

## **Causes of Credit risk, objectives of risk management, tools for risk management and risk mitigation - A study w.r.t. Mysore Commercial Banks**

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### **Abstract**

#### **1. Abstract**

Borrowers and business houses face job losses, decreased sales and profit on account of COVID-19 as the virus continue to spread around the globe. The banking activities are undergoing a change and globalisation has to be restructured. Around the globe the banking activities are restructured as per the need. The Bank of Korea has started to guarantee bills originating from local banks, China government requested the lenders to disinfect physical notes and place in quarantine. The US Federal Reserve has instituted a practice to isolate bank notes from Asia for 7 to 10 days. ([www.lightico.com](http://www.lightico.com)) The Economic Times report says that NPA ratio in India is likely to fare similarly to China (1.9% to 2%) but the credit cost would be worst (Economic Times 2020). A study has been taken up at Mysore to know customer respondents awareness of causes of credit risk, objectives, tools to risk management, risk management process and mitigation of risk.

**KEYWORDS :** Covid-19, Risk, Mitigation, Non performing assets, Credit cost.

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#### **2. Introduction**

Banks occupy a critical place and by sitting at the heart of the economy provides required funds to the corporate and individuals. The stability of the commercial banks in any economy is crucial to keep the system up and running. The functions executed by banks like savings mobilisation and financial allocation to the institutions, leads to economic growth and development. Among the risk that face banks, credit risk is one of the great concern to most bank authorities and banking regulatory. This is because credit risk is that risk that can be easily and likely the causes of bank failures. Credit risk is one of the most general risks that present dominantly in the financial market and a major risk faced by financial institutions (Duffie and Singleton 2003). Credit risk generally refers to the risk that a borrower will default on any type of debt by failing to make payments. The credit creation process works smoothly when funds are transferred from ultimate savings to borrowers. (Bernanke, 1993).

Banks face a multiple number of serious problems due to unsuccessful credit risk management but credit lending remains the chief activity of the banking sector throughout the world (Saeed et al. 2016). Over the last 15 years, the quality of loan and

its portfolios across many economies worldwide stayed comparatively stable until the emergence of financial crisis. Since then the quality of bank assets decline and with emerged Covid-19 pandemic further the bank assets may deteriorate quality wise. Innumerable customers are now being put under quarantine and consequently these borrowers loose their ability to pay loans particularly mortgages. Further, the business loans particularly small, medium enterprises are at risk due to forced shut down and social distance. The growth decline as of today is worse than expectation. It would be difficult to forecast the changed banking activities and banks has to face the associated risk. The study indicates the customer respondents at Mysore are aware of causes of risk, objectives of risk, tools for risk management and mitigation of risk.

### 3. Research Methodology

**3.1 Universe :** The study is confined to Mysore Urban. A sample of 200 covering different respondents considered for the study.

**3.2 Sources of Data :** The present study based on both primary and secondary data. Primary data is collected through a questionnaire and secondary sources includes journals and websites. Against the altered conditions which are emerged on account of COVID-19, data collection process was confined to e-mails and in some cases direct interview's

**3.3 Statistical tools used :** The opinions expressed by respondents are presented in the form of Likert 3 point scale and tabulated. ANOVA statistical test was performed to know the good fit of data and to study the variations.

**3.4 Samples :** Convenient sampling technique was adopted and sample structure is organised as below.

Respondents	Number	%
Government employees	30	15
Private Employees	30	15
Self employed	20	10
Entrepreneurs	50	25
Professionals	20	10
Business	50	25
Total	200	100

### 3.5 Limitations :

- (1) The study is confined only to Mysore.
- (2) Any generalisation requires further depth study.
- (3) In the altered conditions emerged on account of COVID-19 the problem of movement was faced but during free hours concerned entrepreneurs, employees and others were met and data was collected and email technique used to collect the data.

#### 4. Objectives :

- (1) To analyse respondents awareness of causes of credit risk.
- (2) To analyse the respondents awareness of objectives of risk management.
- (3) To study respondents awareness of tools for risk management.
- (4) To study risk management process.
- (5) To analyse the awareness of mitigation of risk

#### 5. Hypotheses

- 1) Respondents are not aware of causes of credits.
- 2) Respondents are not aware of objectives of risk management.
- 3) Respondents are not aware of tools for risk management.
- 4) Risk management process is unknown to respondents.
- 5) Respondents are not aware of mitigation process.

