is qualitative and subjective.
iii) Judgments about purpose of the loan. It is qualitative and subjective.
iv) Judgments about identification of the customer (loanee). It also is qualitative but objective.

A credit decision is taken at front office of the bank, with support of top management, on the basis of predetermined criteria known as official criteria for credit assessment. The banks devise this criteria based on their knowledge of laws of the land, contextual circumstances, technological facilities, financial considerations, religion, foreign exchange policies, values, norms, language, geographical position, demographic features, business conditions, politics, and availability of expertise in management. It provides an explicit format to formulate a credit decision. Credit personnel evaluate the credit proposals by applying the process of inquiry prior to the decision of credit (Atieh 1990). They have limited time to allocate for analysis of credit proposals but have to analyze it very comprehensively. In order to deliver a fair judgment, they make an assessment about sincerity, integrity, and capability of a borrower. It is their screening and monitoring rather than the risk or size which adds value to the bank (Lee et al. 2009). The decision to lend, as of today, is ultimately determined by official assessment criteria for lending (Yeung 2009). In fact, the credit decisions are outcomes of bankers' knowledge based inquiry process about the customer and the transaction. Credit decision makers always want to acquire reliable quick precise information about the customers and the processes. They mostly rely on the predetermined traditional criteria of banking systems.

It is also a fact that there are many aspects of credit decisions in which credit managers bypass the formal criteria and use a set of informal (unwritten) policies/criteria where they feel satisfied. This act of decision makers neither necessarily contradict nor necessarily detrimental to interest of the bank. Sometimes it becomes more appropriate to take such steps in best interest of the bank. This informal unwritten criteria used by the bankers is a form of tacit knowledge which is being used by bankers unsystematically at their will. The idea of using tacit knowledge (consciously or unconsciously) is, in fact, deeply ingrained in our minds while making decisions.

Credit decisions in banking sector are indispensable and contain inherent credit risk (i.e. risk of default) which is unavoidable (Karunakar et al. 2008). As a result of credit decision there is post disbursement paradigm shift of responsibility from front to back office (for the purpose of the study front office means the credit decision making personnel and back office means loans recovery personnel). After the credit portfolio is handed over to the loans recovery personnel, it becomes their prime responsibility to successfully recover. They recover loans over the period of time in accordance with the terms of financing agreements executed in pursuance of credit decisions. Recovery, consequent to credit decision, is a regular feature of the banking. Recovery, which is major contributory variable to financial performance of a bank, can only be ensured by good quality credit decisions. The development of some instrument which should curtail credit risk by way of improvement in quality of credit decisions is a call of the day. Because the successfulness of recovery, (which is measured on the basis of completeness and timeliness), is resultant outcome of credit decisions and a formative variable of financial performance.

The traditional criteria based decision making in credits is becoming disadvantageous to banks. Quality credit decisions can be made through leveraging the organizational knowledge. The contemporary system of credit decisions, in fact, ignores a major source of knowledge. In order to leverage the knowledge in true sense, attention to the tacit knowledge of the people is necessary. The organizational knowledge and wisdom emanate from people; therefore, the knowledge embedded in the minds of the people has become very important to be accessed (Gwin 2003). Tacit knowledge of the people at real work (i.e. tacit knowledge of credit and recovery personnel in banks) is utmost best source of knowledge (Ghaziri et al. 2005).

In the changing environment, on the one hand, the time of credit decision-making is being measured even in seconds and learning from leveraging expert's knowledge is becoming very important for banks

(Haslinda 2009), on the other hand the banks are continuously losing knowledge of experts because of their resignations or retirements. In order to hint the issue Yeung (2009) argued that even a comment of an experienced banker on the loan applicant's reputation is important for credit decision making. Zhou (2006) more clearly and rightly argued that the banks do not learn well from the past. They keep on losing knowledge of experts due to their resignation or retirement. The systematic diffusion of tacit knowledge can improve the quality of credit decisions and resolve this problem of "reinventing the wheel" which occurs when an expert staff leaves the bank (McAdam et al. 2007). There is a severe need to utilize tacit knowledge in decision making in order to avoid the fresh incidence of NPLs but not at the cost of fresh deployment of credits (Ahmed 2010). To control NPLs we need to reach on such a credit assessment and risk management mechanism that provide the lasting solution of this problem (Karunakar et al. 2008).

In nutshell we can say that the credit decisions are actual work in a bank, credit decision makers need knowledge, tacit knowledge is essential for the credit decisions, recovery is a function of credit decisions and recovery personnel possess tacit knowledge. Despite of the fact that recovery personnel are source of knowledge about transaction and customer there is no such mechanism to formulate their know-how into tangible knowledge. Hence, tacit knowledge of recovery personnel is not systematically used in credit decision making at present.

Use of tacit knowledge in decisions is issue of knowledge management. Developments in information technology have entered into a new arena of knowledge. Knowledge Management (KM) emerged as new discipline which has almost completed its era of evolution. The solutions of complex business problems are being advanced in the area of KM research. Applications of KM tools for solving business problems are now becoming common practice in the industry. Most of the research done in the KM arena has an IS/IT background and despite of the fact that making tacit knowledge explicit is difficult, costly and not always desired, a lot of developments have been made (Stanmark 2001). Knowledge Management Systems (KMS) are emerging as powerful sources of competitive advantage as the basis of value creation increasingly depends on the leverage of intangible assets for banks (Hahn et al. 2000). Knowledge represents one of the most important assets. The main challenge is to effectively manage the knowledge while maintaining its quality (Verincianu et al. 2009). It has become inevitable to uncover and share knowledge & wisdom possessed by bank employees (Ito 2004). It is justified to search a solution of the problem of quality of credit decision making in banks via knowledge management.

There are many research studies on quality of bank assets, and loan portfolio, management of NPLs but studies relating to control of NPLs by improving quality of credit decision making particularly in KM perspective remain less-researched area. The contemporary banking system does not provide an appropriate mechanism for tacit knowledge sharing. A KM mechanism aimed to refine the credit decision making processes for improvement of recovery of loans and financial performance of banks is highly needed.

1.2 RESEARCH PROBLEM

Non-Performing Loans (NPLs) adversely affect the financial performance of banks, therefore, a knowledge management model is needed for exploiting the potential of tacit knowledge to refine the decision making processes for improving the recovery and financial performance of banks.

1.3 OBJECTIVES OF THE STUDY

Recovery of bank loans and effective control of NPLs is an issue of vital importance for banks. There is lot of research being done to solve the problem; this research addresses the issue in an innovative manner. The objectives of the study are:

- to suggest tacit knowledge based model to avoid NPLs at credit decision making stage for improving the financial performance of banks,
- to identify the possessors and potential recipients of tacit knowledge,
- to check possible explication and use of tacit knowledge in order to control the NPLs and
- to tests the scope, usefulness, and precision of the suggested model through accedence of community of practice.

1.4 HYPOTHESES

Knowledge management emerged as a science which can advance solutions to business problems. The managers in the banking sector can seek solution of NPLs through knowledge management techniques. Knowledge sharing is an important concept which can underpin the solutions of the problems like NPLs.

The hypothesis:

1. Greater the tacit knowledge sharing between recovery personnel and credit decision making personnel better will be the quality of credit decisions.

2. Better the quality of credit decisions better will be the recovery of loans.

3. Better the recovery of loans better will be the financial performance of the bank.

1.5 RESEARCH METHODOLOGY

The research follows positivist approach as a main philosophic reference with triangulation approach as methodology. The theory is built by intensive literature review in the domain of Banking and Knowledge Management. The researchers used several methods to obtain relevant research on the topic. Libraries were explored, inter-researcher discussions were arranged, and publications from various research databases were obtained by using internet search engines. The researchers have also been able to enrich the study from on campus cross discipline research culture. The model, developed via the research, was finally tested empirically with the help of a survey of Community of Practice (CoP) through experts' validated purpose built self-reporting questionnaire.

1.6 VALIDITY AND RELIABILITY

Validity, the absence of systematic errors, is essential aspect of the study to be considered. The researchers, being conscious of the fact that systematic errors can materially affect the results of the study, tried their level best to avoid the errors. Comprehensive literature review of relevant research, proper population frame, scientific research design, systematic data collection, expert validated purpose built instrument, and appropriate analysis under supervision of research scholars provide comfort to pose high degree of confidence in the results of the study. But still there might be certain minor errors, like respondent related faults, beyond the control of the researchers. Reliability, the absence of random errors, also needs to be considered. The instrument and design of study are stable and consistent hence able to eliminate influences of unsystematic bias measures.

1.7 STRUCTURE OF THE THESIS

The structure of the thesis is given in Table 1.1 below. This gives a brief description of the topics covered in different chapters.

Table 1.1
Structure of the Thesis

Chapter No.	Title	Brief Description
1	Introduction	Background of the study, research problem and objectives, abstract hypothesis, research philosophy, validity and reliability stated in brief.
2	Literature Review	KM as problem solver, review of KM models for banks and the critique are constituent topics of this chapter.
3	Developing Tacit Knowledge Sharing Model	Developing of the foundations of the proposed model, possibilities of explicability and shareability of tacit knowledge, the process of loans; potential possessors and possible recipients/users, and the use of tacit knowledge have been assessed. A tacit knowledge sharing model has been developed for banks followed by a brief profile the constructs of model.
4	Research Methodology	Research design and methodology, population parameters, conceptual framework, sampling design, instrument of measurement and data collection approach enlightened upon.
5	Analysis and Interpretation	The data collected through survey is analyzed and the results are interpreted.
6	Conclusion	Important aspects of the study discussed including practical implications, limitations of study and future research directions. Concluding remarks also given by the researchers.

CHAPTER 2

LITERATURE REVIEW

We opt the course of literature review to find the solution of research problem identified in Chapter 1. The review consists of four sections. First section adopts definitions of the basic concepts of KM, second appreciates emergence of KM as problem solver, third evaluates KM models for banks and forth presents the critique of models by the researchers.

2.1 THE PROLOGUE

Before a detailed literature review in the context of the study, it is appropriate to define the basic concepts of KM. Knowledge, knowledge management, and dimensions of knowledge (i.e. tacit and explicit, McAdam 2007) are core basic concepts of KM pertinent to the study. We adopt the definition of knowledge as "Knowledge is human effort applied information." (Leng et al. 2006), whereas, that of Knowledge Management as "a conscious strategy of getting the right knowledge to the right people at right time and helping people to share and put information into action in ways that strive to improve organizational performance." (O' Dell et al. 1988). The definitions of explicit and tacit adopted from Awad et al. (2007) stating that, "on paper, in documents, in data bases called explicit knowledge and in minds of people is called tacit knowledge", however for detailed concept Chapter 3 may be referred.

2.2 EMERGENCE OF KM AS PROBLEM SOLVER

Knowledge management, by definition, is an umbrella term for a variety of organizational actions and is very important for today's business (Bakshi 2005). The theme of the KM theory is strategic. Earlier KM research was predominantly on defining the knowledge, knowledge management and types of knowledge which gradually moved towards solving business problems (Nemani 2009). KM recently emerged as a problem solver. Today, KM is considered as an effective source of solutions for the organizational problems. Creation and transfer of knowledge within the organization are considered as a source of competitive advantage (Haslinda 2009). The research, which started in the area of IT/IS and emerged as enabler to KM, developed many tools to create, capture, share, transfer, use, reuse, store, and

refine, different types of knowledge. Process modeling is one of these tools and techniques which the researchers use for advancing some instant solutions to a problem. The use of representation of organizational processes helps to standardize, capture, and guide the contributors to associate existing artifacts with new artifacts (Weber 2007). Lot of research surpassed on models in different areas. There are number of research models presenting the smaller scale imitations of possible solutions to perplexing problems in different disciplines.

KM also benefited from the technique of modeling. Modeling of business processes surfaced as common practice in the KM research. KM models are useful as benchmarking tools that can direct organizations towards the areas that require more attention. The models provide a way of translating management activities and guide the efforts in managing knowledge in the organizations (Haslinda 2009). KM processes, described in models, are action steps the organization uses to identify its needs and the manner in which it collects, adapts, and transfers the information across the organization (Haslinda 2009). The researchers coming from KM side, in the course of their work, started developing some process frame-works for banks to delimit the scope of KM (Finestone et al. 2004). Therefore, KM also evolved in the domain of banking as a problem solver.

Relatively, there is little research or implementation of KM in the banking industry despite of the utmost importance of the financial sector to country's economy (Leng et al. 2006). There are quite a few studies taking KM in banking as a research object (Huang et al. 2010). Initially the banks did not take KM initiatives seriously (Chiran 2008) but it is now realized that KM has potential to influence many spheres of banks (Goswami 2008). Bankers started admitting that knowledge and knowledge management is core to the management in banks (Williams 2006). Bankers are convinced that there are plausible reasons to search solutions of banking problems in the area of KM. The leading banks are now involved in KM journey (Vencatachellum et al. 2008). But they could not even fully implement first generation schemes of KM which are largely IT based and are mostly about knowledge capturing, delivery and use. Most of the banks still have no formal KM strategy. The adoption of KM among banks is still nascent. Whereas, research communities of KM, Learning Organizations (LO) and Complex Adaptive System (CAS) are heading towards collaborative nexus of domains (Finestone et al. 2004).

However it is an established fact that knowledge is the most important asset of banks and knowledge management meets a challenge to effectively manage the knowledge while maintaining its quality (Verincianu et al. 2009).

There is no 'one template' that fits all the banks' requirements to manage its intangible asset i.e. knowledge (Leng et al. 2006). The research is in search of the best possible templates for banking and few efforts have already surfaced in this context.

2.3 KM MODELS FOR BANKS

The efforts have been made by few researchers to model the processes of knowledge creation, knowledge sharing, knowledge retention, storage, and knowledge reuse in banks at higher abstract levels. In the introductory chapter we recognized the problem and planned to solve the same by designing a new KM model based on tacit knowledge of communities of practice in banks. Therefore, a critical review of existing KM models for banks is necessary. We find following KM models (Table 2.1) for banks.

Table 2.1
Knowledge Management Models for Banks

Sr. No.	Model Name	Author & Year
1	Knowledge Management System for Bank of Tokyo-Mitsubishi Ltd. (BTM)	(Ito 2004)
2	Knowledge Management Model: Government Saving Banks, Southern Thailand	(Wettayaprasit et al. 2005)
3	KM Model of China Banks	(In Leng et al. 2006)
4	Research Model – Banking Knowledge Management Model (BKMM)	(Ali et al. 2006)
5	Revised KM Model for Malaysian Banks	(Leng et al. 2006)

There are very few KM models for banks found in the literature. Existing KM models for banks mostly address the issues partially at high abstract levels. Most of the models are case studies not supported with any empirical evidence. These models are either focused on IT or on employees of banks, therefore, are subject to serious critique. We present critical review of KM models for banks given in Table 2.1.

2.3.1 Knowledge Management System for Bank of Tokyo-Mitsubishi Ltd. (BTM)

The knowledge management system by Ito (2004) was devised for Bank of Tokyo-Mitsubishi Limited, Japan with an intention to improve the knowledge sharing environment so that the employees of the bank may

access the necessary information in an efficient way. The model consists of formal and informal traditional sources of information, traditional internal user communities, and company-wide portal. The processes are directed towards quality of customer services. Traditional sources include quality assurance through various sources including library (that contains sale, internal control and interdepartmental information), expert lists, and bulletin boarding. Non-traditional sources include lotus notes, and electronic documents data basis. These sources of information provide the back up to the internal communities. Indicative communities in the model are Q & A community, administrative community, corporate customer community, and retail community. The communities of the bank provide products and services to the bank's customers through company-wide portal. The company portal has direct and indirect links with traditional and non-traditional sources.

