RESEARCH ARTICLE

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Application of Six Sigma to Evaluate Credit Risk Assessment in Commercial Banks

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Abstract

Improper credit risk assessment reduces the bank's profitability. It also has an impact on the quality of assets and also increases the loan losses and will also cause financial crises for the bank. If this happens the common people will lose their faith in the bank and it will directly affect the deposits of money into the bank.

The objective of the paper is to provide an introduction and understanding of credit risk and analysis of credit risk assessment. The purpose of this study was to identify debt risk and debt risk assessment and to resolve it with the help of the six sigma DMAIC tool.

Banks are very careful and strict in providing financial information to others.In the 1980s, Motorola began using Six Sigma (Six Sigma) to address market share and manufacturing costs, as well as increased production costs. When someone applies for the loan it becomes very difficult for the bank that whatever to give the loan or not so we need to check everything about the borrower. So if we apply the six sigma we can make the process very easy.

Keywords: Profitability, debit risk assessment, DMAIC, financial information, six sigma etc.

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Introduction:

Bank provides the loans from the savings of the common people who deposit their hard-earned money. This is also causing stress on the common people. Most people have saving accounts in their banks. Banks can also decrease the interest percentage on the saving accounts. To recover the losses the common man has to suffer, the bank will increase the rates on the different services which banks provide to the people. Hence to gain the confidence of the people and society on the bank the credit risk assessment is very important. The bank should know whether the person or organization taking the loans will be able to repay the loan amount or not. If banks come to know that they cannot repay the amount they should not pay the loan amount to that person or an organization or they can give the loans at higher interest rates. This will reduce the losses which are faced by the banks. If people have faith in the banks, they will deposit their money into the banks instead of keeping the money at their homes. This will increase the bank's profitability and also it will have an impact on economic development. The small non-bank's part where a large percentage of organizations and individuals are likely to be hung up on the banks for the loan so that they can do some business. If banks fail to provide the loan to the lower society people

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who need bank loans so that they can do a start-up and run a business will not be able to do the business. To understand the origin of banking that whether it will crisis or not it is very important to start by considering the factors that affect the baking credit risk in the first place. (Castro, 2013)
The banks are the part of the system of financing that plays a very key role in the country's economy because the environment between Persons who require to borrow the money and those who desire to invest is naturally connected to all sectors in the economy. The extent to which a bank increase credit given to the public for productive thing increases the rate of a nation's economic growth and its sustainability. Banks help to facilitate the high standard financial facilities which contribute to the growth of G.D.P. of the nation under increasing trade and commerce and increasing growth of industrial development, export supply, increasing the employment possibility for the people, poverty will also be decreased. This will help in raising the standard of living of lower people and will further help in the sustainable social and economic progress of the country.

(Pond, 2000) Merchant banks have to deal with credit risk in every transaction they do. Hence to minimize this type of risk all the banks have to grade the borrower into the different risk levels based on the information which they gather from them.

The estimation of fiscal credit risk is an essential and demanding exploration in the field of bookkeeping and accounts. (Chen et al., 2016)

Objective

The objective of the paper is to provide an introduction and understanding of credit risk and analysis of credit risk assessment. The purpose of this study was to identify debt risk and debt risk assessment and to resolve it with the help of the six sigma DMAIC tool. The objective is also to provide an understanding of how we can evaluate the credit risk assessment. A good credit risk assessment can prevent losses for any bank. The best way in which we can do a good credit risk assessment is with the "application of six sigma".

Literature Review

Credit risk is a common form of risk that must be handled by both non-financial and financial institutions. If the debtor or creditor fails to fulfill its promise to repay the loan to the lender, credit risk will arise. In finance, it occurs that payments can either be postponed or not made at all, which can create problems with cash flow and impact the liquidity of a bank. (Greening & Bratanov 2009, 161). In a real economy, the non-financial debt risks of an organization are the major sources of systematic risks. A key challenge in assessing the level of formal risk is the inclusion of debt. In this regard, to reduce the risk, we propose a network model of double-risk infection. (Cao et al., 2020). In the modelling process, the most important variables in credit enhancement are called “credit score”. This modelling process uses a mathematical method that has been widely published by banks, financial consulting firms, and other financial institutions. (Leonard, 1995).

At the time, Motorola's biggest challenge was to produce 2,600 defective components in accession to competing with manufacturers of Japan. (Raisinghani et al., 2005).