#### 6. Review of literature

Natalia Kunovalova et al. (2017) stated that it is necessary to use the methodology of factor analysis. Further, the authors have stated the main source of information in determining the level of credit risk for the creditor banks is the history of the client.

Eaterssam J. Al. Shakrcly (2017) expressed that managing of credit risk can help to minimise the loan loss. Further the author expressed that impact of the bank specific variables on banks profitability is not always uniform and differentiate between the pre and post-financial crisis periods due to changed in economic and financial conditions.

Shahida Saheb et la. (2018) have expressed that the eradication of non-performing loans is a necessary condition to improve the economic status. If the non-performing loans are kept existing and continuously rolled over, the resources are lockups in unprofitable section, thus hindering the economic growth and impacting the economic efficient.

Kou et al. (2019) have stated in their research work that they have used big data analysis, sentiment analysis and network analysis to measure the financed systemic risk. Machine learning methods are also used along with systematic financial risk management for controlling the overall risk faced by banks.

Zia Ur Rehiman, et al. (2019) remarked that hedging and capital adequacy ratio are also important strategies that can be examined and optimised by banks. Further, the researchers have stated that hedging is useful because entering into flexible contracts help reduce risk.

#### 7. Survey findings

**Table-1** highlights data about respondents awareness of causes of credit risk. 110 respondents out of 200 expressed strongly agree followed by 60 agree and 30 somewhat agree. Variation analysis of 110 respondents who said strongly agree reveals that 25 each

stated about the causes of inadequate supervision by the Central Bank and reckless lending, 22 expressed about inappropriate credit policies and limited institutional capacity, 20 felt about poor lending practices and COVID-19 18 indicated about massive licensing of banks.

Variation analysis of 60 respondents who said agree reveals that 17 spoke about inadequate supervision by the Central bank, 16 said about inappropriate credit policies and limited institutional capacity, 10 indicated about and COVID-19 poor lending practice, 9 voiced about reckless lending and 8 spoke about massive licensing of banks. Further, the variation analysis of 30 respondents who said somewhat agree reveals that 8 said about inadequate supervision by the Central Bank, 7 felt about reckless lending, 6 voiced about massive licensing of banks, 5 voiced about inappropriate credit policy and limited institutional capacity and 4 felt about poor lending practices and COVID-19. ANOVA fails to accept H<sub>0</sub> and accepts H<sub>1</sub> and it can be concluded here that there exist significant variation in the data.

**Table - 2** reveals data about awareness of objectives of risk management, 120 respondents out 200 respondents said strongly agree, 60 agree and 20 somewhat agree. Variation analysis of 120 respondents who have said strongly agree, 27 each stated about devising suitable monitoring mechanisms and assess risk profiles and guard against sickness, 26 felt to review performance periodically and 20 each expressed about refining analytical tools and to draw suitable strategies to attain prescribed level of exposure.

Variation analysis of 60 respondents who said agree reveals that 16 stated about assess risk profiles and guarding against sickness, 15 spoke about review the performance periodically, 12 indicated about drawing suitable strategies, 9 indicated about refine the analytical tools, and 8 felt about devising suitable monitoring mechanisms.

Variation analysis of 20 who have said somewhat agree, 5 each spoke about reviewing the performance periodically and to assess risk profiles and guard against sickness, 4 spoke about drawing suitable strategies and 3 each said about dividing suitable monitoring mechanisms and to refine analytical tools.

**Table-3** reveals data about respondents awareness of tools for risk management. 100 said strongly agree followed by 75 said agree and 25 somewhat agree. Variation analysis of 100 respondents reveals that 25 spoke about diversification of business, 20 each stated about fixation of exposure ceiling and securitization and reconstruction 18 indicated about insurance and hedging and 17 spoke about transfer of risk to another party at right time. Out of 75 who said agree, 18 each expressed about diversification of business, and securitization and reconstruction, 14 identified about transfer of risk, 13 stated about fixation of exposure ceiling and 12 felt about insurance and hedging. Out of 25 who said somewhat agree 6 each stated about diversification of business and securitization and reconstruction, 5 spoke about insurance and hedging and 4 each expressed about fixation of exposure ceiling and transfer of risk. ANOVA statistical tool fails to accept H<sub>0</sub> and accepts H<sub>1</sub> and here it is concluded here that there exist significant variation in the data.