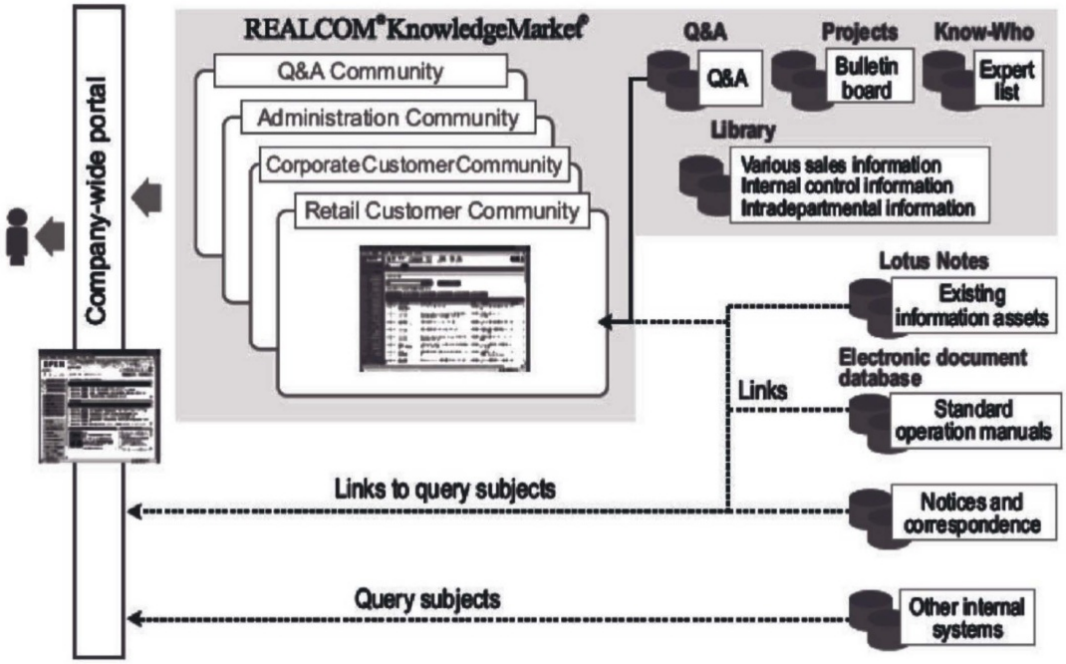

Fig. 2.1: Knowledge Management System of BTM (Ito 2004)

It is a KM model for a bank but not based on intensive research. It has been developed specifically for the Bank of Tokyo-Mitsubishi Limited, Japan. It is a demonstration of customer services through internal communities of the bank in general. Traditional sources based model provides indications of traditional storage and retrieval. If we recall the problem in hand, the model is unable to provide even a little insight about loan processes. Hence the model cannot be generalized to cater the needs of the studies like ours.

2.3.2 Knowledge Management Model---Government Saving Banks, Southern Thailand

The model presented by Wettayaprasit et al. (2005) has four parts i.e. End Users, IT Knowledge Sharing, Filtration & Testing, and IT Knowledge Assets. There are interactive information flow processes indicated in the model. End users include the department of loans, department of general banking, and department of insurance. The interdepartmental interactive knowledge sharing is indicated through IT where IT includes hardware, software and networking. The knowledge is created, stored, searched, and retrieved through interactive processes among IT personnel and the user departments both explicitly and tacitly. The model demonstrates the key role of IT experts for knowledge filtration and testing then suggest storage in the style of Case Based Reasoning. The end user departments can benefit from this storage through IT filtered processes formally and informally.

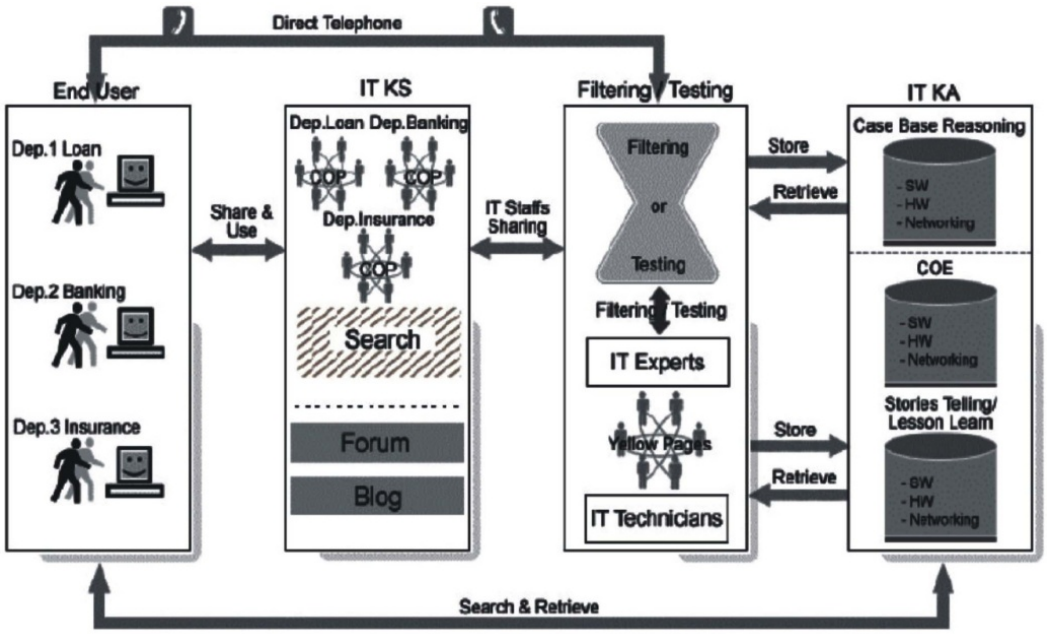

Fig. 2.2: KM Model in Government Saving Banks, Southern Thailand (Wettyaprasit et al. 2005)

It is highly IT focused model providing interdepartmental knowledge sharing framework for Government Saving Banks of a specific country. The testing, filtration, and validation of knowledge is through IT technicians and IT experts instead of banking experts. This model ignores the environment altogether. It is research model designed in the real banking scenario and is relatively close to the problem in hand. The loan department is there in the model as an end user community of the knowledge generated through the

processes of the model but still there is no specific indication towards the solution of problem of NPLs. This model, in fact, is focused towards selection of best solution of the problems of the customers in general on case based reasoning. We categorize it as a framework for collecting, indexing, storing, and analyzing the knowledge at operational level with a limited scope.

2.3.3 KM Model of china Banks

The subject model is a research model referred in Leng et al. (2006). The research uses the constructs of environment, knowledge input, knowledge return, employee's knowledge exchange, knowledge internalization, knowledge selection, knowledge capturing, knowledge assets, knowledge output, and products & services. The modeled processes start with the knowledge input/return from environment. The knowledge passes through employee's interaction and knowledge exchange which results in internalization and capturing subject to internal selection filters. The filtered selected knowledge constitutes knowledge assets. Finally the knowledge assets reportedly add premium to the products and services. The knowledge output in form of knowledge assets enriches the environment. The processes which have been modeled are shown as repetitive on circulatory format in banks.

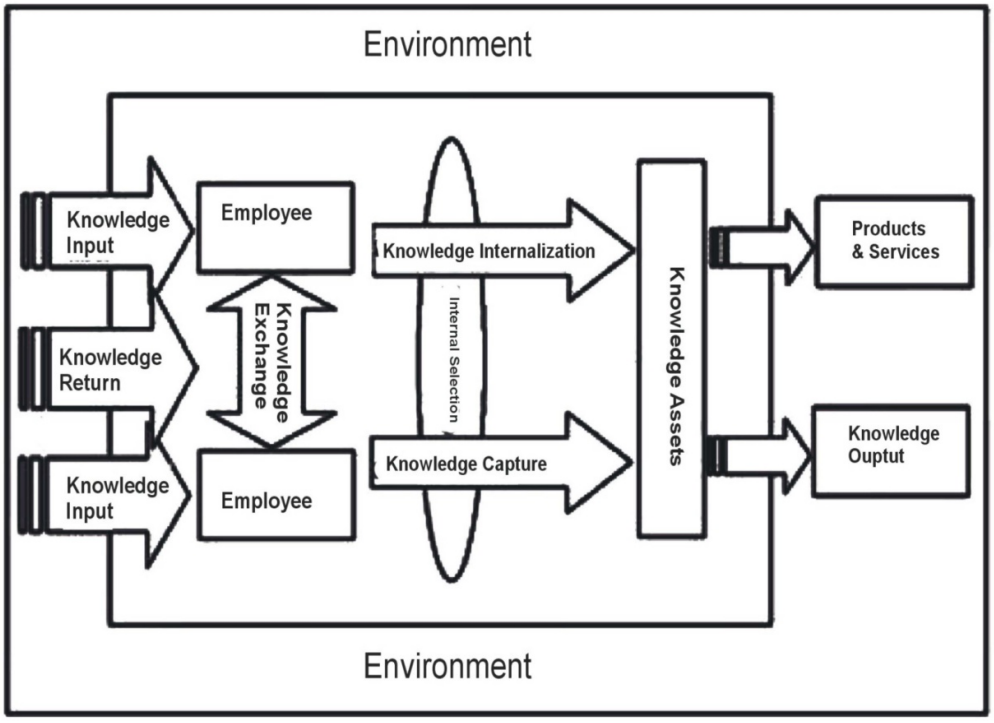

Fig. 2.3: KM Model for China Banks (In Leng et al. 2006)

The purpose of the model is to address KM issues of banks in China. The model under discussion more represents the view point of the behaviorists. It undermines the role of IT. It is focused on employees of the banks. The model deals all the factors which can possibly affect the banking processes as part of environment in general. The important processes of knowledge like externalizations have not been incorporated. It also ignores different dimensions of knowledge and uses higher level of abstraction for modeling. It deals the issue in hand generically and do not suggest any direct solution for the problem of NPLs.

2.3.4 Research Model – Banking Knowledge Management Model (BKMM)

It a research model devised by Ali et al. (2006) for Malaysian banks. It uses basic modeling constructs at higher level of abstraction. The model shows environment, people, technology, and knowledge progress mutually exclusive. The knowledge progress has been shown on the format of a loop of knowledge creation, knowledge sharing, and knowledge retention. The research is based on Malaysian banks having support of a case study of two banks selected at convenience. Practical implications of the model have been checked through initial investigation of case study.

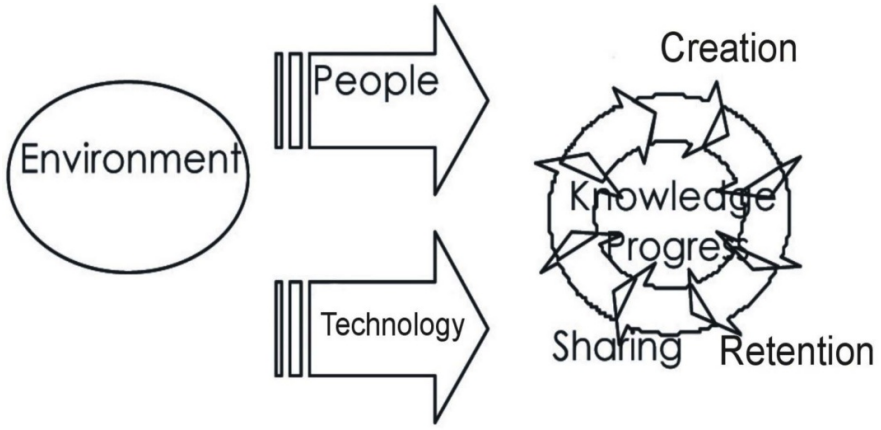

Fig. 2.4: Research Model: Banking Knowledge Management Model (BKMM) (Ali et al. 2006)

The model provides the theoretical framework of KM in banks. It is a generic model, theoretically constructed on basic modeling constructs, addressing knowledge management issues of banking sector in general. The focus of the model is on transformation of knowledge. It can serve as a guide for the future research but it cannot provide any instant solution to banking problem in hand. We categorize it more as a conceptual framework at a higher abstraction than a model.

2.3.5 Revised KM Model for Malaysian Banks

Leng et al. (2006) conducted a research and juxtaposed existing KM models for banks and presented this revised model. The model uses the very basic constructs of knowledge management. Environment, people, technology, knowledge repository and knowledge output are the constituent constructs. It seems to be an inspiration of Research Model—Banking Knowledge Management Model (BKMM) discussed above. The model uses these constructs mutually interdependent and inclusive. People mean workers, managers, investors, customers, and clients. Technology indicates the enablement of knowledge capturing, knowledge discovering, and knowledge sharing. Knowledge repository indicates the storage of captured knowledge and available in memory of computers for reuse. The processes of the model result in output of knowledge captured and discovered.

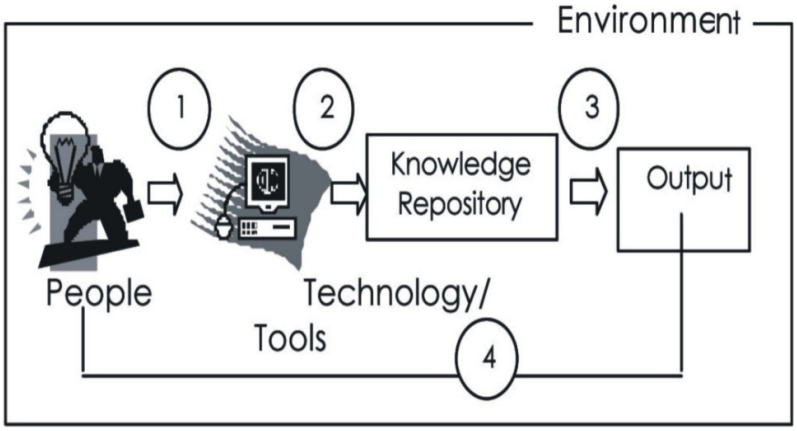

Fig. 2.5: Revised KM Model for Malaysian Banks (Leng et al. 2006)

Again it is a model formulated at higher abstract level in the context of Malaysian banks which is using very basic constructs of knowledge management for demonstration of processes. It uses the constructs mutually inclusive and interactive and rightly embedded them in general. It only clarifies the future direction of research at higher abstraction giving a good lead to researchers from banking side but cannot provide the solution in question.

2.4 THE CRITIQUE

The foregoing models could not show a balanced mix of IT and people, therefore at times lesser appreciate that technology infrastructure only promotes efficient and effective capture of knowledge (Haslinda 2009). The

technology has a role as a one of the means to foster the communication and it is impossible to capture all expertise in databases (Desouza 2003). Critical knowledge for organization depends on information and communication technologies for increasing its strategic agility and adaptability (Malhotra 2005). The models also undermine the concept that knowledge originates in the minds of individuals therefore no IT solution alone can deliver the desired goals in the area of KM unless the members of organization are motivated to share knowledge. The models suggested simply point to point repositories and are unable to demonstrate a KM system that should encourage dialogue among individuals. Role of the tacit knowledge is not valued. Validation and filtration of banking process knowledge have been modeled on IT experts and technicians in some of the models. The models in question are at higher abstraction and demonstrate the processes at generic level hence lesser applied. If there is any direct application represented that too is more representative to the explicit dimensions of knowledge and does not directly deal with the problems of core banking processes. None of the models is supported through empirical evidence hence not validated by community of practice. These models provide foundations for research but do not provide any direct instant solution to the banking problems.