An examination pursued a planned approach to DMAIC to challenge and create a solution to customer problems. In the starting phase, complaints are divided into different categories and allocated accordingly. As shown in figure 5, the Measurement System and SIPOC (Supplier, Inputs, Processes, Extracts, and Controls) were used. In the analysis and improvement phase, his/her, their, etc. phase., the analysis of why and how can be done. In essence to find the solution for any complaints that are being raised by the customers we have to go deeper to find out that how and why this problem has been aroused. Lastly, in the control phase, the validation of the complaints can be done (Patyal et al., 2020).

Research Motivation

We have seen many news related to fraud in banks like many businessmen took a loan and fled from the country. So, reading all this news we thought that what should we do so that we can raise awareness to reduce these loan frauds. So, we chose this topic so that we can make few suggestions to reduce this type of fraud. The method which is used is the using six sigma methodology.

Limitations of The Study

Despite my best effort, some limitations acted as barriers to conduct the study. Data insufficiency because it was very difficult to collect data from different banks. So, the data was limited.

Lack of records was there because all data related to the loans can be only be provided from the banks and also, we cannot find such things in books. I also looked for the data in different Publication, facts, and figures are not much available.

Banks generally keep all data in a confidential matter so it was not possible to gather all sort of information due to official confidentiality. Limited access to data. Non-disclosure of data was another barrier that I had to face during the conduct of this study. Credit Policies have too many confidential matters to a bank so they do not reveal anything. I tried my best in obtaining the required information as much as possible. If we also look on the websites of the bank, they have not provided enough information.

Credit Risk Assessment And Six Sigma

Now if the borrower aborts to reimburse the loan which is the default on debt now this will be removed by the six sigma. So the basic thing that six sigma does is eliminating the error, which can be done by the methodology of the six sigma. Now bank also wants that they should be satisfied as well as their customer should be satisfied so to increase this satisfaction. Six Sigma and its methodology help to improve the satisfaction in the bank.

The most difficult part is to know that whether he will be able to repay the loan or not so if we apply the six sigma and improve the process of the credit approval it becomes very easy for the bank. When someone applies for the bank sometimes the bank needs to visit the borrower house or the organization to check the real facts so if we do have the correct steps which we need to follow we have to go again and again but if we use the six sigma we can reduce the approval cost which is on the bank. So, it helps to reduce the cost of the approval now even after the credit approval we need to check that whether he will perform well or not in the future so this can be done by the six sigma.

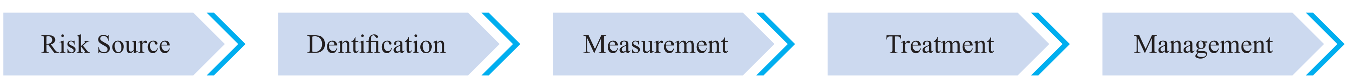


Figure 1: Problem-solving Steps.

The systematic problem-solving approach depicted in figure 1—encompassing risk source identification, measurement, treatment, and management—provides a robust framework for implementing comprehensive credit risk assessment methodologies within financial institutions.

If we see the framework for the credit risk assessment it says that firstly we need to find the risk source then the identification comes the measurement then comes to the treatment and the last one is management. So, the best suitable method which can be used is the six sigma.

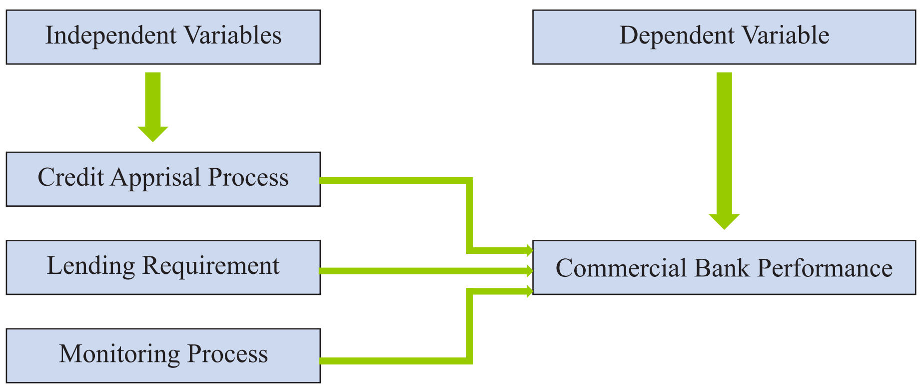
Credit Risk Assessment (Problems)	Six Sigma (Solution)
Default on a debt	Eliminate error
Loss given default	Improving Process of credit approval
Exposure at default	Utilizing statistical analysis rather than guesswork
Lacking risk tools	Using best tools
Inefficient data management	The best method for the collection of data

Figure 2: Credit Risk Assessment Vs Six Sigma

Figure 2 demonstrates how Six Sigma methodologies can systematically address critical credit risk assessment challenges by transforming identified problems into data-driven solutions, thereby enhancing the robustness of credit evaluation frameworks within financial institutions. The comparison matrix illustrates that fundamental credit risk issues—including default probability, loss quantification, and exposure measurement—can be mitigated through Six Sigma's emphasis on error elimination, process optimization, and statistical rigor rather than subjective judgment.