**Table - 4** highlights data about respondents awareness of risk management process. 110 respondents expressed strongly agree about drivers of risk management process followed by 60 agree and 30 somewhat agree. Out of 110 who said strongly agree, 30 said about risk identification, understanding different kinds of risk etc., 28 stated about risk return trade off balancing of risk against earnings, 27 felt about risk assessment and 25 identified about risk control. Out of 60 who said agree, the variations reveals that 18 said about risk identification etc., 15 each about risk control and balancing of risk against earnings. and 12 viewed about risk assessment. Out of 30 who said somewhat agree, 8 each felt about risk identification etc. and risk control and 7 each spoke about risk assessment and balancing of risk against earnings. ANOVA test fails to accept H<sub>0</sub> and accepts H<sub>1</sub> and hence it is concluded here that there exist significant variation in the data.

**Table-5** highlights data about respondents awareness of mitigation of risk. 122 respondents said strongly agree, 54 agree and 24 some what agree. Variation analysis of 122 respondents who expressed strongly agree reveals, 24 respondents expressing about the driver of reduce the amount of credit extended, 23 spoke about risk based pricing, 21 revealed about asking lenders to buy credit insurance i.e., transfer of risk, 19 spoke about deposit insurance, 18 indicated about periodic report of financial condition and 17 stated about reduce the amount of credit.

Variation analysis of 54 respondents who said agree reveals that 11 stated about risk based pricing, 10 indicated about transfer of data, 9 each indicated about reduce the amount of credit extended and deposit insurance, 8 voiced about reduce the amount of credit and 7 felt about periodic report of financial condition. Further, the table also reveals about 24 respondents opinion about the drivers of risk management. Out of 24 respondents 5 each stated about risk based pricing, and transfer of risk, 4 each about periodic report of financial condition, and deposit insurance, and 3 each felt about reduce the amount of credit, and reduce the amount of credit extended. ANOVA fails to accept H<sub>0</sub> and accept H<sub>1</sub> and hence it is concluded that there exist significant variation in the data.

## 8. Conclusion

Mysore is a educational center in South India. The customers of commercial banks have expressed maturity over understanding drivers of credit risk, objectives, tools for credit risk management etc., They have expressed about frauds that are occurring in commercial banks. In order to protect the health of customers and employees customers recommended to keep the work place most hygiene. Further they have suggested to introduce rigorous but consumer friendly approaches. Inspiring the confidence of employees and banks in order to contain the deadly virus. Suggest the customers who are digital savvy to digitalize further using advanced digital solution.

**Table - 1 : Respondents awareness of Causes of Credit Risk**

Different causes of credit risk	SA	A	SDA	T
Inadequate supervision by the central bank	25	17	8	50
Poor lending practices and COVID-19	20	10	4	34
Massive licensing of banks	18	8	6	32
Reckless lending	25	9	7	41
Inappropriate credit polices & limited institutional capacity	22	16	5	43
Total	110	60	30	200

Source: Field Survey

Note : SA - Strongly Agree, A - Agree, SWA - Somewhat Agree

**Hypotheses**

H0	There exist no significant variation in the data	Reject
H1	There exist significant variation in the data	Accept

**ANOVA Table**

Source of Variation	SS	d.f.	MS	F-ratio	5% F-limit (from the F-table)
Between sample	653.3335	(3-1)=2	653.3335/2 = 326.6667	326.6667/9.8333 = 33.22	
Within sample	118.0000	(15-3)=12	118/12 =9.8333		(2,12) =3.88
Total	771.3335	(15-1)=14			

Source : Field Survey

**ANOVA Analysis**

The calculated value being 33.22 higher than the TV = 3.88@5% level of significance with  $df = v_1 = 2, v_2 = 12$  fails to accept H0 and accepts H1. Therefore it is concluded here that there exist significant variation in the data.

**Table - 2 : Respondents awareness of objective of risk management**

Objectives of risk management	SA	A	SDA	T
To review the performance periodically	26	15	5	46
To device suitable monitoring mechanism	27	8	3	38
To refine analytical tools	20	9	3	32
To assess risk profiles and guarding against sickness	27	16	5	48
To draw suitable strategies to attain the prescribed level of exposure and assure guidelines to business units	20	12	4	36
Total	120	60	20	200

Source: Field Survey

Note : SA - Strongly Agree, A - Agree, SWA - Somewhat Agree

**Hypotheses**

H0	There exist no significant variation in the data	Reject
H1	There exist significant variation in the data	Accept

**ANOVA Table**

Source of Variation	SS	d.f.	MS	F-ratio	5% F-limit (from the F-table)
Between sample	1013.3335	(3-1)=2	1013.3335/2 = 506.6667	506.6667/9 = 56.2963	
Within sample	108.0000	(15-3)=12	108/12 =9		(2,12) =3.88
Total	1121.3335	(15-1)=14			

Source : Field Survey

**ANOVA Analysis**

The calculated value being 56.2963 higher than the TV = 3.88@5% level of significance with  $df = v_1 = 2, v_2 = 12$  fails to accept H0 and accepts H1. Therefore it is concluded here that there exist significant variation in the data.