For developing any true representative useful model of banking processes, we have to strike a fair balance among operational, behavioral and technological aspects. We have to accept the use of technology for storing and disseminating knowledge; and as a technologist, we have to understand that tacit knowledge and expertise are foundations of KM (Ghaziri et al. 2005). As an operationalist we have to take care of applied side. Sharing of tacit knowledge has to be considered in a dynamically real time environment so that there should be continuous interaction among learners (Nyame-Asiamah 2009).

It is concluded that KM is at very initial stage in banking. Use of KM as solution to the problems is also nascent. There is a little research on KM modeling in banking. Existing models of KM for banking are at higher abstraction level and meant for general theoretical foundations of KM research in the domain. They are either too generic to deal with any specific problem or to specific to be fairly generalized. None of the existing models directly demonstrate core banking business process (i.e. credit process) to provide solution of NPLs. There is no such model which gives an idea to use the tacit knowledge of bank employees as basis of modeling. Therefore the KM needs to be further explored in banking sector (Chatzoglou et al. 2009).

CHAPTER 3

DEVELOPING TACIT KNOWLEDGE SHARING MODEL (TKSM) FOR BANKS

The idea of use of tacit knowledge for solving problems of banks is new in the banking research. The chapter has been divided into seven sections. First section is conceptual background of tacit and explicit dimensions of knowledge, second the adequacy of preparedness of banks to buy the idea of KM, third the process to be modeled, fourth introduction to dyad of knowledge contributors and recipients, fifth the need of TKSM, sixth development of the TKSM, and seventh insight of the constructs used for developing TKSM.

3.1 TACIT AND EXPLICIT DIMENSIONS OF KNOWLEDGE

It is widely agreed that knowledge is a fundamental asset for organizations in contemporary economy. Knowledge is highly productive when it is captured in the minds of people and is funneled to a right level at right time where it is required (Ghaziri et al. 2005). Knowledge production and sharing has been recognized as the key for innovation (Rivera-Vazquez et al. 2009). Knowledge management emerged as a discipline core to the management which is being adopted as KM systems by the organizations. The success of KM systems depends on knowledge sharing and there is no universal set of practices that can be used to facilitate knowledge sharing. The KM as it is practiced really means facilitating the sharing of tacit knowledge. Since we are also on the road to find the solution of a business problem by using tacit knowledge, therefore, it is appropriate to comprehend the concepts of tacit and explicit knowledge. In order to develop an understanding of the concepts, we visit the definition of tacit knowledge as given by MCAdam et al. (2007). He defines the phenomenon as "Tacit knowledge is knowledge-in-practice developed from direct experience and action; highly pragmatic and situation specific; sub-consciously understood and applied; difficult to articulate; usually shared through interactive conversation and shared experience" (McAdam et al. 2007). He further argues that tacit and explicit are not types or categories of knowledge but only the aspects or dimensions of knowledge. Therefore we also find it appropriate to treat tacit as a dimension of knowledge different from explicit. The context of the study necessitates enlightening upon a bit further on tacit

and explicit. We place on record few pertinent definitions of lead researchers regarding tacit and explicit in Table 3.1.

Table 3.1
Tacit vs. Explicit Knowledge

Sr. No.	Definition	Author & Year
1	Tacit knowledge is defined as non-verbalized, intuitive and un-articulated, whilst, explicit knowledge is articulated and can be specified in writing, drawings, computer programs and others.	(Nonaka et al. 1995)
2	Explicit knowledge is for everyone to find and use but tacit knowledge separates the masters from the common.	(Lawson et al. 1999)
3	All tacit knowledge is procedural although not all procedural knowledge is tacit.	(Stermberg et al. 2002)
4	Tacit knowledge has been characterized as personal difficult to articulate fully, experience based, contextualized, job specific, held within, both known and unknown to the holders, transferred through conversation and narrative, and capable of becoming explicit knowledge and vice versa.	(Gourlay 2002 and 2004)

Knowledge that is tacit, not easily accessible or scarce is often considered more valuable (Cai et al. 2008). In spite of conceptual differences tacit knowledge is considered to be a very valuable form of knowledge (Nonaka 1996; Bouthillier et al. 2002). There is a widespread agreement that tacit knowledge is an important phenomenon (McAdam et al. 2007). It is strategically important to capture and codify tacit knowledge and put it in a common place where all the organization should have access (Goswami 2008). In today's changing environment there is a severe need to make the tacit knowledge explicit particularly to make KM initiatives successful (McAdam et al. 2007). The ability to create tacit knowledge and to continue to learn from it is considered as a competitive advantage because interactive knowledge developed today becomes the core knowledge of tomorrow (Zack 1999).

3.1.1 Explicating the Tacit Knowledge

There are two schools of thought regarding externalization and codification of tacit knowledge. One's view espouses that tacit knowledge must be made explicit for sharing and other regards tacit knowledge as always tacit. It is a fact that all articulated knowledge is based on an

unarticulated and tacitly accepted background of social practices. It can be made explicit and vice versa. The tacit knowledge constitutes of what we know and is difficult for the organizations to fully benefit from it (Stenmark 2001) but still there surpassed lot of efforts in research to make tacit knowledge explicit. Goswami argued that to large extent, the hidden tacit knowledge can be codified and made explicit (Goswami 2008).

An individual possesses knowledge by sheer virtue of his being associated with organization and is tacit in nature until his associates come to know about his that particular knowledge (Goswami 2008). For explicating the tacit knowledge we have to recognize the nature of knowledge possessed by individuals and communities within organization. Then obviously its quantum, vitality, captureability, shareability and storeability have to be evaluated. Almost 80% to 90% of an organization's valuable knowledge is considered to be in tacit form (Wah 1996b; Daft 2008). There are many problems for the organizations to take full benefit of tacit knowledge. There are significant technical and cultural barriers in capturing tacit knowledge and making it explicit (Conklin 1997). Documentation of knowledge is not a matter of rule, but a matter of ability (i.e. how to articulate the knowledge) even to greater extent, a matter of willingness of the parties involved (Renzl 2008. Lodhi 2006). Tacit knowledge is by definition personal and holder might not be willing to make it explicit because he might lose his position by making it explicit. Being knowledgeable in a particular area is considered personal power. The first problem that is likely to crop up is unwillingness of the owner of the knowledge to part with it. The second problem would be when the owner is willing to articulate it but the recipient is unwilling to absorb (Goswami 2008). Tacit knowledge sharing intention does not necessarily lead to tacit knowledge sharing behavior unless there are certain moderating effects (Yang et al. 2009). The contents of the knowledge are also distorted as they move from the originator (Goswami 2008). In short, explicit knowledge can be easily captured and shared (Daft 2008) but to make tacit knowledge explicit and to share it is a difficult task (Stenmark 2001) because:

i) people might not necessarily be aware of tacit knowledge they possess,
ii) at personal level they may not need to make it explicit, and
iii) they may not be willing to give up the competitive advantage.

The research opines that these problems can be overcome. The explicating of tacit knowledge requires a supportive environment and appropriate tools. In order to overcome individuals' reluctance to share tacit knowledge rewards and knowledge friendly culture can be adopted (Renzl 2008). Trust in management also synergizes knowledge sharing through

reducing fear of losing one's unique value and improving willingness to document knowledge (Renzl 2008). A peer to peer (P2P) knowledge sharing system promotes knowledge sharing in form of document sharing, idea and experience sharing, and professional judgment sharing. It provides powerful tools to support and boost knowledge sharing and explicating activities in organizations (Wang 2008). Organizations can require and reward managers for providing support to employees in knowledge sharing i.e. emphasizing on sharing "lessons learned" instead of "mistakes made" (Wang 2008).

3.1.2 Leveraging Tacit Knowledge

Tacit knowledge is created through interactive processes and mutual interactions of people. Leveraging knowledge through attention to the source of tacit knowledge, the people, is the effective way to drive success (Ghaziri, et al., 2005). To acknowledge individuals' role in tacit knowledge sharing and documentation is crucial (Renzl 2008). There are many tools and techniques developed by researchers in order to capture and share the tacit knowledge. The techniques like: on site observation, face to face efforts for codification, display systems, consensus decision, think aloud, repertory grid, nominal groups, Delphi method, black boarding, process models etc. are common tools for problem solving. Tacit knowledge sharing models, like other KM tools, are also used for solving problems. Particularly the decision making systems can be improved by the process modeling of tacit knowledge sharing. But there is little research done on interpersonal knowledge sharing (Cai et al. 2008) and it is justified to believe that much remains to be studied in this context (Wang 2010).

3.2 THE ADEQUACY OF PREPAREDNESS IN BANKS TO BUY THE IDEA OF KM

The contribution of the banking and financial sectors, being fundamental drivers of innovation, to KM concept and applications is of specific value, especially concerning the leverage of intellectual capital. Although the banks could not appreciate the importance of KM in past but they have started appreciating the knowledge as most significant and valued asset that can lead them to better performance (Tan et al. 2010). Bankers are now recognizing the relevance and importance of knowledge sharing. Knowledge intensive organizations like banks are increasingly implementing KM Systems to drive forward their strategies and improve performance (Kridan et al. 2006). No doubt that an effective adoption of KM can lead the banking industry towards better financial performance (Chiran, 2008).

Sufficient IT support is available to develop and KM systems in banks. Hardware, software, networking, internet, intranet, Decisions Support Systems, CRM systems, etc. are reasonably able to effect the ideas of KM in banking. The answer to basic question before bankers, that why individuals should contribute knowledge (Ranzl 2008), can be found through management initiatives for KM. There are apprehensions of the adequate preparedness of the banking industry in adopting KM practices. But it is quite clear in research about the willingness of the banks to vigorously pursue knowledge based effective credit risk management mechanism by visualizing magnitude of credit risk. The banks want, somehow, to curtail the growth of mounting non-performing loans (Karunakar et al. 2008).

Promoting knowledge sharing within the banks is an increasingly important challenge for managers (Cai et al. 2008). The know-how, such as to how to interact with customer what information to obtain and what proposal to make to successfully conclude the deal, needs to be formulated into tangible knowledge in banks (Ito 2004). In order to document the processes that lead-up to closing a deal of loan with customers (Ito 2004), more support is needed in terms of environment, structure, people, technology, goals and objectives (Kridan et al. 2006). Valuable human and knowledge resources will be wasted unless management openly accepts to support the efforts to gather, sort, transform, record and share knowledge in banks (Haslinda 2009). Little deliberation can unveil the shareable knowledge objects, possessors, possible recipients, use and usefulness of tacit knowledge in banks. It is the future of the bank not the past or present that is the goal of KM (Ghaziri et al. 2005). Decision making in banks needs to be supported by real-time information in order to improve quality and shorten the time (Leung 2010).

KM is process activity and can be divided into sub processes i.e. knowledge creation, knowledge sharing, knowledge storage and knowledge application (Hung 2009). Logical and non-logical knowledge processes (i.e. for which you have reasoning and for which you might be unable to give reasoning) both are important for decision making in banks (Hensman et al. 2011). Banks can incorporate and embed KM processes in the core processes of bank through technology so as they play a role of catalyst in the efficiency of processes. Available technologies are able to facilitate knowledge creation and can connect people with contents and people with other people (Vencatachellum et al. 2008). There is variety of KM tools to solve business problems and the process modeling is one of the popular and simple KM tools hence solution to the issue of NPLs can also be modeled. Before modeling any process the understanding of the very process and identification of agents of the process is necessary.

3.3 THE PROCESS OF LOAN-RECOVERY-LOAN

Loaning is business of banks hence loan-recovery-loan is logical process of banks. Credit personnel lend money and recovery personnel recover it. The process runs in a loop format. Banks deal in documents and explicit form of knowledge sharing is essence of the process. Simple understanding can be formed from a visual Figure 3.1.

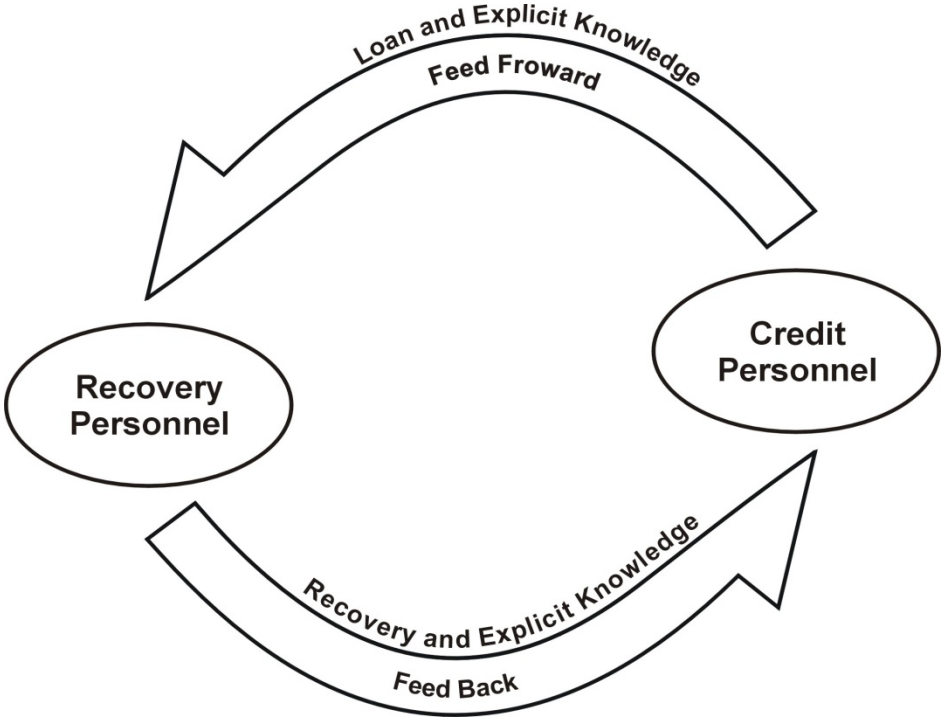

Fig. 3.1: Loan Process

Loan and recovery are the basic and crucial activities of banks. These are performed explicitly on a concurrent circulatory loop format. The loan and recovery has logical relation and are highly interdependent functions. Contemporary banking has mechanistic approach towards the process. But with developments in technologies and a nexus of new disciplines like KM, the process will have to have some harmony. The banks have to shift from mechanist to holistic approach. The process has to be enriched by unarticulated and tacit knowledge based on social practices. It requires loop of tacit knowledge. By incorporating the tacit knowledge new look of the process will be like a Figure 3.2:

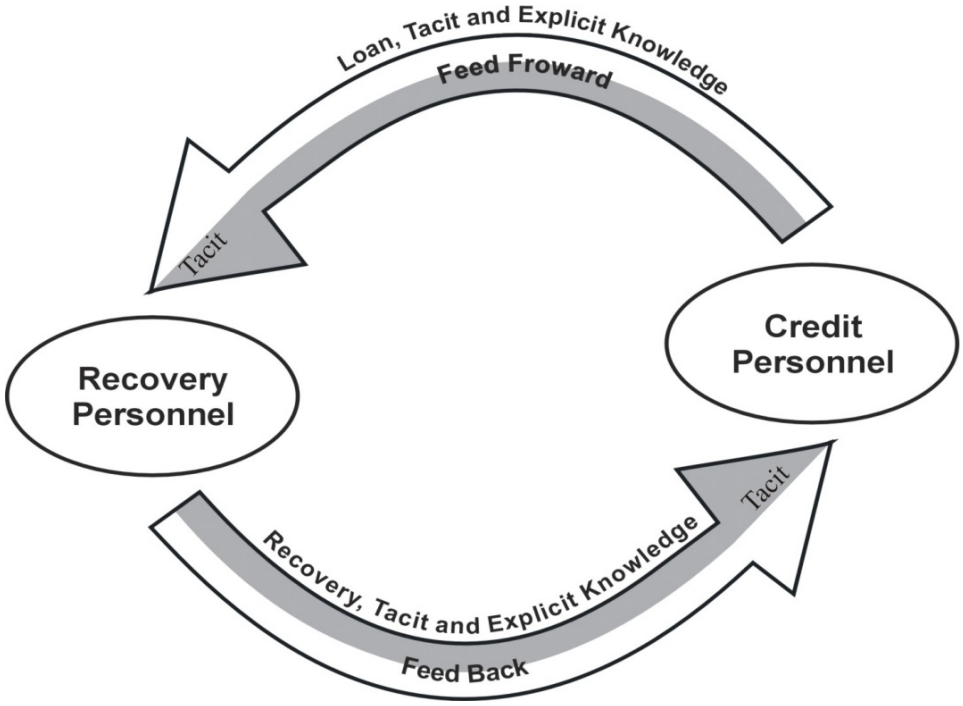

Fig. 3.2: Loan Process with Tacit Knowledge Loop

The process depicted in Figure 3.2 have additional loop of feed forward and feed back of tacit knowledge along with the existing process of loan-recovery-loan. The representations in Figure 3.1 and Figure 3.2 are higher abstractions of the processes. In real life these processes are not that simple as shown above. They involve number of variables and are a bit complex. Therefore we have to unfold it further and have to determine the factors material to the process and model them in more practical and practicable manner.