Conceptual Framework

There are relevant variables that are dependent on each other in credit risk assessment. Like the framework given by Mumbi Wanjugu Mercylynne, Job Omagwa, 2017.



Source (mumbi Wanjugu Mercylynne, Job Omagwa, 2017.)

Figure 3: Conceptual Framework Of Credit Risk Assessment.

Figure 3 illustrates a comprehensive credit risk assessment framework wherein independent variables encompassing credit appraisal processes, lending requirements, and monitoring mechanisms collectively determine the dependent variable of commercial bank performance. This conceptual model emphasizes that effective credit risk management requires an integrated approach combining rigorous borrower evaluation, clearly defined lending standards, and continuous post-disbursement monitoring to optimize financial institution stability and profitability.

Methodology

The purpose of this study was to identify debt risk and debt risk assessment and to resolve it with the help of the six sigma DMAIC tool.The method of data collection used is both primary data and secondary data. The period of the data collection is two months. The sampling method which is chosen is systematic random sampling.

Tools used in Data Analysis and Reporting:

Different types of computer software such as MS Office (Microsoft Excel and Microsoft Word) are used to analyze and report this research.

The five phases of DMAIC are described below:

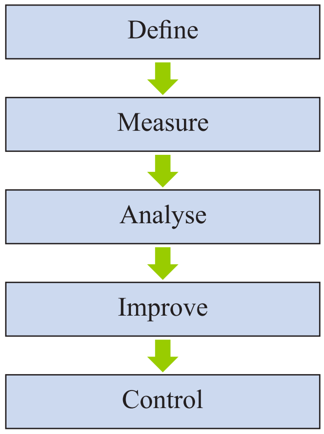


Figure 4 - Five Phases Of Dmaic

Figure 4 depicts the DMAIC framework — comprising Define, Measure, Analyse, Improve, and Control phases — which provides a systematic approach to process optimization and quality enhancement within organizational operations. This sequential methodology ensures that improvement initiatives are grounded in data-driven analysis, systematic problem identification, targeted interventions, and sustained monitoring mechanisms, thereby fostering organizational excellence and sustainable performance enhancement in credit risk management and banking operations.

Table 1. Six Sigma DMAIC Cycle

Define (D)	To identify specific or general problems
Measure (M)	To gather data on the process
Analyse (A)	To evaluate process design
Improve (I)	To standardize solution/ measure results
Control (C)	To establish measurements and re-investigate to maintain Performances

As per Table 1,

Define

The main problem was address in the banks about the credit risk which occurs. It occurs when the borrowers failing to repay the loan. It is impossible to know that exactly who will default loan payer so we need to judge and manage the credit risk so that we can reduce the loss. The tool we can use is the SIPOC diagram, the team that uses supplier (S) and then input (I) self-processing (P) the extraction process (O), and the last customer (C) output. It is helpful to explain "the limitations and complexities of the process without going into too much detail" (Karakhan, 2011).

Suppliers	Inputs	Process	Outputs	Customers
Bank	Loan Form	Analysis of Form	Loan Accepted	Individuals
Credit Union	Required Documents		Loan Rejected	Organizations
Online Lenders	Company Details		Stand by/ Under process	
	Financial Statement			

Figure 5 - SIPOC (supplier, Input, Process Output, Customer).

Applicant Fills Loan Application Form
Hand It over To the Bank
Bank Checks the Form and Attached Documents
Analysis of the Form
Accepted or rejected

Figure 6 - Process Flow.

Figure 6 delineates the sequential loan approval process wherein applicants submit completed loan applications for comprehensive bank evaluation, including documentation verification, form analysis, and final approval or rejection decisions, thereby establishing a structured institutional framework for managing credit risk and ensuring systematic credit appraisal.

During this phase, cause and- effect fishbone diagrams are used to identify the credit risk which occurs.

This will help to find the major reason behind the problem.