**Table - 3 : Respondents awareness of tools for risk management**

Awareness level of tools for risk management	SA	A	SDA	T
Diversification of business	25	18	6	49
Insurance and hedging	18	12	5	35
Fixation of exposure ceiling	20	13	4	37
Transfer of risk to another party at right time	17	14	4	35
Securitization and risk reconstruction	20	18	6	44
Total	110	75	25	200

Source: Field Survey

Note : SA - Strongly Agree, A - Agree, SWA - Somewhat Agree

**Hypotheses**

H0	There exist no significant variation in the data	Reject
H1	There exist significant variation in the data	Accept

**ANOVA Table**

Source of Variation	SS	d.f.	MS	F-ratio	5% F-limit (from the F-table)
Between sample	583.3335	(3-1)=2	583.3335/2 =291.667	291.6667/6.1667 = 47.297	
Within sample	74.0000	(15-3)= 12	74/12 =6.1667		(2,12) =3.88
Total	657.3335	(15-1)=14			

Source : Field Survey

**ANOVA Analysis**

The calculated value being 47.297 higher than the TV = 3.88@5% level of significance with  $df = v_1 = 2$  and  $v_2 = 12$  fails to accept H0 and accepts H1. Therefore it is concluded here that there exist significant variation in the data.

**Table - 4 : Awareness of risk management process**

Drivers of risk management process	SA	A	SDA	T
Risk identification understanding different kinds of risk and reasons behind risk	30	18	8	56
Risk assessment	27	12	7	46
Risk control	25	15	8	48
Risk return trade off - balancing of risk against earnings	28	15	7	50
Total	110	60	30	200

Source: Field Survey

Note : SA - Strongly Agree, A - Agree, SWA - Somewhat Agree

**Hypotheses**

H0	There exist no significant variation in the data	Reject
H1	There exist significant variation in the data	Accept

**ANOVA Table**

Source of Variation	SS	d.f.	MS	F-ratio	5% F-limit (from the F-table)
Between sample	816.6668	(3-1)=2	816.6668/2 =408.3334	408.3334/2.6667 = 153.1231	
Within sample	32.0000	(15-3)=12	32/12 =2.6667		(2,12) =3.88
Total	848.6668	(15-1)=14			

Source : Field Survey

**ANOVA Analysis**

The calculated value being 153.1231 higher than the TV = 3.88@5% level of significance with  $df = v_1 = 2$  and  $v_2 = 12$  fails to accept H0 and accepts H1. Therefore it is concluded here that there exist significant variation in the data.

**Table - 5 : Awareness of mitigation of risk**

Drivers of risk management	SA	A	SDA	T
Risk based pricing-charging high interest to the latest defaulters	23	11	5	39
Periodic respect of financial condition	18	7	4	29
Ask lenders to buy credit insurance transfer of risk	21	10	5	36
Reduce amount of credit	17	8	3	28
Reduce amount of credit extended	24	9	3	36
Deposit insurance	19	9	4	32
Total	122	54	24	210

Source: Field Survey

Note : SA - Strongly Agree, A - Agree, SWA - Somewhat Agree



### Hypotheses

H0	There exist no significant variation in the data	Reject
H1	There exist significant variation in the data	Accept

### ANOVA Table

Source of Variation	SS	d.f.	MS	F-ratio	5% F-limit (from the F-table)
Between sample	586.8756	(3-1)=2	586.8756/2 =293.4378	293.4378/3.5556 = 82.5283	
Within sample	53.3334	(18-3)=15	53.3334/15 =3.5556		(2,15) =3.68
Total	640.2090	(18-1)=17			

Source : Field Survey

### ANOVA Analysis

The calculated value being 82.5283 higher than the TV = 3.68@5% level of significance with  $df = v_1 = 2$  and  $v_2 = 15$  fails to accept H0 and accepts H1. Therefore it is concluded here that there exist significant variation in the data.

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