3.4 THE DYAD OF INTERDEPENDENT KNOWLEDGE CONTRIBUTORS AND RECIPIENTS

Knowledge management is not just a bunch of isolated facts stored in documents, knowledge basis or repositories. It is shaped by social human factors that require the involvement of knowledge contributors and knowledge recipients (Ghaziri et al. 2005). The process of developing and deploying knowledge is not static. It can only be effective within communities of practice (Williams 2006). Communities of practice are a group of people who have common tasks, interact and share knowledge with each other. They are, in fact, informal structures within and outside organizations that bind people together through informal relationships and the sharing of expertise and experience (Desouza 2003). Communities of

practice-being people together from different departments, to share ideas, involve the process of tacit knowledge sharing and development of informal networking (Bouthillier et al. 2002). As such, they are effective tools for creation and sharing of organizational knowledge (Wang et al. 2008). Communities where all members have same technical goals, motivated by a common interest, organized on a flat hierarchy, receptive to innovation make the implementation of KM approaches successful (Weber 2007). Since most of commercial banks rely heavily on social processes for KM, they need to make better use of communities of practice (Vencatachellum et al. 2008).

Credit and recovery personnel are two groups in banks, which make a dyad and have dependence on each other for resources such as information about tasks, information about process of previous tasks, work skills, and knowledge needed to complete the tasks. Credit-risk evaluation is very important and challenging job to financial institutions (Matoussi et al. 2009). Credit personnel in banking are in context of credit evaluation. Loan sanctioning and contextualizations are central elements in solving problems of recovery. The relationship between context and the sharing of tacit knowledge is of strategic importance to the success of recovery (Angier et al. 2001). Recovery personnel effect the recovery. The job of recovery personnel is dependent and stated as function of decisions of credit personnel. They have continuous interaction with different communities within and outside banks. They are source of tacit knowledge relevant to credit decision making. Researchers have provided considerable evidences over the years for co-existence of these two communities in banks (Cai et al. 2008). Therefore any solution to the problem of NPLs, based on the study of the dyad of credit and recovery, is likely to be lasting.

The job of recovery and credit personnel is interdependent and interrelated hence the study of this dyad is vital for banks. People, by nature, try to maximize their gain and minimize their loss while sharing knowledge (Cai el al. 2008). Therefore knowledge sharing behaviors are derived by maximizing gains. The counterparts of a dyad under study are not in competition and sharing knowledge goes in their mutual benefits. The dyad will have knowledge sharing behavior because it put them both in win win situation. Most of the banking functions are interdependent and the individuals share knowledge when they need help of each other and expect new knowledge in turn (Huang et al. 2010). The contents and objects of tacit knowledge of recovery and credit personnel can be categorized, described, modeled, mapped and embedded in rules of credit decision making. Recovery personnel and credit personnel have Sharable Knowledge Objects (SKOs) and their usability. They can also give relevancy and utility ratings for their own SKOs as well as that of the counterparts (Wang et al. 2008). These are

enough plausible reasons for willingness of possessors and recipients for knowledge sharing.

Profiles based on tacit knowledge that are identified by practice and are considered more trust-worthy than the espoused theory based descriptions (Stenmark 2001). NPLs which adversely affect the financial performance of banks are also a resultant effect of clearly identifiable interdependent processes of the dyad under study. The dyad holds tacit knowledge about the problem and its solution. It is important what is being said and done and how it is being said and done? Therefore to identify what information to tap, from whom, for what purpose, and how it is to be tapped is important too. It further depends on the right mix of technological, social, human and organizational elements (Ghaziri et al. 2005). What is important is to give the dyad room and space to talk to each other as they generate knowledge at individual level. Unless they talk about and share what they know, knowledge will remain untapped (Desouza 2003). To be able to share tacit knowledge, the possessors of it after being willing, find a way to express the knowledge. Therefore we look for a way the dyad can express it tacit knowledge.

3.5 NEED FOR THE TACIT KNOWLEDGE SHARING MODEL

The bank loans are either successfully recovered or become bad. The bad loans result into loss to the banks. Therefore recovery is very important but a difficult job. It cannot be ensured or improved overnight with any technology. It can be improved by quality of judgment of customer, by the bank, at the time of sanction of loan which speaks in terms of recovery. More the errors of judgment more will be the problems of recovery (i.e.NPLs). Hence both the problem and the solution depend on the quality of credit decisions by credit personnel at the time of sanction. A tacit knowledge sharing model based on the credit and recovery processes which could improve the quality of credit decisions is needed. The model should help to decide what contents of knowledge needs to be collected, from where and about which attributes and variables (Routio 2007) to improve the quality of credit decisions. Various KM models for banking studied in Chapter 2 focused on certain general aspects. Material details are missing from these models. Therefore a model based on the logical loan process and tacit knowledge of communities of practice has been developed.

3.6 TACIT KNOWLEDGE SHARING MODEL (TKSM)

Borrowing side of the bank is known as liability and lending as asset and our study pertains to the asset side. We, therefore, conceived and constructed a model based on tacit knowledge of relevant communities dealing in assets of banks i.e. recovery personnel and credit personnel. These communities are major players of the processes of asset side of banks. They perform separate but mutually interdependent functions. Loans (the assets of banks) are always exposed to credit risk. Credit risk contains two sources of uncertainty: the likelihood of default and severity of loss. (Smithson et al. 2000). The model we constructed (Figure 3.3) is meant for control of risk of likelihood of default.

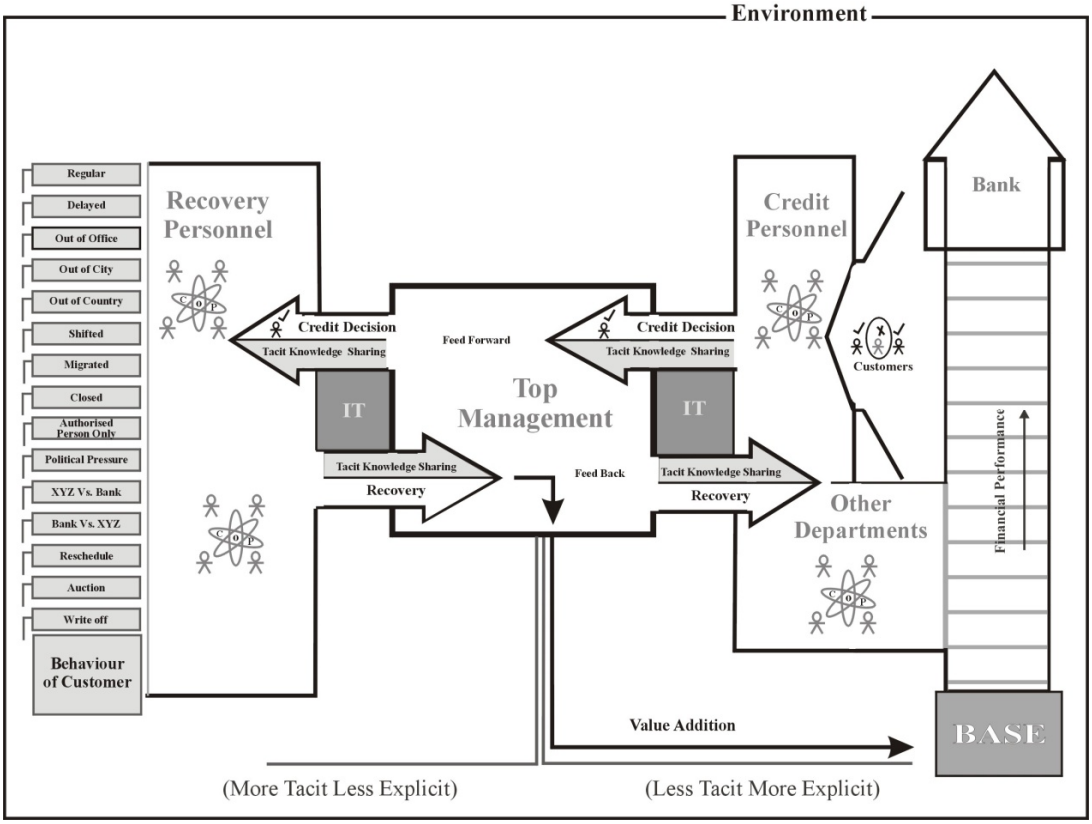

Fig. 3.3: Tacit Knowledge Sharing Model (TKSM) for Banks

We graphically demonstrated the logical process of loan-recovery-loan in the environment of banks along with tacit knowledge sharing. The demonstration is based on interdependent interaction of credit and recovery personnel with an indicative post disbursement behavior of customers and communities related to the customers. The sharable knowledge objects or contents and knowledge sharing, storage, retrieval, use and reuse have been presented like a real life activity model. Due role of IT (tools and

infrastructure) is also a visualized part of the model. Implementations of organizational memory systems normally fail for a variety of reasons including lack of tools which may enable the organizations to capture and reuse knowledge (Conklin 1997).The IT compartment of the model indicates that there should be an accessible memory with certain filtering and documentation systems. The act of credit decision by credit and voluntary concurrent knowledge capturing and sharing activity of recovery personnel were able to attained focus in the model depicting the ultimate performance of a bank. A bank is, in fact, based on the value additions by effectiveness of top management and feedback of recovery personnel. Recovery personnel recover the money lent by a bank along with premium of the bank. The premium is profit of a bank and adds value to owners' equity. The model also demonstrates the value addition by way of contribution of management and recovery personnel to the base of a bank. More simply, the model demonstrates that there are two communities of people in banks who possess certain important tacit knowledge which is shareable and if it is actually shared the quality of future credit decisions will be better and resultantly the recovery of loans (i.e. NPLs will be controlled) and financial performance of banks will be better. To be confident in this graphical representation, an empirical study to check the accedence of the community of practice also becomes necessary hence the relevant constructs of the model are discussed below to proceed for empirical evidence.

3.7 CONSTRUCTS

We recall that banking is a business of loans. Credit decisions are regular feature of banks. Quality of credit decisions has direct relation with recovery of loans and recovery has direct relationship with financial performance of banks. Credit decisions are the knowledge based judgments of the bankers about the customer and transaction. Tacit knowledge of the bankers has vital role in ensuring the quality of credit decisions. Therefore tacit knowledge affects the financial performance of banks through the mediation of quality of credit decision. We have selected important variables contributing towards the performance of the banks. Research regarding variables of credit decisions is labeled as C,s of lending (Rose 2001; Karunakar et al. 2008; Nagarajan 2009; Yeung 2009). There is a large number of variables labeled as C,s of lending. We have focused some of these variables (i.e. variables core to the credit decisions and materially affected by tacit knowledge sharing).

Credit decision of poor quality, willful default, siphoning off funds, and lack of co-ordination between financial institutions, are inter alia factors

contributing towards non-performing loans of banks (Karunakar et al. 2008). As a part of relationship banking, bank collects confidential borrower-specific information through processes like screening and monitoring (Yeung 2009). It is basic principle of lending to avoid NPLs at the nascent stage of credit consideration by putting in place appropriate credit appraisal mechanisms (Karunakar et al. 2008). It is planned to incorporate the tacit knowledge in appraisal mechanisms. To evaluate the results of tacit knowledge, it is necessary to assess the impact of it on organizations' performance. The assessment of impact of knowledge sharing on performance is one of the most challenging issues in knowledge management (Zaim et al. 2008). While accepting this challenge we have taken constructs of tacit knowledge and financial performance in the context of commercial banks along with the mediating constructs of credit decision and recovery of loans from 6 C's of lending (Rose 2001; Nagarajan 2009). Insight of these constructs may be noticed in following section.

3.7.1 Tacit Knowledge Sharing

To share the tacit knowledge is seriously recognized as a critical issue both by academia and the business community (Lin 2007). Importance of tacit knowledge is established in literature beyond doubt. Leveraging tacit knowledge in a way of sharing has become inevitable for the organizations to have competitive edge over others. Banking is highly leveraged, sensitive and competitive business. Exploitation of tacit knowledge, in banking in a systematic manner, is a matter of vital importance. These intangible assets which can help employees to optimize their performance must be exploited (Wall et al. 1999). But there is a gap in the literature to assess the impact of tacit knowledge on financial performance. The banks must exploit client's relational knowledge, banking processes embedded knowledge, and credit/recovery strategy related knowledge of relevant internal and external communities. It must develop those intangible assets which create maximum value (Wall et al. 1999). Hence we opted the construct of tacit knowledge sharing to indicate its relation with financial performance of banks and to shed light on its importance and existence in banks.

3.7.2 Credit Decision

Decisions relating to the marketing, processing, sanctioning, securing, disbursement, documentation etc. of credits are known as credit decisions. The credit decisions have many constituents but keeping in view the scope of

our study we reiterate below the four major parts of credit decision as discussed in Chapter 1:

i) Judgment about capacity of the customer to pay back the loan. This part is quantitative hence objective.
ii) Judgments about willingness of the customer to pay back the loan. This part is qualitative and subjective.
iii) Judgments about purpose of the loan. It is qualitative and subjective.
iv) Judgments about identity of the customer (loanee). It also is qualitative and objective.

In literature number of Cs of lending varies from 2 Cs of lending to 9 Cs of lending but capacity is always the first C. Therefore quality of judgment of capacity of customer to pay back the loan is first construct core to credit decision. Arguments of Ahmed (2010) that the repayment of loans mainly depends on proper utilization of the loan amount, supply of quality loans, and willingness to repay establish the vitality of willingness of the customer to pay back the loan and purpose of loan. Identification of the loanee is on top of the all. These are four core factors to establish the claim of any bank against the customer.

3.7.3 Recovery of Loans

Recovery of loans, in fact, guarantees the survival of banks and is translated into financial performance. Complete and timely recovery of loans by commercial banks is the sin qua non (Ahmad 2010) as non-payment or late payment (i.e. NPLs) leads the banks towards classification of loans (Faruqi 2005). The NPL's have deleterious impact on the financial performance of banks in many ways (Karunakar et al. 2008). Recovery of loans is considered as one of the most important parameters in the measurement of the banks performance (Karunakar et al. 2008). The success of commercial banks to maintain healthy profit growth depends on recovery of loans (Ahmad 2010). Recovery at higher abstraction and completeliness and timeliness of recovery at operational level are also mediating constructs of the model.