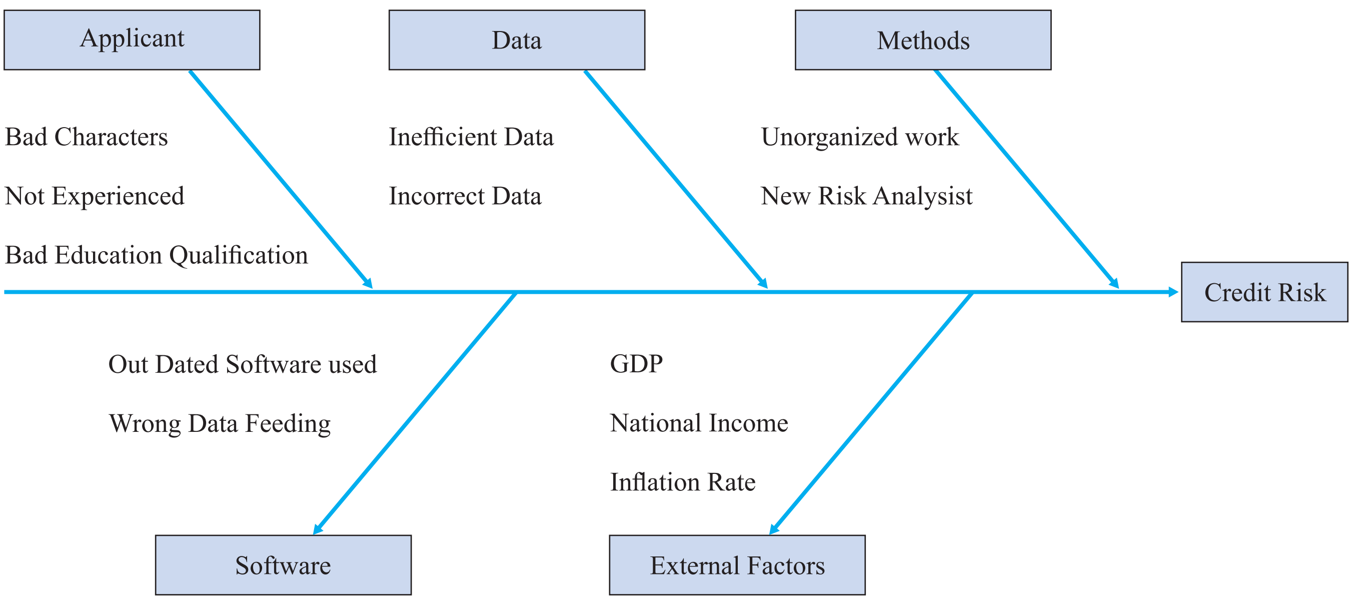


Figure 7- Credit Risk Factors

Figure 7 illustrates a comprehensive fishbone analysis identifying multifaceted contributors to credit risk, encompassing personnel-related factors (applicant characteristics and qualifications), data quality issues (inefficient and incorrect data), methodological challenges (unorganized processes and inexperienced analysts), software deficiencies (outdated systems and data feeding errors), and external macroeconomic factors (GDP, national income, and inflation rates), thereby demonstrating the interconnected nature of credit risk determinants within financial institutions.

Measure

The purpose of the rating section is to evaluate credit risk assessments and to collect relevant data to answer questions about what and how. When investigating any event, the first step is to determine the borrower's capability to pay back the loan. It helps to measure the quality of the borrower you want to take alone from the bank.

The level of difficulty associated with a credit risk assessment is an opportunity to lose because of the borrower's abortion to reimburse the loan amount or reach the contractual account abilities. Although it is very difficult to know who will fail to repay the loan, so a thorough assessment and risk management of the loan will help to reduce the severity of the loss.

Other levels of severity or risk are-

- Inefficient Data Management
- Time is taken to Process a Loan Application
- The productivity of Loan Processing Agents
- Increase in NPL (Non-Performing Loan)
- Poor reporting and visualization

The borrower credit risk is evaluated by taking different points in view:

- The financial condition of the borrower can be done by examining the financial statements of the company, then looking for the past year's financial performance, and the last one is the capital adequacy.
- The borrower's parallel position in the market and the operating efficiency of his firm or business.
- The quality of management is analyzing which is done by looking at its stat record, remittance record, and financial progression.
- Industry-specific credit risk is assessing by taking into consideration: - Certain area characteristics like the importance of the business to the fiscal growth of the country.
- The competitiveness of the industry is checked which is done by evaluating certain areas like financial and earnings stability.

So, all the data will be collected based on the above consideration. This data needs to be accurate no manipulated one based on this data we can do the analysis.

Analyse

As per the figure 8, the data collection, we will do the analysis, so that we can remove the severity of the credit risk assessment and also improve the NPL (Non-Performing Loan) of the bank.

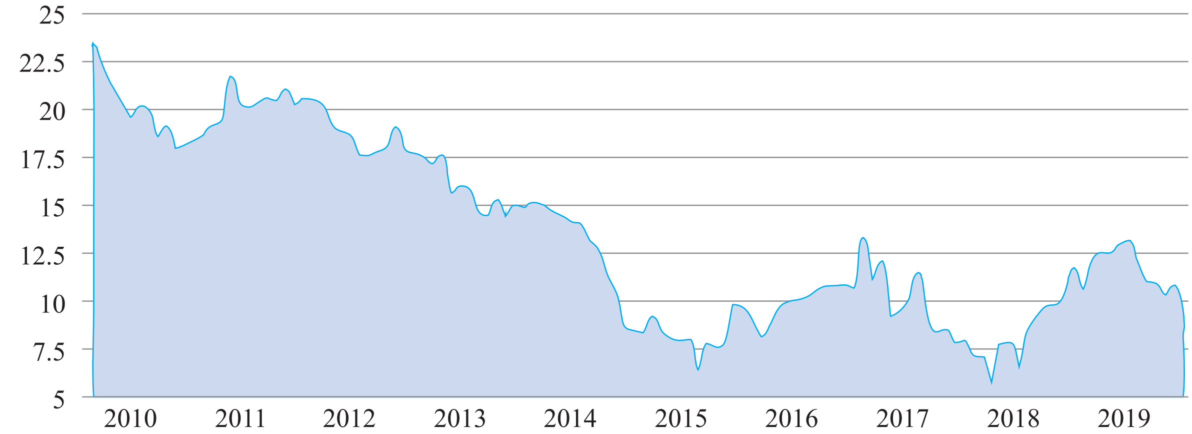
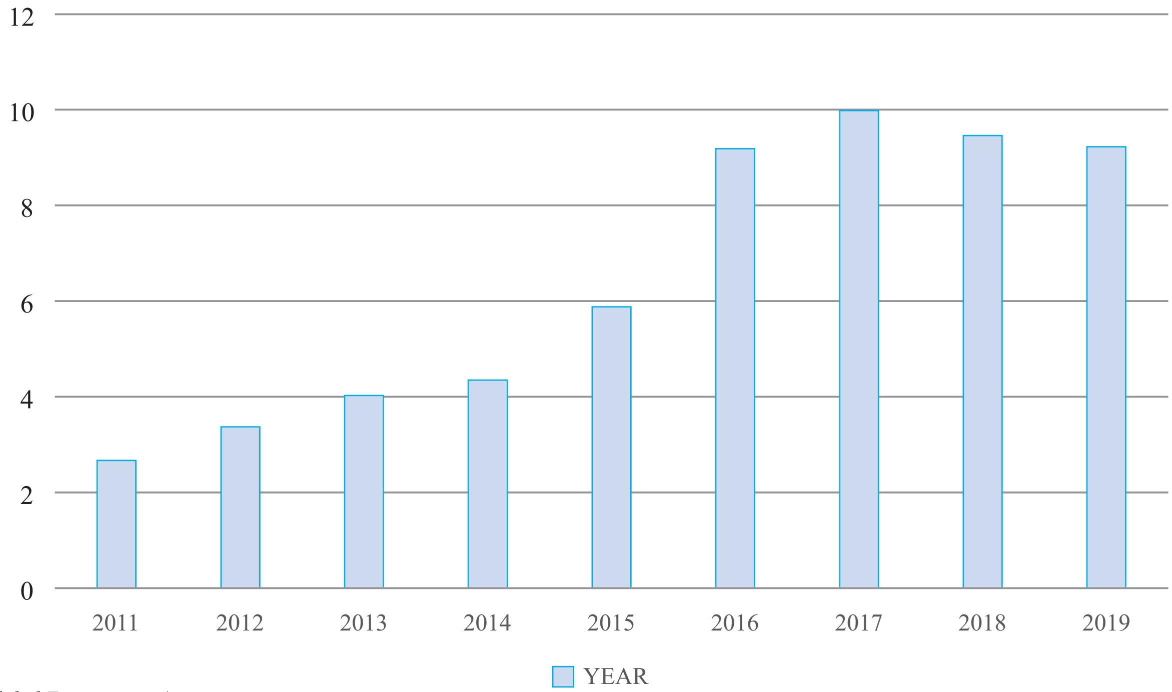


Figure 8: India's Domestic Credit Growth From Mar 2000 To Dec 2020 (ceic Data)

Nonperforming loans as a percentage of all bank loans, 2008 - 2019: In that index, we provide details of India from 2011 to 2019. a limit of 9.98 percent in 2017. Recent value from percentages.