3.7.4 Financial Performance

Improvement of quality of loan assets is the true test of the improved efficiency of banking system (Ahmed 2010). High rate of learning to manage information and convert it into knowledge and use that knowledge to improve

performance is crux of the matter (Haslinda 2009). Hence financial performance is the final construct of the model.

To be precise, the model is based on following asset related core constructs of banking:

- Tacit Knowledge Sharing (TKS).
- Credit Decision (CD)
  - Quality of Judgment of the Capacity of customer to pay back the loan (QJC)
  - Quality of Judgment of Willingness of customer to pay back the loan (QJW).
  - Quality of Judgment about Purpose of loan (QJP).
  - Quality of Judgment of Identification of the customer (QJI).
- Recovery (RC)
  - Completeness of Recovery (CR).
  - Timeliness of Recovery (TR).
- Financial Performance (FP).

CHAPTER 4

RESEARCH METHODOLOGY

Degree of confidence posed in research depends on the approach and methodology followed by the research. Captioned chapter deals with issue of research methodology. It is divided into two sections. First section deals with design of descriptive study and second section with that of empirical.

It is a cross sectional research study. It solves a question of theoretical nature, and at the same is close to and conducted in real banking environment. The research has two parts. Part one is based on literature review hence descriptive and part two is survey of community of practice to check accedence of the model developed through descriptive study therefore empirical.

4.1 DESCRIPTIVE STUDY

We adopted the course of literature review for developing and proposing the model. As a part of literature review we have extensively reviewed the published research in the area of: i) knowledge management (with a focus on tacit knowledge sharing) and ii) banking (with a focus on asset side of the banks). We have also evaluated the work of KM in the research area of banking with particular focus on the practical applications of KM in banking. The concepts and literature of explicit knowledge, tacit knowledge, knowledge creation, knowledge sharing, knowledge retention, knowledge use & reuse, knowledge repositories, organizational memory, organizational wisdom and the knowledge capturing & sharing tools and techniques have been revisited in the specific context of the study. The research models of KM for banks have been critically reviewed from view point of purpose of model, adequacy, precision, usefulness and practicability. The level of abstraction of the models has also been evaluated. The constructs, relations among constructs and the flow processes indicated in the contemporary models have been examined carefully. It has been examined as to whether any model provides workable solution to the problem of NPLs. A fair and just critique has been placed on record. The study reached to a conclusion that none of the existing models offers any direct solution to the problem of NPLs.

A graphical activity model has been developed based on the logical flow of the banking transactions. Model demonstrates the loop of loan-

recovery-loan along with relevant departmental links, behaviors of relevant communities and processes. The model is juxtaposed against exiting KM research models for banks. It contains many features that distinguish the model from contemporary ones. Finally, in order to test usefulness, scope, precision and simplicity practically in real environment of banks, we developed relational hypothesis (i.e. the statements which describe a relationship between variables). TKS, CD (JQC, JQW, JQP, & JQI), RC (TR & CR), and FP are variables used to develop the model. These variables have already been discussed in Chapter 3 in detail.

There are some other variables which are also considered as related to the processes modeled. All other variables, except stated above, are controlled. There are three common techniques to deal control variables. First is choosing variables in the hypothesis in such a way, that the influence of disturbance variables, is dealt with as explaining factors and not as random variation (Routio 2007). Second if systematic influence of other variables is known before hand that influence can simply be eliminated by making a suitable correction (Routio 2007). Third is selection of variables in such a manner that control variables have no material impact on variables to be measured. In subject research, the factors of departments other than credit and recovery are explaining factors and not the source of random variation hence are controlled. The variables selected for measurement have been selected in such a manner that other variables have no material impact on variables to be measured.

There is a really dearth of empirical evidence and research studies that can establish a casual relationship between the tacit knowledge and organizational performance (Zaim et al. 2008). In future, the research has to adopt empirical approach in examining the effectiveness of KM technologies for exploiting tacit knowledge (Nyame-Asiamah, 2009). Present gap in the area of knowledge sharing inspires to find empirical evidence to support the descriptive study. The empirical research that should encourage management initiatives to promote tacit knowledge sharing in banks (Renzl 2008). Therefore it necessitates to empirically examining the model developed through descriptive study before reaching any inference.

4.2 EMPIRICAL STUDY

The empirical part of the study has been conceptualized at two levels i.e. abstract level and operational level shown as Figure 4.1 and Figure 4.2 respectively. The abstract level explains relationships in condensed form, whereas, operational level explains the relations among variables in detail. The empirical part of study is to support the descriptive study. We developed a tacit knowledge sharing model for banks that is aimed to improve the quality of credit decisions for controlling the NPLs at nascent stage. The researchers are convinced that the method of hypothesis was originally developed for descriptive studies which aspire to get factual knowledge about the object of study (Routio 2007). Therefore the relations among the constructs used in model have been hypothesized. The relationships have been hypothesized at both levels. Condensed hypothesis at abstract level provide overview of operational level at a glance. Operational hypothesis form a set of hypothesis for empirical testing.

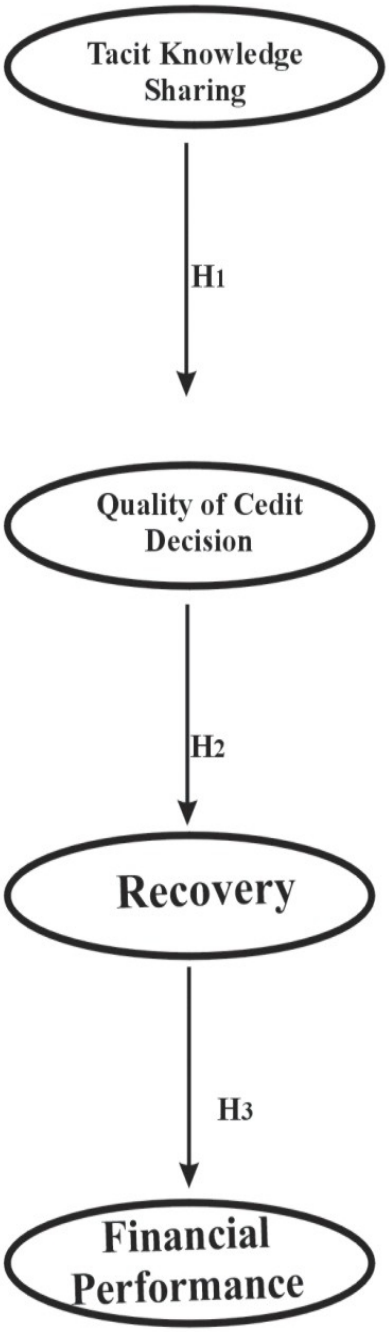

Fig. 4.1: Abstract Level Framework

Simplified form of relations in tacit knowledge sharing, credit decisions, recovery, and financial performance of a bank has been demonstrated to develop an understanding at initial level in Figure 4.1. The hypotheses indicated in the figure have already been described in Chapter 1. In fact, credit decision, and recovery are composite constructs. To study them superficially is not fair with the subject therefore we further uncover and reach to the constituents of the constructs of credit decision and recovery in Figure 4.2.

Operational Level

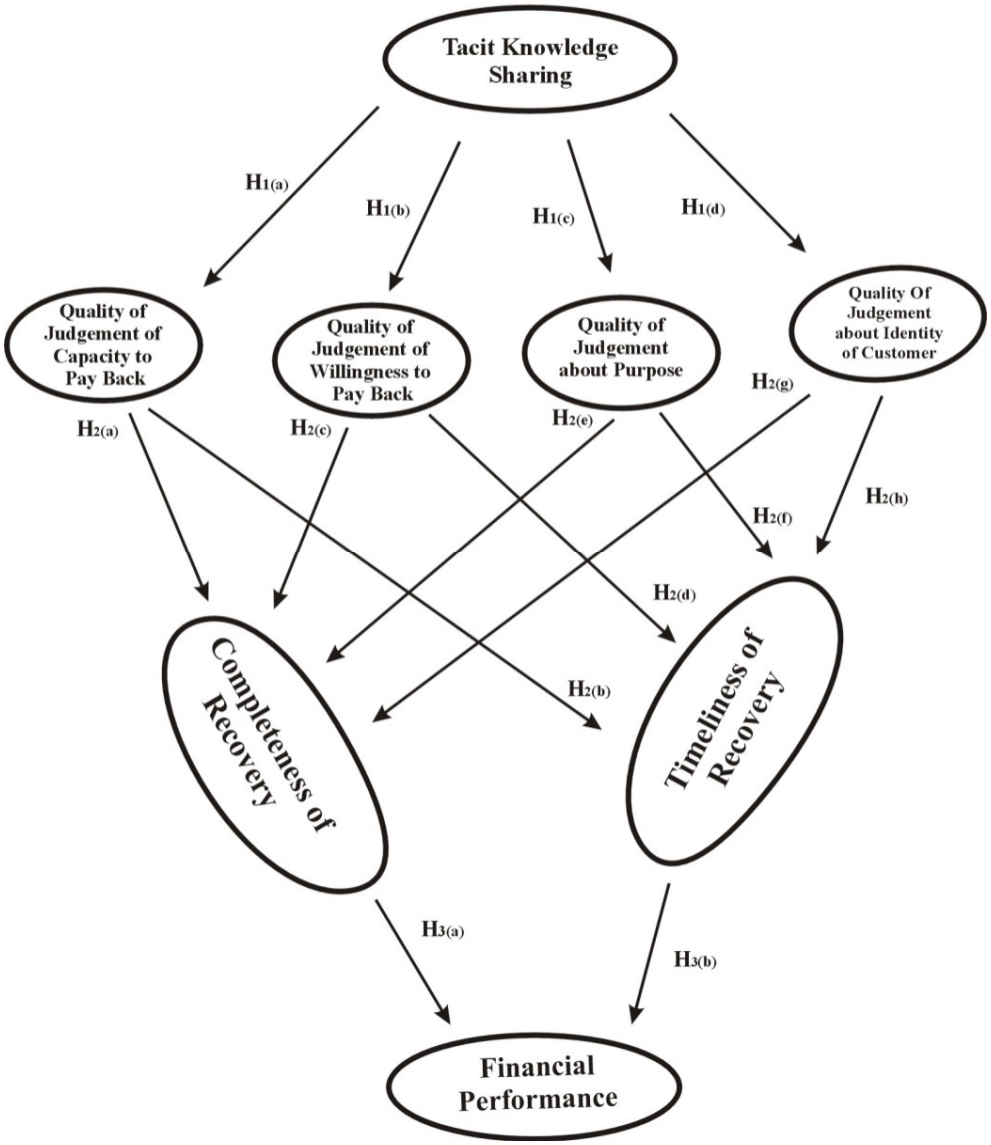

Fig. 4.2: Operational Level Framework

Figure 4.2 is an insight of the abstract level and is true picture of practical operations showing testable relations among the variables. These variables come of real life situation and conform to known banking practices. Its closeness to the reality enhances the scope of the study. We have formed research hypothesis as indicated in the Figure 4.2. Formally worded research hypothesis are given below.

4.2.1 Research Hypothesis

$H_{1(a)}$ Greater the tacit knowledge sharing between recovery and credit personnel better will be quality of judgment of capacity to pay back loan by the customer.

$H_{1(b)}$ Greater the tacit knowledge sharing between recovery and credit personnel better will be quality of judgment of willingness of the customer to pay back loan.

$H_{1(c)}$ Greater the tacit knowledge sharing between recovery and credit personnel better will be quality of judgment of purpose of loan.

$H_{1(d)}$ Greater the tacit knowledge sharing between recovery and credit personnel better will be quality of judgment about identification of the customer.

$H_{2(a)}$ Better the quality of judgment of capacity of the pay back of the customer complete will the recovery of loans.

$H_{2(b)}$ Better the quality of judgment of capacity of the pay back of the customer in time will the recovery of loans.

$H_{2(c)}$ Better the quality of judgment of willingness to pay back of the customer complete will be the recovery of loans.

$H_{2(d)}$ Better the quality of judgment of willingness to pay back of the customer in time will be the recovery of loans.

$H_{2(e)}$ Better the quality of judgment about purpose of loan complete will be the recovery of loans.

$H_{2(f)}$ Better the quality of judgment about purpose of loan in time will be the recovery of loans.

$H_{2(g)}$ Better the quality of judgment about the identification of customer complete will be the recovery of loans.

$H_{2(h)}$ Better the quality of judgment about the identification of customer in time will be the recovery of loans.

$H_{3(a)}$ Complete the recovery of loans better will be financial performance of a bank.

$H_{3(b)}$ In time the recovery of loans better will be financial performance of a bank.

The constructs have been measured through different indicators (i.e. statements) at 7 point Likert type measurement scale. Instrument of measurement has been developed by the researches in the manner detailed below.

4.2.2 Instrument

For a scientific research it is necessary to use well validated and reliable measures. Although many measures have already been developed for important organizational concepts and their psychometric properties have been established by developers but we could not find that such measure suitable to the study. This being the unique study of developing a model based on tacit knowledge sharing in banks, no existing instrument, measuring the constructs under study, was found. Therefore, a new suitable instrument was developed i.e. a seven point Likert type scale "1" indicating the least favorable degree of agreement and "7" the most favorable degree of agreement. Following was the scale in exact:

1 = Very Strongly Disagree
2 = Strongly Disagree
3 = Disagree
4 = Neutral
5 = Agree
6 = Strongly Agree
7 = Very Strongly Agree

For developing the instrument we followed a five step criteria given by Radhakrishna (2007). In drafting the questionnaire, we followed question hierarchy a suggested by Emory (1970). Based on literature review and the researcher's experience in the field of financial sector, multiple measurement indicators were identified. In fact, 14 investigating questions were converted into 24 measurement questions. We also developed 23 further questions (additional indicators) to measure the very existence and shareability of tacit knowledge in recovery and credit processes. The additional indicators have been included to confirm that the dyad under study indeed possess shareable

tacit knowledge. As no prior surveys were found that measured these eight constructs of banking, the questions have been designed by the researchers. The instrument was used to record the responses from interrelated, interdependent dyad of agents of the credit and recovery processes.

The official language and/or medium of instructions in banks is English and bank officers are mostly graduate or post graduates, therefore, medium of communication is English. The instrument is meant for securing information through direct undisguised questioning. The constructs measured can only be measured by self reports (Renzl 2008) hence the instrument is a self-reporting instrument. Having understood that the results of any research can only be as good as the measures that tap the concepts in the theoretical framework, the goodness of measure was tested. In order to be reasonably sure that the instrument we used in the research does indeed measure the variables that are supposed to and that it measures accurately, the questionnaire was evaluated by seven experienced bankers from view point of relevancy, adequacy, simplicity and clarity. How well the results obtained from the use of the measure fit the theories around which the test is designed can be seen from the results of the study in Chapter 5. The instrument is given as Annexure 2, however, summary of the constructs and the indicators is given as Table 4.1 below.

Table 4.1
Summary of Questionnaire

	Description/Constructs	**Question Numbers**
Section-1	**Personal Memoranda**	**1-10**
Section-2	**Research Questions**	**11-47**
1	TKS-QJC	11a-11d
2	TKS-QJW	12a-12e
3	TKS-QJP	13a-13g
4	TKS-JQI	14a-14b
5	QJC-CR	15
6	QJC-TR	16
7	QJW-CR	17
8	QJW-TR	18
9	QJP-CR	19
10	QJP-TR	20
11	QJI-CR	21
12	QJI-TR	22
13	CR-FP	23
14	TR-FP	24
14	TKI (Additional Indicators)	25-47

To draw any generalized inference population subject to study is of vital importance. Due care in selection of the population is integral part of the research. This subject also attained focal place in the study. It is not out of place to shed some light on this aspect.