(The Global Economy.com)

Figure 9: Non-performing Loans As A Percent Of All Bank Loans, 2011 – 2019

As per figure 9, Non-performing loans (NPLs) are considered default or close to default. As long as the loan is not working, the likelihood that the borrower will repay in full will be greatly reduced. If the debtor starts repaying in the NPL, it becomes a renewal loan, even if the debtor has not received all the unpaid payments. In a bank, commercial loans are considered invalid if the debtor has paid interest or interest within 90 days, or 90 days later. With consumer loans, for the past 180 days, it has been classified as NPL.

With the advent of the bad credit recognition process nearing completion, less efficient bank loans have improved to 9.1 percent since September 2019, compared to 11.2 percent in

FY18, according to an RBI report. reduced to 3.7 percent in FY19 as compared to 6 percent in FY18. "The total NPA rate for all banks has dropped to FY19 after an increase for seven consecutive years, as bad credit recognition is nearing completion.

The FSR showed that bank NPAs could rise sharply by September 2021 as bad loans continue to accumulate. The RBI said in a report that the rate of total NPAs (GNPA) could rise from 7.5 percent in September 2020 to 14.8% in September 2021 "in a state of severe depression"

Key information is collected through questionnaires disseminated to respondents which include professional banking as Departmental Managers and senior officials working on loan adjustments.

The most important question was surveyed through questionnaires.

Credit risk faced by the Banks

		Frequency	Percent
	Yes	2896	91.76
	No	260	8.23
	Total	3156	100

(Primary data)

Rating of Credit analysis and procedures followed by bank in extending credit

		Frequency	Percent
	Excellent	1023	32.41
	Very good	1236	39.16
	Good	596	18.88
	Fair	301	9.53
	Total	3156	100

(Primary data)

Tools used to measure Credit risk

		Frequency	Percent
	Internal rating	896	28.39
	Through the five C's of credit	956	30.29
	Through Financial		
	Statement Ratios	1025	32.47
	Other Method	279	8.84
	Total	3156	100

(Primary data)

Most Important Risks faced by the banks during the last ten years period

		Frequency	Percent
	Credit risk	1956	61.97
	Liquidity risk	316	10.01
	Operational risk	201	6.368
	Interest rate risk	325	10.29
	Don't Know	358	11.34
	Total	3156	100

(Primary data)

It was found that the credit risk is the most important risk which was counter by the bank during the past 10 years. Now, this data is used to calculate the current six sigma level. Here the credit risk will be taken as a defect.

Calculation of Sigma Level

DPO (Defects per opportunity) – (D/ (U * O))
DPMO (Defects per million opportunity) = (DPO * 1000,000)
Unit (U) Opportunity (O) Defect (D)
D=1956 O=5 U=3156
Total Opportunity =316*5=15780
DPMO=123954.3
Process Sigma = Normsinv(1-D/O) +1.5
Current sigma level = 2.65

Primary and Secondary data prove that yes really, we need an improvement in the credit risk assessment process of the bank so that to reduce the non-performing loan in the bank.

Improve

Now we need to find a possible solution to reduce or eliminate the problems. So, we can do it by Credit Worthiness Analyse and Credit Investigation Analysis. In credit Worthiness Analyse we will look for the 5c of the borrowers which will be the first analysis. Then we will do the credit investigation analyze which be done in different aspects.

Credit Worthiness Analyse

Determining a credit risk for a consumer credit analysis researcher is done when lenders look at five Cs: namely his or her credit history, repayment ability, money, loan conditions, and the last is collateral.

Character

The character of the borrowers plays an important role in the risk analysis. The banks need to know that the applicant/borrowers have a good background, good education qualification, industry knowledge, and experience which is required to operate the business.

Capacity

Capacity helps us to know that the borrower will be liable to pay back the loan from the profits generated by his business. Bank will work on how the repayment will take place. They will look upon his payment history, probability of successful repayment of loan all this factor is looked upon.

Capital

It is the amount of money invested by the borrowers into the business. This will tell about the commitment of the borrowers to the business. The bank wants to know that at what position the borrower is at risk if his business fails.

Collaterals

Guarantees or Collateral is a guarantee that the borrower will provide to the bank, in case of the loan amount is not paid bank can sell that security to repay the loan amount. Guarantees are pieces of evidence assuring the reparation of the loan to someone from a friend or family if he fails to pay back the loan.

Conditions

It describes the necessity of the loan and terms within which the loan is sectioned purpose can be anything like working capital, adding new equipment, increasing the stockpile, or the large term expense. The bank will consider factors like macroeconomics circumstances. The bank will check that the current condition of the business will improve or degrade.

Credit Investigation Analyse

Credit investigation makes a well-developed loan proposal analysis which can be done from six points of view and these are given below:

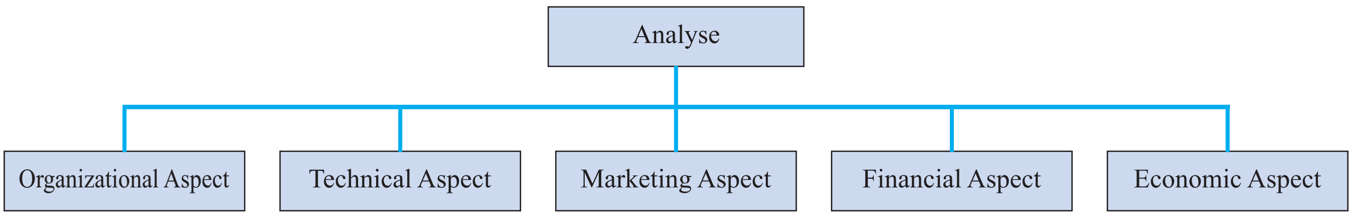


Figure 10- Classification of Analysis.

Figure 10 delineates a comprehensive analytical taxonomy encompassing five critical dimensions—organizational, technical, marketing, financial, and economic aspects—that collectively facilitate holistic credit risk assessment and institutional performance evaluation within commercial banking environments.

Organizational Aspect:

In this, we see the organizational activities which will take place. Checking the company profile, loan, and all other activities will be looked upon.

Company:

he information about the company will be checked that what are the product and service offered by the company, who are clients and who are the competitors in the business.

Borrower's History:

The history of the borrower will be checked his previous loan details will be checked. The company profile will be looked upon, that who is the founder, capital structure list of customers, suppliers, service providers all information relating to these will be collected.

Frequency of Borrowing:

It is the periods between which the loans are taken for the business. This is also looked upon because it establishes the borrower's reputation.

Loan :

Depending upon the need of the borrower then only we can decide the types of loan which is required. Then we can also decide the amount of money which will be required for the business.

Credit History:

The credit history of the borrower or the company will be looked upon. The irregularities and defaults of the previous loan will be looked upon.

Length of Commitment:

It depends upon the time taken to repay the loan. To protect some of the risks the bank mayor will charge a very higher rate of interest for longer terms of the loan.

Social and Community Considerations:

If the loan is used for a good purpose the bank may consider it because it will be contributing something good to society. The bank can also accept the unusual level of risk in this case.

Technical Aspect:

The decision on the location of the business has a large impact on the costs and revenue. Hence poor location may have a bad effect on the company which may lead to loss. So, if we have a company at a good location, it will have a good impact on the lender.

Marketing Aspect:

In the marketing aspects, we look for the most demand and supply and its analysis in the market through market data. We also look for product price people place strategy which is known as the 5'P of market.

Market Data:

This focuses on the study of the market into which the borrower will invest the money. The trend analysis will be done. Competitive Analysis will be done, public relations will be checked upon. This will help us to make a future prediction of the business.

Analysis of Market:

Looking up the current market is very important because it helps us to know and assess the depending on the company on exterior factors. The market shape of the company, its size, and demand for the product of the company are principal factors that should be looked upon.

Financial Aspect

Financial Information:

The financial information of the company will be looked upon in all the cases like during the best days and the worst days. The current balance sheet will be looked upon.

Credit Analysis Ratios

Liquidity Ratios:

It is the ratios that deal with the potential of the company to pay back to its creditors, expenses, etc. It helps us to know about the cash generation capacity of the company.

$$\text{Current Ratio} = \frac{\text{Current Liabilities}}{\text{Current Assets}}$$

$$\text{Current Ratio} = \frac{\text{(Current assets - inventory - prepaid expenses)}}{\text{(Current liabilities)}}$$

Solvency Ratios

$$\text{Solvency Ratio} = \frac{\text{(Net After-Tax Income + Non-Cash Expenses)}}{\text{(Short-Term Liabilities + Long-Term Liabilities)}}$$

Profitability Ratios – Profitability ratios show the potential of a company to earn income through their business.

$$\text{Gross Profit Margin} = \left(\frac{\text{Gross Profit}}{\text{Sales}}\right) \text{x } 100$$

$$\text{Operating Profit Margin} = \left(\frac{\text{Operating Profit}}{\text{Sales}}\right) \text{x } 100$$

$$\text{Net Profit Margin} = \left(\frac{\text{Net Income}}{\text{Sales}}\right) \text{x } 100$$

$$\text{Return on Assets} = \left(\frac{\text{Net Income}}{\text{Assets}}\right) \text{x } 100$$

$$\text{Return on Equity} = \left(\frac{\text{Net Income}}{\text{Shareholder's Equity}}\right) \text{x } 100$$

Efficiency Ratios:

They are the ability of the company to use its assets and liabilities to generate income. They can be used to know the company's performance.

$$\text{Asset Turnover Ratio} = \frac{\text{Sales}}{\text{Average Total Assets}}$$

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\text{Receivables Turnover Ratio} = \frac{\text{Credit Sales}}{\text{Average Accounts Receivable}}$$

$$\text{Accounts Payable Turnover Ratio} = \frac{\text{Supplier Purchase}}{\text{Average Accounts Payable}}$$

Cash Flow and Projected Cash Flow Analysis:

It is one of the valuable prime tools for the Credit Analyst. This guides them to know the true vision of the flow of monetary terms and the trade.