4.2.3 Population

The research is based on population of 40 commercial banks (SBP 2009) scheduled with the central bank of Islamic Republic of Pakistan. Statistical data of the population has been collected from secondary sources. Forty (40) banks operating in Pakistan have total 7562 branches all over the country. There are 2260 branches of banks operating in four provincial capital cities (PBA 2010). Total persons employed in credit and monitoring departments are 19,263 (FBS 2008). In order to maintain uniformity of the data some adjustments have been made keeping in view the objective of the study. Due to remarkable degree of centralization in decision making for loans at headquarters of the banks (Yeung 2009, Huang et al. 2010) it was considered appropriate to conduct the survey in four provincial capital cities. Non-bank financial instructions and micro finance banks are out of scope the study. Bank wise population is given as Annexure 3

4.2.4 Pilot Study

In order to test the instrument a pilot study was conducted in Lahore. The responses of 30 bankers from different banks in Lahore were obtained. Descriptive statistics was also generated on SPSS. As the standard deviation of population was not previously known, the standard deviation of pilot study has been used for calculation of sample size. The value of Cronbach's Alpha reliability coefficient for all items was checked and found to be above 0.85 in all cases. The questions were reviewed on the bases of pilot study and after the necessary corrections based on feedback of pilot study; the instrument of measurement was finalized.

4.2.5 Sampling

Sample data has been used as a means of estimating the population parameters. Keeping in view centralization in decision making for loans at headquarters and geographical heterogeneity at province level, four provincial capitals were focused. In order to tap the bank to bank heterogeneity all forty banks have been taken into sample. Multistage

proportionate stratified random sampling design (i. e. probability sampling design with appropriate representativeness) is used. At first stage we selected all the forty banks (Annexure 3). At second stage we took sample from employees of credit and recovery departments through a statistical formula as given below. At third stage we took city wise proportionate sample of bank branches with replacement (Annexure 4). At fourth stage the sample was taken from individuals of each branch. The response of at least one credit and one recovery person from every sample branch was ensured to maintain the representativeness. The sampling design and the strata are relevant, appropriate, and meaningful in the context of the study.

We have calculated number of sample branches for sample number of persons in the proportion of total branches to total number of persons employed by using the unitary concept of mathematics. We find 314 persons to be investigated from 123 branches. In order to ensure the representation of all the forty banks the resultant fractions in cases of 10 bank have been treated as one (i.e. at least one branch of each bank selected in sample). The size of sample was adjusted as 133 branches. A stratified simple random sample with reasonable replacement has been drawn separately from all strata through a computerized random number generator. We obtained total 195 random numbers of branches with replacement of 62 branches only as against the sample of 133 branches without replacement (Annexure 4). Reasons to take the sample with replacement are:

- There might be non-credit/recovery branches.
- The branches might have been closed or shifted.
- The branches might not be willing to participate in the research.

Sample is based on the number of persons (as unit of analysis is individual) employed in the credit and recovery departments of banks. Sample size of 314 persons, based on standard deviation of pilot study was calculated by using following formula given by Malhotra et al. (2010).

$$n = \frac{\sigma^2 z^2}{D^2}$$

where

n = Sample Size
σ = Standard Deviation of Population
z = Value from Statistical Tables of z-Distribution at 95% Confidence Level
D = Minimum Possible Difference between the sample mean and the population mean

Putting the values in formula:

$$n = \frac{(1.36)^2 (1.96)^2}{(0.15)^2}$$

$$= \frac{1.8442 \times 3.8416}{0.0225}$$

$$= 314$$

In banking sector a large number of studies used non probability sampling chosen with personal judgment where the sample elements are handpicked and believed to be the representative of the population (Vencatachellum et al. 2008). Sizes of the samples also vary from one bank one branch to a large number. Keeping in view the study of Yang et al. (2009), that used responses from 306 employees in 102 Work-groups across 67 organizations in order to examine the roles that social capitals and behavioral control plays in tacit knowledge sharing and behavior among organizational members (Yang et al. 2009), to the ultimate satisfaction of the researchers (Emory 1980), sample was found to be an acceptable representation of the population.

4.2.6 Data Collection

In order to record the perceptions of both credit and recovery personnel, we have dispatched the instruments to each sample branch by mail. The questionnaires contained same items and indicators except the titles "For Recovery Personnel" on questionnaire meant for recovery personnel and "For Credit Personnel" on the questionnaires meant for credit personnel. Pakistan Post Office, Urgent Mail Service (UMS) i.e. the state owned postal service was considered appropriate because it is economical, track-able, reliable and speedy medium of communication. Two to three questionnaires were dispatched to each branch in the month of January 2011, through UMS followed by telephone calls. The questionnaires were sent under a covering letter with self addressed envelope. Subsequently, most of the sample branches were approached in person either by researchers or by the well informed representatives of the researchers. Few of the branches reported as non credit branches or the branches having credit functions based at specialized offices. Non-credit branches were replaced (as we have sample with replacement). The branches having credit function in specialized offices other than branch were asked to refer the questionnaires to relevant offices to

officers dealing the recovery and credit function of that particular branch in order to get true representative response. Some questionnaires were returned duly completed by post, some were followed over the telephone and were collected with little bit effort, yet some others were got completed after encompassing a lot of efforts. We thoroughly examined the questionnaires and found the responses as detailed below in Table 4.2.

Table 4.2
Summarized Position of Data Collection

1	Total Dispatched Questionnaires	314
2	Total Response	313
3	No Response	1
4	Invalid Because of :	20
	4.1 Page Blank	2
	4.2 Multiple Response by One Respondent	6
	4.3 Experience Less than 3 Years	10
	4.4 Mandatory Columns of Memoranda Incomplete	2
5	Valid Responses	293
6	Response rate	93.31%

To conduct large survey in the banking sector is considered a difficult job. The banks have scattered branch networks and specialized type of public dealing. They follow special code of conduct which is focused towards security and secrecy and access to the core departments like credit, recovery, foreign exchange, etc. of banks is difficult but despite of all that the response rate was quite satisfactory.

CHAPTER 5

ANALYSIS AND INTERPRETATION

As norms of research, the hypothesis framed in previous chapter, are being converted into statistically testable hypothesis. The symbolic notations used in the Figure 4.2 above have been used as identification of hypothesis.

5.1 TESTABLE HYPOTHESES

Hypothesis 1(a)

H0 The community of practice does not agree that due to tacit knowledge sharing quality of judgment of loan repayment capacity improves.

*H*a The community of practice at least agrees that due to tacit knowledge sharing quality of judgment of loan repayment capacity improves.

H0 : $\mu < 5.0$
Ha : $\mu \geq 5.0$

Hypothesis 1*(b)*

H0 The community of practice does not agree that due to tacit knowledge sharing quality of judgment of willingness to repay the loan improves.

Ha The community of practice at least agrees that due to tacit knowledge sharing quality of judgment of willingness to repay the loan improves.

H0 : $\mu < 5.0$
Ha : $\mu \geq 5.0$

Hypothesis 1*(c)*

H0 The community of practice does not agree that due to tacit knowledge sharing quality of judgment of purpose of loan improves.

Ha The community of practice at least agrees that due to tacit knowledge sharing quality of judgment of purpose of loan improves.

H0 : $\mu < 5.0$
Ha : $\mu \geq 5.0$

Hypothesis 1*(d)*

H0 The community of practice does not agree that due to tacit knowledge sharing quality of judgment of identification of customer improves.

Ha The community of practice at least agrees that due to tacit knowledge sharing quality of judgment of identification of customer improves.

H0 : $\mu < 5.0$
Ha : $\mu \geq 5.0$

Hypothesis 2*(a)*

H0 The community of practice does not agree that the better judgment of loan repayment capacity leads to complete recovery.

Ha The community of practice at least agrees that the better judgment of loan repayment capacity leads to complete recovery.

H0 : $\mu < 5.0$
Ha : $\mu \geq 5.0$

Hypothesis 2*(b)*

H0 The community of practice does not agree that better judgment of loan repayment capacity leads to in time recovery of loan.

Ha The community of practice at least agrees that better judgment of loan repayment capacity leads to in time recovery of loan.

$H0 : \mu < 5.0$
$Ha : \mu \geq 5.0$

Hypothesis 2*(c)*

H0 The community of practice does not agree that better judgment of willingness to repay the loan leads to complete recovery of loan.

Ha The community of practice at least agrees that better judgment of willingness to repay the loan leads to complete recovery of loan.

$H0 : \mu < 5.0$
$Ha : \mu \geq 5.0$

Hypothesis 2*(d)*

H0 The community of practice does not agree that better judgment of willingness to repay the loan leads to in time recovery of loan.

Ha The community of practice at least agrees that better judgment of willingness to repay the loan leads to in time recovery of loan.

$H0 : \mu < 5.0$
$Ha : \mu \geq 5.0$

Hypothesis 2*(e)*

H0 The community of practice does not agree that better judgment of purpose of loan leads to complete recovery.

Ha The community of practice at least agrees that better judgment of purpose of loan leads to complete recovery.

H0 : $\mu < 5.0$
Ha : $\mu \geq 5.0$

Hypothesis 2*(f)*

H0 The community of practice does not agree that better judgment of purpose of loan leads to in time recovery.

Ha The community of practice at least agrees that better judgment of purpose of loan leads to in time recovery.

H0 : $\mu < 5.0$
Ha : $\mu \geq 5.0$

Hypothesis 2*(g)*

H0 The community of practice does not agree that better judgment about identification of borrower leads to complete recovery.

Ha The community of practice at least agrees that better judgment about identification of borrower leads to complete recovery.

H0 : $\mu < 5.0$
Ha : $\mu \geq 5.0$

Hypothesis 2*(h)*

H0 The community of practice does not agree that better judgment about identification of borrower leads to in time recovery.

Ha The community of practice at least agrees that better judgment about identification of borrower leads to in time recovery.

$H0 : \mu < 5.0$
$Ha : \mu \geq 5.0$

Hypothesis 3*(a)*

H0 The community of practice does not agree that complete recovery leads to improvement in financial performance.

Ha The community of practice at least agrees that complete recovery leads to improvement in financial performance.

$H0 : \mu < 5.0$
$Ha : \mu \geq 5.0$

Hypothesis 3*(b)*

H0 The community of practice does not agree that in time recovery leads to improvement in financial performance.

Ha The community of practice at least agrees that in time recovery leads to improvement in financial performance.

$H0 : \mu < 5.0$
$Ha : \mu \geq 5.0$

Before testing these hypotheses, for which we used t-Test, it is meaningful to analyze the data in descriptive statistics. We find many dimensions to be useful to learn from the study. Analysis of responses geographically, community, gender, designation, experience, and item wise is worthwhile to comprehend the study.

5.2 DESCRIPTIVE STATISTICS

Descriptive statistics give an overview of the sample and the response to form an opinion in general about the adequacy, validity, reliability, and scope of the study. It demarks the framework of the study and helps the readers to appreciate the efforts surpassed to formulate the study.

5.2.1 Geographical Statistics of Responses

The research has been conducted in Islamic Republic of Pakistan. Pakistan. Pakistan has four provinces namely Sind, Punjab, Khyber Pakhtoon Khawah, and Balochistan. Capital cities of these provinces are Karachi, Lahore, Peshawar, and Quetta respectively. We conducted the survey in these four cities for the reasons already explained. Province/city wise responses have been summarized in Table 5.1.

Table 5.1
Province and City Wise Statistics of Respondents

Sr. No.	Province	City	Percentage	Responses
1	Sind	Karachi	54.95%	161
2	Punjab	Lahore	30.38%	89
3	Khyber Pakhtoon Khawah	Peshawar	8.53%	25
4	Balochistan	Quetta	6.14%	18
Total			**100.00%**	**293**

Karachi, the capital of Sind, is hub of financial and business activities in Pakistan hence number of banks and branches located in Karachi is more than other cities. Lahore being second, Peshawar third and Quetta is the fourth by numbers. Our sample and the response also follow the same order. Out of total valid responses 161 comes of Karachi, 89 from Lahore, 25 from Peshawar, and 18 from Quetta. If we look percentage response we find Karachi 54.95%, Lahore 30.38%. Peshawar 8.53%, and Quetta 6.14%.

5.2.2 Community of Employee Wise Statistics of Responses

The two communities studied from banking sector are credit and recovery personnel. The community wise response is also worthwhile to be analyzed as they are main agents of the processes modeled. They are in fact counterparts to each other. The response of the both the communities, has

been taken on equal basis. The statistics regarding the communities is given in Table 5.2.

Table 5.2
Community of Employee Wise Statistics of Respondents

Sr. No.	Community of Respondents	Percentage	No. of Respondents
1	Recovery Personnel	50.17%	147
2	Credit Personnel	49.83%	146
	Total	100.00%	**293**

Out of total 293 valid responses 147 responses represent recovery personnel and 146 credit personnel. These responses, if expressed in percentage, workout to be 50.17% and 49.83% for recovery and credit personnel respectively. Almost equal community wise response is effected that conforms to the theme of the study.

5.2.3 Gender Statistics

Pakistan is male dominated society therefore gender statistics might also be important for readers. We have studied the recovery and credit personnel as interrelated and interdependent professionals in the specific context of the study and did not consider the gender as source of any major variation. While drawing the sample the gender could not be taken as stratum. Still we find appropriate to give the gender statistics for interest of the readers. Table 5.3 contains the gender statistics of respondents.

Table 5.3
Gender Wise Statistics of Respondents

Sr. No.	Gender	Percentage	No. of Respondents
1	Female	12.29%	36
2	Male	87.71%	257
	Total	100.00%	**293**

Female and male respondents are 36 and 257 out of total 293 valid responses i.e. 12.29% and 87.71% respectively. The reflection of male dominance is visible from the statistics. However gender based unequal distribution does not affect the inference of the study.

5.2.4 Designation Wise Statistics of Respondents

Designation wise breakup of the responses is the most important and meaningful statistics for understanding the study in true spirit. As we wanted to tap response of community of practice hence true judgment and true representation of the community of practice is essence of the study. Our instrument contained mandatory notation that the respondents must have at least 3 years of working experience therefore the responses of the respondents having experience lesser than 3 years were dropped from the analysis. Operational level officers are considered as members to the community of practice. The responses of the top management like senior executive vice presidents and presidents of the banks were not recorded.

Two to three questionnaires were dispatched to all sample branches addressed to the branch manager leaving the selection of the concerned persons from credit and recovery to the convenience of the branch manager. This flexibility was given to the banks to make the survey more effective. The branches though treated equally in the study have natural variation of size and magnitude of functions depending on the bank and the location of the branch. The variation gave a good mix of seniors and juniors. We have been able get designation wise response as below in Table 5.4.

Table 5.4
Designation Wise Break-up Statistics of Respondents

Sr. No.	Designation	Percentage	No.
1	Heads of Departments	2.05%	6
2	Vice Presidents	3.41%	10
3	Assistant Vice Presents	5.80%	17
4	Branch Managers	7.85%	23
5	Managers of Credit and Recovery Departments	31.06%	91
6	Credit/Recovery Analysts	12.63%	37
7	Officers	37.20%	109
	Total	**100.00%**	**293**

We succeeded to tap the responses of 6 Heads of Department, 10 Vice Presidents, and 17 Assistant Vice Presidents. They are considered seniors among the operational management of banks. Branch Managers and Managers forming the middle level of operational management turned up to 23 and 91 respectively. Credit/Recovery Analysts and the Officers formed major chunk of valid responses i.e. 37 and 109. Percent breakup of the

distribution is 2.00%, 3.41%, 5.80%, 7.85%, 31.06%, 12.63% and 37.20% respectively. The researchers consider it fair for the study in hand.

5.2.5 Experience Wise Statistics of Respondents

Before drawing any inference from the statistics it is highly relevant to determine the dynamics of the respondents particularly concerning the experience. Experience wise statistics is the important breakup second to none of the above dimensions of responses. Experience and designation are normally considered as related but we are of the view that there might be certain variations as well. The communities we are looking for were expected to be relatively of younger age. This expectation is based on the peculiar context of the study. The survey was able record experience wise statistics as given in Table 5.5.

Table 5.5
Experience Wise Statistics of Respondents

Experience in Years	Percentage	No. of Respondents
3 – 5	39.59%	116
5 – 10	35.84%	105
10-15	8.53%	25
15 -20	6.48%	19
20 -25	3.75%	11
25 -30	2.73%	8
30 – 35	2.39%	7
35 -40	0.68%	2
Total	100.00%	**293**

The response of the youngsters dominates the figures. Majority respondents fall in the range 3 to 10 years of experience (i.e. 3-5 116 and 5-10 105 total 221). However, quite a few were having experience more than even 20 years also responded to enrich the study. We find it representative mix respondents.

5.2.6 Item Wise Analysis of Responses

The research used Likert type scale based multi item based instrument. It is fruitful to engineer the responses item wise. The responses can be further bifurcated hypothesis wise item wise. For convenience of the readers we presented the statistics in Table 5.6 in percentage.

Table 5.6
Item Wise Analysis of Responses

Sr. No.	Hypothesis	Very Strongly Disagree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Very Strongly Agree	Total
		1	2	3	4	5	6	7	
1	H1a	1.5%	4.4%	8.3%	14.6%	28.8%	28.2%	14.2%	100.0%
2	H1b	1.1%	1.9%	5.8%	13.2%	31.0%	29.5%	17.4%	100.0%
3	H1c	1.7%	3.0%	9.8%	14.2%	28.5%	27.5%	15.3%	100.0%
4	H1d	2.7%	3.4%	7.9%	13.4%	20.2%	26.0%	26.4%	100.0%
5	H2a	1.7%	4.1%	5.8%	10.9%	17.1%	38.9%	21.5%	100.0%
6	H2b	0.7%	1.7%	3.8%	8.5%	27.3%	28.7%	29.4%	100.0%
7	H2c	0.7%	1.4%	6.5%	11.9%	26.3%	33.1%	20.1%	100.0%
8	H2d	0.7%	2.7%	4.1%	7.5%	28.7%	29.7%	26.6%	100.0%
9	H2e	0.7%	2.0%	5.5%	11.9%	23.5%	34.1%	22.2%	100.0%
10	H2f	1.0%	1.0%	6.5%	7.8%	30.4%	27.3%	25.9%	100.0%
11	H2g	1.0%	1.0%	6.5%	7.8%	30.4%	27.3%	25.9%	100.0%
12	H2h	0.3%	2.7%	5.5%	11.9%	27.3%	27.3%	24.9%	100.0%
13	H3a	0.0%	1.4%	2.7%	8.9%	15.0%	33.1%	38.9%	100.0%
14	H3b	0.7%	1.4%	1.0%	5.8%	16.0%	30.0%	45.1%	100.0%

The analysis depicts fairly good picture of the response rates item wise hypothesis wise. All hypotheses were supported with high rates of agreement. Few disagreement or neutrals are just a natural variation in the context of human social behaviors. In the range of disagreement or neutral we find maximum 14.6% neutral as against H1a. This analysis helps to depose higher degree of confidence in the study.

5.3 APPLYING t-TEST

The data collected has two aspects one aspect is meant to support the hypotheses and the other concerning the additional insight of the study. Both the data aspects have been dealt separately. As first step, we tested the hypotheses and as next step the additional insight.

5.3.1 Testing Hypotheses: the t-Test

The model simply states that if there is tacit knowledge sharing among credit and recovery personnel the performance of a bank will be improved. We opted one sample to estimate population parameters. Purpose of the study is to formulate certain statements about relationships of selected variables. The statements have already been formulated in null hypotheses in section 5.1. The appropriate test for the analysis is t-Test as we want to check as to whether the population mean conforms to given hypotheses. We performed the test on PASW Statistics 18 at 95% significance level. The results are summarized below in Table 5.7 and Table 5.8.

Table 5.7
Descriptive Statistics for t-Test

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error of Mean
H1a	293	5.19	1.003	.059
H1b	293	5.29	.860	.050
H1c	293	5.17	.790	.046
H1d	293	5.52	1.109	.065
H2a	293	5.40	1.441	.084
H2b	293	5.63	1.250	.073
H2c	293	5.42	1.257	.073
H2d	293	5.55	1.277	.075
H2e	293	5.47	1.283	.075
H2f	293	5.54	1.283	.075
H2g	293	5.51	1.265	.074
H2h	293	5.44	1.306	.076
H3a	293	5.92	1.165	.068
H3b	293	6.05	1.151	.067

First column indicates hypothesis numbers and next columns; number of valid sample responses, mean, standard deviation and standard error of

mean respectively. Means of all hypotheses exceeds 5 (i.e. agree) on Lickert's scale. Table 5.8 shows the results of the test of the hypotheses.

Table 5.8
One Sample t-Test Results

One-Sample Test						
	Test Value = 5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
H1a	3.319	292	.001	.195	.080	.310
H1b	5.707	292	.000	.287	.190	.390
H1c	3.773	292	.000	.174	.080	.260
H1d	7.954	292	.000	.515	.390	.640
H2a	4.783	292	.000	.403	.240	.570
H2b	8.696	292	.000	.635	.490	.780
H2c	5.671	292	.000	.416	.270	.560
H2d	7.363	292	.000	.549	.400	.700
H2e	6.236	292	.000	.468	.320	.620
H2f	7.147	292	.000	.536	.390	.680
H2g	6.928	292	.000	.512	.370	.660
H2h	5.770	292	.000	.440	.290	.590
H3a	13.494	292	.000	.918	.780	1.050
H3b	15.678	292	.000	1.055	.920	1.190

The results of the test clearly indicate that the probability of getting lesser value of mean than 5.0 is less than 0.05. We could not find support to accept the null hypotheses therefore accept all alternate hypotheses. We summarize the results in Table 5.9.

Table 5.9
Support for Hypotheses and Inferences

Sr. No.	Hypothesis No.	Hypotheses	Inference
1	H1a	Greater the tacit knowledge sharing between monitoring and credit decision making personnel better will be quality of judgment of capacity to pay back of the customer.	Accepted
	H1b	Greater the tacit knowledge sharing between monitoring and credit decision making personnel better will be quality of judgment of willingness of the customer to pay back loan.	Accepted
	H1c	Greater the tacit knowledge sharing between monitoring and credit decision making personnel better will be quality of judgment of purpose of loan.	Accepted
	H1d	Greater the tacit knowledge sharing between monitoring and credit decision making personnel better will be quality of judgment about identification of the customer.	Accepted
2	H2a	Better the quality of judgment of capacity of the pay back of the customer complete will the recovery of loans.	Accepted
	H2b	Better the quality of judgment of capacity of the pay back of the customer in time will the recovery of loans.	Accepted
	H2c	Better the quality of judgment of willingness to pay back of the customer complete will be the recovery of loans.	Accepted
	H2d	Better the quality of judgment of willingness to pay back of the customer in time will be the recovery of loans.	Accepted
	H2e	Better the quality of judgment about purpose of loan complete will be the recovery of loans.	Accepted
	H2f	Better the quality of judgment about purpose of loan in time will be the recovery of loans.	Accepted
	H2g	Better the quality of judgment about the identification of customer complete will be the recovery of loans.	Accepted
	H2h	Better the quality of judgment about the identification of customer in time will be the recovery of loans.	Accepted
3	H3a	Complete the recovery of loans better will be financial performance of a bank.	Accepted
	H3b	In time the recovery of loans better will be financial performance of a bank.	Accepted

The results could not support all null hypotheses therefore all alternate hypotheses have been accepted. The representations of model given in Figure 3.3 and Figure 4.2 are empirically proved to be valid. The statistical inferences of the study clearly indicate that the community of practice opines to approve the model.

5.4 ADDITIONAL INSIGHT

An additional insight might be gained by investigating that as to whether there is any actually shareable material tacit knowledge possessed by two communities. It is a question concerning very purpose of the study. In order to address the issue we formulate additional testable hypothesis which is given below along with testable null hypothesis.

5.4.1 Additional Hypothesis

Hypothesis: Community of practice agrees that credit and recovery personnel possess tacit knowledge.

Null: Community of practice does not agree that credit and recovery personnel possess tacit knowledge.

Alternate: Community of practice at least agrees that credit and recovery personnel possess tacit knowledge.

H0: $\mu < 5.0$
Ha: $\mu \geq 5.0$

There are 23 indicators (Table 4.1) included in the instrument to test this additional hypothesis. The descriptive statistics of the hypothesis is given in Table 5.10.

Table 5.10
Descriptive Statistics for t-Test

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error of Mean
TKI 25	293	5.15	1.212	.071
TKI 26	293	5.47	1.136	.066
TKI 27	293	5.33	1.221	.071
TKI 28	293	5.21	1.273	.074
TKI 29	292	5.28	1.212	.071
TKI 30	293	5.45	1.256	.073
TKI 31	293	4.68	1.510	.088
TKI 32	293	4.89	1.483	.087
TKI 33	293	5.30	1.147	.067
TKI 34	293	5.20	1.276	.075
TKI 35	293	5.20	1.273	.074
TKI 36	293	5.42	1.249	.073
TKI 37	293	5.38	1.262	.074
TKI 38	293	5.39	1.321	.077
TKI 39	293	4.98	1.407	.082
TKI 40	293	5.31	1.376	.080
TKI 41	293	4.98	1.347	.079
TKI 42	293	4.91	1.394	.081
TKI 43	293	4.83	1.329	.078
TKI 44	292	5.00	1.224	.072
TKI 45	293	5.17	1.425	.083
TKI 46	293	5.96	1.225	.072
TKI 47	293	5.74	1.340	.078

In most of the cases the sample mean is more than 5 (agree) however the means of all cases are above 4 (neutral). Above neutral tends towards agreement. We tested this hypothesis through t-Test. Results of the t-Test are given in Table 5.11.

Table 5.11
One Sample t-Test Results

One-Sample Test						
	Test Value = 5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
TKI 25	2.073	292	.039	.147	.010	.290
TKI 26	7.044	292	.000	.468	.340	.600
TKI 27	4.690	292	.000	.334	.190	.470
TKI 28	2.846	292	.005	.212	.070	.360
TKI 29	4.008	291	.000	.284	.140	.420
TKI 30	6.186	292	.000	.454	.310	.600
TKI 31	-3.637	292	.000	.321	-.490	-.150
TKI 32	-1.260	292	.209	.109	-.280	.060
TKI 33	4.534	292	.000	.304	.170	.440
TKI 34	2.746	292	.006	.205	.060	.350
TKI 35	2.708	292	.007	.201	.060	.350
TKI 36	5.800	292	.000	.423	.280	.570
TKI 37	5.094	292	.000	.375	.230	.520
TKI 38	5.084	292	.000	.392	.240	.540
TKI 39	-.249	292	.803	.020	-.180	.140
TKI 40	3.905	292	.000	.314	.160	.470
TKI 41	-.260	292	.795	.020	-.180	.130
TKI 42	-1.089	292	.277	.089	-.250	.070
TKI 43	-2.199	292	.029	.171	-.320	-.020
TKI 44	.000	291	1.000	.000	-.140	.140
TKI 45	2.009	292	.045	.167	.000	.330
TKI 46	13.350	292	.000	.956	.810	1.100
TKI 47	9.461	292	.000	.741	.590	.890

The results of the test clearly indicate that the probability of getting lesser value of mean than 5.0 is less than 0.05 in most of the indicators. We, therefore, conclude to reject null hypotheses and accept alternate. The test suffices to answer the question raised above.

CHAPTER 6

CONCLUSION

Existing research in the domain established that there is a persistent problem of NPLs and it has deleterious effect on economies. NPLs time and again buildup in the banking sectors and adversely affect the profitability of banks and necessarily drag economies towards crises. The researchers are continuously in search of better solutions to this problem hence the study is aimed to provide a better solution to problem of NPLs.

The literature review reveals that recovery of loans is a consequent function of credit decisions. The recovery of loans can only be better and NPLs can only be controlled if the quality of credit decision is improved. The credit decision is a composite construct having many constituents. The research establishes that there are four major constituents core to the credit decisions. Recovery is also a composite construct and it has two major dimensions namely in time recovery and complete recovery of loans and is a formative variable of financial performance of a bank. All these constructs have been discussed in detail in Chapter 1 and Chapter 3.

In fact loan-recovery-loan is a cyclical process of a bank that presently runs more in explicit format (Figure 3.1). The research identified the roots of origin of the problem and evaluates its severity, gravity, magnitude, and deleteriousness. It was identifies that a loop of systematic diffusion of tacit knowledge is missing in the process of loan-recovery-loan and due to this missing loop, the quality of credit decisions is being compromised. The systematic diffusion of tacit knowledge in the existing loop of loan-recovery-loan (Figure 3.2) can improve the quality of credit decisions and resultantly the recovery and financial performance. In view of the roots and nature of the problem our study suggests a model for diffusion of tacit knowledge to address the issue (Figure 3.3).

The model (TKSM) focuses on core business of the banking industry and provides a simple way to use the tacit knowledge and to improve the credit decision making. It has been modeled on the real contemporary banking processes and community of practice. It provides the proof existence of tacit knowledge and identifies possessors, potential recipients, use and the way of sharing tacit knowledge in order to solve the problem. It is a simple precise and useful model of KM having a wide range of practical applications in the banking sector. The previous research speaks that most of the times

focus is on appointment of KM personnel instead of KM systems but TKSM does not require any special KM person and suggests an automatic flow of knowledge in contemporary banking systems. The measure used in empirical study was also validated by the practicing bankers and researchers to provide a fair idea about usefulness and precision of the model. Deterioration in the quality of bank assets (loans) can be controlled by implementing TKSM.

6.1 CONTRIBUTION AND NOVELTY OF THE STUDY

NPLs are the common issue of cotemporary banking system. Bankers, economists, public, and the governments are constantly in search of the measures to keep NPLs in limited controlled proportions. Our study provides a novel solution of the persistent issue of NPLs in banks. The researchers believe that it is the first research based initiative to address the issue of NPLs in KM perspective. It is also ever first empirically tested model of tacit knowledge sharing for banks which points out the valuable tacit knowledge contents and the possessors. The model also identifies the use of that valuable knowledge in material decisions with a demonstration of a likely impact on the financial performance of the banks. The study is an indication for new aspects of research in banking in future.

6.2 PRACTICAL IMPLICATIONS OF THE STUDY

TKSM is a practical and practicable model. If the model is implemented in banks in true letter and spirit, it will work. It has potential to control the NPLs at nascent stage. The empirical study based on appropriate representative probability sampling encourage to widely generalize the results of the study in banking sectors. Community of practice agrees with Tacit Knowledge Sharing Model (TKSM) for banks. They accede to the fact that tacit knowledge sharing, through mediation of improvement in quality of credit decisions and recovery, improves the financial performance of a bank. The community further acceded that dyad on which the study is designed indeed possesses tacit knowledge and that is shareable as well. Hence to large extent the risk of likelihood of NPLs of banks can be controlled by implementation of TKSM.