Collateral Analysis:

Any guarantee which the borrower will give must be negotiable. These aspects are extremely crucial because downfall on any of these things will take to the absolute breakdown of this constraint.

Economic Aspect:

The credit risk will also have a positive effect on the real exchange rate. If the dew to GDP rate goes down many companies will suffer a loss this will have a bad impact on the company, it may also lead to the shutdown of the company. If a company gets closed people working in it go jobless which will lead to a hike in the rate of unemployment.

Control

In the control phase, we see the future stage action to ensure that any divergence from the target is cured before they result in disease. So, after the improvement phase, we keep on checking that we are not getting diverted in some other direction.

No.	Risk Grading
1	Superior
2	Good
3	Acceptable
4	Marginal/Watch-list
5	Special Mention
6	Sub-standard
7	Doubtful
8	Bad & Loss

Figure 11 - Credit Risk Grading System.

Figure 11 establishes a standardized eight-category credit risk classification framework ranging from Superior and Good ratings for creditworthy borrowers to Sub-standard, Doubtful, and Bad & Loss designations for deteriorating credit quality, thereby enabling financial institutions to systematically differentiate borrower quality, allocate appropriate loan loss provisions, and implement risk-commensurate lending and monitoring strategies.

Grade 1 - Superior (Low Risk):

This grade means that the borrower is too good at repaying the loan. His all documents are ok.

Grade 2 - Good (Satisfactory Risk):

This will help us to know that paying back the position of the borrower is good. The borrower must have good liquidity and also low leverage.

Grade 3 – Acceptable (Fair Risk): This means that the risk not too much but fairly acceptable.

Grade 4 - Marginal (Watch list):

This means that there is a risk so the borrower is kept on the watch list.

Grade 5 - Special Mention:

It means that we need to keep a close look at the borrower.

Grade 6 – Substandard:

This means that the repayment of the borrowers is in doubt.

Grade 7 - Doubtful (non-performing):

This means that there is a chance of huge loss in this case the borrower is graded with the doubtful.

Grade 8 – Bad and Loss (non-performing):

This means that there will be full loss in this case. No progress in the company will be there in the future only losses will occur so it is graded with the bad and loss.

Conclusion

This study directs to provide the explanation for banks to more adequately check out the credit risk and to help in improving the lending decision process. This approach of six sigma will result in a lot of improvement in the lending process. Not only the banks but also the other lending party can use this method to reduce the credit risk. This will also help the bank to maximize the profit. If banks follow the improvement process it will help them to prevent excessive financial damage.

Future Scope

During the phase of entrepreneurship, people need money they will borrow it from the bank so there is a need for a good credit risk assessment process so that we can come to know that whether he will be able to pay back the debt or not. Money is required for every business so there is a lot of scope near in future in case of lending money. Small or Big projects required money so lenders need to focus on the credit risk. Lending Money will never stop so we need a good credit risk assessment process.

Theoretical Contribution

There are different ways in which credit risk assessment can be done but the six sigma process is the latest technology that can be used to solve credit risk. In the improvement process, all the managerial aspect has been used to reduce the credit risk. If banks follow, they will reduce the credit risk to a large extent. Even after improvement, we can also monitor the lending process to reduce money and time. There are different credit risk assessment methods then also the credit risk is getting increased every year so we need some innovative ideas to reduce this risk and six sigma is that idea. No aspect has been left out to solve the credit risk. It provides an overall overview of the risk that is being aroused while sanctioning a loan to a borrower. The complete directed approach helps the banks to settle down the complaints that are raised by their clients.

Practical Implications

The process of implication is very easy as we know that the lending process is not so easy for banks and the lender goes through a different process before they both understand each other. Banks process need some improvement because the existing process is bringing no changes as we can see that nonperforming loan is increasing per year. There is a requirement of the new innovative idea to solve the credit risk problems. The above process is very easy to solve the credit risk because it covers all the aspects of management to solve the credit risk. Commercial banks should try this to solve the credit risk problem.

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