6.3 LIMITATIONS

The study has been conducted in four provincial capital cities of Pakistan and similar type studies may be conducted in other countries to test

the implications of the model. Certain banks have limited function of credit and recovery in branches hence officers of those branches might have limited exposures. Usual bias of percept-percept inflation due to self reporting is also a limitation of the study. The study is subject to all limitations associated with survey research.

6.4 FUTURE DIRECTION

This research gives new line of thinking to the bankers and researchers. Future research has to ascertain about and explore following questions. What type of contents of knowledge in exact the recovery and credit personnel possess? What are the tools to capture them more effectively? Where further to use this knowledge in the best interest of the banks? How to store it in repositories? How to evaluate the contents? How to motivate the possessors of knowledge contents and the recipients, users and evaluators? How to optimize the role of technology in banks? How to assess of impact of these initiatives on financial performance in objective manner? How to quantify and reward the contributors?

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ANNEXURE-1

LIST OF ABBREVIATIONS USED

Sr. No.	Abbreviation	Definition
1	**BKMM**	Banking Knowledge Management Model
2	**BTM**	Bank of Tokyo-Mitsubishi Limited
3	**CAS**	Complex Adaptive Systems
4	**CD**	Credit Decision
5	**CoP**	Community of Practice
6	**CR**	Completeness of Recovery
7	**FBS**	Federal Bureau of Statistics
8	**FP**	Financial Performance
9	**GDP**	Gross Domestic Product
10	**H**	Hypothesis
11	**H0**	Null Hypothesis
12	**Ha**	Alternate Hypothesis
13	**IS**	Information Systems
14	**IT**	Information Technology
15	**KA**	Knowledge Assets
16	**KM**	Knowledge Management
17	**KMS**	Knowledge Management Systems
18	**KS**	Knowledge Sharing
19	**LO**	Learning Organizations
20	**NPLs**	Non Performing Loans
21	**PBA**	Pakistan Banks Association
22	**Q&A**	Quality Assurance
23	**QJC**	Quality of Judgment of Capacity of customer to repay loan
24	**QJI**	Quality of Judgment of Identification of customer
25	**QJP**	Quality of Judgment of Purpose of loan
26	**QJW**	Quality of Judgment of Willingness of customer to repay loan
27	**RC**	Recovery
28	**SBP**	State Bank of Pakistan
29	**SKOs**	Knowledge Sharing Objects
30	**SOCB**	State Owned Commercial Banks
31	**TKI**	Tacit Knowledge Indicators
32	**TKS**	Tacit Knowledge Sharing
33	**TKSM**	Tacit Knowledge Sharing Model for Banks
34	**TR**	Timeliness of Recovery
35	**UMS**	Urgent Mail Service

ANNEXURE-2

For Recovery Personnel

Approximately 20 minutes required to fill.

QUESTIONNAIRE

TACIT KNOWLEDGE SHARING MODEL (TKSM) FOR BANKS: IMPROVING THE FINANCIAL PERFORMANCE

Notes:

- I am an M. Phil. research scholar, conducting research regarding the issue of recovery of non-performing loans. The solution of non-performing loans will be suggested in Knowledge Management perspective.
- Your input will be a great contribution in my research work and this survey questionnaire will be used for research purpose only. The information provided by you will be used in combined statistical tables.
- The response of the officers, having minimum 3 years of working experience in banking, is desired.
- The term "recovery personnel" includes the officers working in loan monitoring, special asset management, litigation or any other department directly or indirectly responsible for recovery of loans by whatsoever name it may be called.
- The term "credit personnel" includes officers working in credit, advances, credit marketing, credit administration or any other department directly or indirectly responsible for loaning by whatsoever name it may be called.

Section-1 Personal Memoranda

1. Name (Optional)_____
2. Phone No (Optional)_____ Cell No._____
3. Email Address (Optional)_____
4. Designation_____
5. Department_____
6. Name of the Bank_____
7. Branch/Office Address _____

   _____
8. Experience of working in banks _____ Years
9. Qualification: (mark highest)

   Post-graduate _____

   Professional Graduate _____

   Graduate _____

   Any other (please mention) _____
10. Gender of Respondent (mark the relevant): Male_____ Female_____

Section – 2 Research Questions (Please reply all the research questions)

Encircle only one number from 1-7 that indicates your disagreement or agreement		Very Strongly Disagree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Very Strongly Agree
Knowledge Sharing								
11 a)	Credit personnel use their professional knowledge to assess the financial capacity of the borrowers.	1	2	3	4	5	6	7
b)	Credit personnel use their professional knowledge to assess the managerial capacity of the borrowers.	1	2	3	4	5	6	7
c)	Credit personnel always want to know more about the loan repayment capacity of the borrowers.	1	2	3	4	5	6	7
d)	As the recovery personnel deal borrowers for longer period of time, therefore, financial position of the borrowers is mostly known to them.	1	2	3	4	5	6	7
12 a)	During the process of credit appraisal, the credit personnel want to know the resources of borrowers to pay back the loan.	1	2	3	4	5	6	7
b)	Recovery personnel usually come to know background of the borrowers when they interact for recovery.	1	2	3	4	5	6	7
c)	Recovery personnel mostly come to know the repayment behavior of borrowers during the recovery process.	1	2	3	4	5	6	7
d)	Recovery personnel are sometimes aware of market reputation of borrowers.	1	2	3	4	5	6	7
e)	Recovery personnel are sometimes aware of the repayment behavior of borrowers with other financial institutions.	1	2	3	4	5	6	7
13 a)	Credit personnel want to fairly judge the purpose of loan.	1	2	3	4	5	6	7
b)	Recovery personnel mostly come to know, how the borrowers actually use the loan amounts.	1	2	3	4	5	6	7
c)	Recovery personnel sometimes come to know, how the borrowers misuse the loan amounts.	1	2	3	4	5	6	7
d)	Recovery personnel sometimes come to know, about actual title of assets financed when they enforce recovery measures.	1	2	3	4	5	6	7
e)	Recovery personnel mostly come to know, about actual title of assets taken as collateral when they enforce recovery measures.	1	2	3	4	5	6	7
f)	Recovery personnel mostly have an idea of the price of assets subject to finance/collateral.	1	2	3	4	5	6	7

Encircle only one number from 1-7 that indicates your disagreement or agreement		Very Strongly Disagree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Very Strongly Agree
g)	Recovery personnel have an idea of Forced Sale Value (FSV) of assets.	1	2	3	4	5	6	7
14 a)	It is necessary for credit personnel to establish the identity of a borrower before sanction of a loan.	1	2	3	4	5	6	7
b)	Sometimes, recovery personnel provide important information to credit personnel regarding identification of borrowers before sanction of a loan.	1	2	3	4	5	6	7
***Capacity* of the Borrower to Repay the Loan**								
15	If the credit personnel rightly judge the capacity of a borrower to pay back the loan then the bank has fair chances to recover its principal and finance income *completely*.	1	2	3	4	5	6	7
16	If the credit personnel rightly judge the capacity of a borrower to pay back the loan then the bank have fair chances to recover its principal and finance income *timely*.	1	2	3	4	5	6	7
***Willingness* of the Borrower to Repay the Loan**								
17	If the credit personnel rightly judge the willingness of a borrower to pay back the loan then the bank have fair chances to recover its principal and finance income *completely*.	1	2	3	4	5	6	7
18	If the credit personnel rightly judge the willingness of a borrower to pay back the loan then the bank have fair chances to recover its principal and finance income *timely*.	1	2	3	4	5	6	7
***Purpose* of the Loan**								
19	If the credit personnel rightly judge the purpose of a loan then the bank have fair chances to recover its principal and finance income *completely*.	1	2	3	4	5	6	7
20	If the credit personnel rightly judge the purpose of a loan then the bank have fair chances to recover its principal and finance income *timely*.	1	2	3	4	5	6	7
***Identity* of the Borrower**								
21	If the credit personnel rightly judge the identity of the borrower then the bank have fair chances to recover its principal and finance income *completely*.	1	2	3	4	5	6	7
22	If the credit personnel rightly judge the identity of the borrower then the bank have fair chances to recover its principal and finance income *timely*.	1	2	3	4	5	6	7

Encircle only one number from 1-7 that indicates your disagreement or agreement		Very Strongly Disagree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Very Strongly Agree
Financial Performance of the Bank								
23	If the bank completely recovers its loans then financial performance of the bank will be better.	1	2	3	4	5	6	7
24	If the bank timely recovers its loans then financial performance of the bank will be better.	1	2	3	4	5	6	7
Undocumented Knowledge								
25	Credit decision makers know the context of the cases of loans (i.e. under what circumstances and conditions these loans were sanctioned) but recovery personnel normally don't know these facts.	1	2	3	4	5	6	7
26	Credit personnel use their knowledge about different business sectors for credit decision making.	1	2	3	4	5	6	7
27	Credit personnel consider the characteristics of different geographical areas for credit decision making.	1	2	3	4	5	6	7
28	Credit personnel consider family background of borrowers for credit decision making.	1	2	3	4	5	6	7
29	Credit personnel use their knowledge (i.e. knowledge about capacity, technology, design, nature, origin, and condition) of assets to be financed during credit decisions.	1	2	3	4	5	6	7
30	Credit personnel consider nature of collateral securities during credit decision making.	1	2	3	4	5	6	7
31	Credit decision makers have short time to give important credit decisions.	1	2	3	4	5	6	7
32	Loans are recovered over the period of time (i.e. term/tenor of loan) allowed as per sanction.	1	2	3	4	5	6	7
33	During the credit process, there are many occasions when a bank officer learns maximum about the case of a loan and the borrower.	1	2	3	4	5	6	7
34	The knowledge of credit decision makers about the context of the cases of loans (i.e. under what circumstances and conditions these loans were sanctioned) is useful for recovery.	1	2	3	4	5	6	7
35	There are many occasions to learn during the process of recovery of loans.	1	2	3	4	5	6	7

Encircle only one number from 1-7 that indicates your disagreement or agreement		Very Strongly Disagree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Very Strongly Agree
36	Knowledge gained through learning in the processes of recovery is useful for credit decision making in future.	1	2	3	4	5	6	7
37	Recovery personnel deal with different internal and external communities (i.e. different types, classes and categories of people) during recovery process.	1	2	3	4	5	6	7
38	The enforceability of documents at law is actually tested during recovery process.	1	2	3	4	5	6	7
39	Recovery personnel have undocumented knowledge about insurance matters.	1	2	3	4	5	6	7
40	Recovery personnel have useful knowledge about litigation processes.	1	2	3	4	5	6	7
41	Knowledge of recovery personnel about litigation processes is mostly not documented.							
42	Recovery personnel have a lot of knowledge about post litigation (i.e. auctions and after auction transfer of assets etc.) processes.	1	2	3	4	5	6	7
43	Knowledge of recovery personnel about post litigation processes is mostly not documented.							
44	Recovery personnel have different types of knowledge about the borrower but most of their knowledge is not documented.	1	2	3	4	5	6	7
45	Undocumented knowledge possessed by credit and recovery personnel is valuable asset for a bank.	1	2	3	4	5	6	7
46	Recovery of loans is very important for a bank.	1	2	3	4	5	6	7
47	Survival of the bank is based on recovery of loans.	1	2	3	4	5	6	7

ANNEXURE-3

BANK WISE POPULATION

Sr. No.	Name of the Bank	No. of Branches (Total)	No. of Branches (Capital Cities)
1	National Bank of Pakistan	577	175
2	First Women Bank Limited	38	16
3	The Bank of Punjab Limited	272	66
4	The Bank of Khyber	34	13
5	Allied Bank Limited	742	218
6	Bank Al-Falah Limited	196	81
7	Askri Bank Limited	176	73
8	Bank Al Habib Limited	226	134
9	Mybank Limited	85	48
10	SAMBA Bank Limited	28	20
11	Atlas Bank Limited	33	22
12	Faysal Bank Limited	107	66
13	Habib Bank Limited	1449	268
14	KASB Bank Limited	35	25
15	Arif Habib Bank Limited	39	23
16	JS Bank Limited	5	4
17	MCB Bank Limited	1080	247
18	United Bank Limited	1056	204
19	The Royal Bank of Scotland Limited	80	50
20	Habib Metropolitan Bank Limited	42	32
21	Bank Islami Pakistan Limited	37	18
22	Emerites Global Islamic Bank	25	15
23	Soneri Bank Limited	52	35
24	SILK Bank Limited	83	54
25	NIB Bank Limited	240	146
26	Meezan Bank Limited	119	71
27	Dubai Islamic Bank Pakistan Limited	19	12
28	Standard Chartered Bank	30	23
29	Dawood Islamic Bank Limited	6	6
30	Al Baraka Islamic Bank B.S.C. Pakistan	29	13
31	Citibank N.A. (Pakistan Operations)	25	15
32	Deutsche Bank AG (Pakistan Operations)	3	2
33	HSBC Bank Middle East Limited	9	4
34	Oman International Bank S.A.O.G.	2	2
35	The Bank of Tokyo-Mitsubishi UFJ Limited	2	1
36	Barclays Bank PLC (Pakistan Operations)	20	13
37	The Punjab Provincial Cooperative Bank Limited	167	4
38	Industrial Development Bank of Pakistan	19	4
39	Zarai Taraqiati Bank Limited	342	29
40	SME Bank Limited	13	8
	Total	**7542**	**2260**

ANNEXURE-4

BANK WISE SAMPLE

Sr. No.	Name of the Bank	Sample Required per Bank	Sample Required per Bank Adjusted	Sample Required per Bank Adjusted with replacement
1	National Bank of Pakistan	10	10	13
2	First Women Bank Limited	1	1	2
3	The Bank of Punjab Limited	4	4	5
4	The Bank of Khyber	1	1	2
5	Allied Bank Limited	12	12	15
6	Bank Al Falah Limited	4	4	6
7	Askri Bank Limited	4	4	5
8	Bank Al Habib Limited	7	7	10
9	Mybank Limited	3	3	4
10	SAMBA Bank Limited	1	1	2
11	Atlas Bank Limited	1	1	2
12	Faysal Bank Limited	4	4	6
13	Habib Bank Limited	15	15	20
14	KASB Bank Limited	1	1	2
15	Arif Habib Bank Limited	1	1	2
16	JS Bank Limited	0	1	2
17	MCB Bank Limited	13	13	18
18	United Bank Limited	11	11	15
19	The Royal Bank of Scotland Limited	3	3	5
20	Habib Metropolitan Bank Limited	2	2	3
21	Bank Islami Pakistan Limited	1	1	2
22	Eremites Global Islamic Bank	1	1	2
23	Soneri Bank Limited	2	2	3
24	SILK Bank Limited	3	3	4
25	NIB Bank Limited	8	8	10
26	Meezan Bank Limited	4	4	6
27	Dubai Islamic Bank Pakistan Limited	1	1	2
28	Standard Chartered Bank	1	1	2
29	Dawood Islamic Bank Limited	0	1	2
30	Al Baraka Islamic Bank B.S.C. Pakistan	1	1	2
31	Citibank N.A. (Pakistan Operations)	1	1	2
32	Deutsche Bank AG (Pakistan Operations)	0	1	2
33	HSBC Bank Middle East Limited	0	1	2
34	Oman International Bank S.A.O.G.	0	1	2
35	The Bank of Tokyo-Mitsubishi UFJ Limited	0	1	2
36	Barclays Bank PLC (Pakistan Operations)	1	1	2
37	The Punjab Provincial Cooperative Bank Limited	0	1	2
38	Industrial Development Bank of Pakistan	0	1	2
39	Zarai Taraqiati Bank Limited	2	2	3
40	SME Bank Limited	0	1	2
	Total	**123**	**133**	**195**