

# DOES SME LOAN REPAYMENT INFLUENCED BY SPECIFIC ATTRIBUTES OF BORROWERS – A STUDY ON SELECTED BANKS

*Rania Kabir,*

Lecturer

School of Business

Primeasia University, Dhaka, Bangladesh

## ABSTRACT

*In this article, the study is about the factors influencing SME loan repayment of borrowers. Some hypothesis has been developed to identify critical factors influencing recovery of loan. Relationships are measured on the basis of borrowers age; experience of the borrower; size of the Loan Amount; term of loan; income level, personal property and nature of business. For the study two sample private commercial banks have been chosen. Main focus of the study is given on the outcome that revealed from the hypothesis testing.*

**Keywords:** *Hypothesis testing, critical factor, loan recovery, term of loan.*

### Introduction:

In Bangladesh, 90 per cent private sector enterprises are SMEs. Around 25 per cent of the country's total labour force are working in the SME sector and contributes about 40 per cent of gross manufacturing output. Bangladesh Bank always encourages commercial banks and the financial institutions to supply adequate loan to SME entrepreneurs to promote the Small and Medium scale industries. Disbursement of SME loans by banks and non-bank financial institutions in March, 2014 increased by 19.95 percent compared with the same period of last year. Due to significant increase in credit disbursement in the Small Enterprise Financing sector prudential guidelines have been issued by Bangladesh Bank containing the minimum set of regulations to the banks for better management of credit.

### Literature Review:

Lending is a risky enterprise because repayment of loans can seldom be fully guaranteed. According to Brown, Falk, & Fehr, (2004), implicit contracts between lenders and borrowers, thus, banking relationships can motivate high effort and timely repayments. Credit market essentially collapses in the absence of acceptable borrower behavior. As repayments are not third-party enforceable, many borrowers default and lenders cannot profitably offer

credit contracts (Brown, Falk, & Fehr, 2004). The availability of information on past repayment behavior allows lenders to condition their offers on the borrowers' reputation. As borrowers with a good track record receive better credit offers, all borrowers have a strong incentive to sustain their reputation by repaying their debt (Orebiyi, 2002). Therefore, by repeatedly interacting with the same borrower, lenders establish long-term relationships that enable them to condition their credit terms on the past repayments of their borrower. As only a good reputation leads to attractive credit offers from the incumbent lender, borrowers have strong incentives to repay.

Out of the two selected bank for this study in December 2013, total micro, small and medium enterprise (MSME) investment portfolio of Al Arafah Islami Bank Limited is BDT 68,913.60 million, which is 52.96% of total Investment portfolio. Among them BDT 28949.30 million is under Small Enterprises and BDT 39964.30 million is under Medium Enterprises with a non-Performing loan to outstanding loans and advances rate of 2.7% for the year 2013. Brac Bank Limited served 433481 small and medium enterprises with BDT 248351 million on loan till 2013. Of this over BDT 33676 million has been disbursed to 20571 SMEs in 2013 with a non-Performing loan to outstanding loans and advances rate of 7.4%. The management of the banks depends on incentives to repay on time; instant arrears information and

delinquency tracking; immediate action to enforce repayment; and rigorous recovery in case of defaulting to achieve loan repayment (annual report: 2013). Oscar Karamagi (in 2011) made a research on borrower behavior, relationship lending and credit repayment performance in Centenary Bank. In his study he asserted that bank borrowers' behavior is determined by economic, cultural, social, psychological, personal and political factors. Borrower behavior is rarely the result of a single motive. Economics was the first discipline to construct a specific theory of buying behavior. The key economic factors that influence borrower behavior are income, expenditure patterns, cost of investment project, and marketing success of the project (Kon and Storey, 2003). It is upon this background that the study seeks to find whether there is any influence of borrower's personal attributes on loan repayment.

**Methodology:**

It is an exploratory research based on primary and secondary data. Throughout the article emphasize is given on hypothesis testing. For hypothesis testing, at the first phase, a pilot survey is undertaken to find out the factors influencing SME loan recovery of customers. During the pilot survey, 50 respondents are interviewed through survey questionnaire. Two private commercial banks are considered for the survey on the ratio of 50%. For the Hypothesis testing chi square-test has been used as the sample size is 50. Respondents from each bank are also selected conveniently. Sample size is distributed according to the following manner:

Bank	Number of Respondents
Al Arafah Islami	25
Bank Brac Bank	25
<b>Total</b>	<b>50</b>

Then at the second phase, collected information have been processed & compiled with the aid of MS Word & Excel. Necessary tables have been prepared on the basis of collected data and Chi – square test has been made to show the relationship between the loan repayment and the variables that influence the loan repayment of the customers.

**Results of Hypothesis Developed:**

**Hypothesis One:**

- H<sub>0</sub>:** There is no relationship between loan repayment and the age of the borrower
- H<sub>A</sub>:** There is a relationship between loan repayment and the age of the borrower

**Findings:**

The age limit for SME loan is 25 to 60. The segmented customer's age and their frequency have been shown in the following table:

**Table-1: Age and repayment frequency**

Age group	Frequency	Repaid	Non-Repaid
25-33	14	12	2
34-42	19	17	2
43-51	10	10	0
52-60	7	6	1
<b>Total</b>	<b>50</b>	<b>45</b>	<b>5</b>

Putting the related data into Excel Application Software the relation has been calculated as follows:

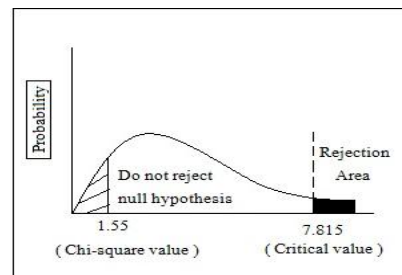
**Relationship of payment with age:**

Observed Value					
Variable	Age: 25-33	Age: 34-42	Age: 43-51	Age: 52-60	Total
Repay	12	17	10	6	45
Non-Repay	2	2	0	1	5
<b>Total</b>	<b>14</b>	<b>19</b>	<b>10</b>	<b>7</b>	<b>50</b>

Expected Value					
Variable	Age: 25-33	Age: 34-42	Age: 43-51	Age: 52-60	Total
Repay	12.6	17.1	9	6.3	45
Non-Repay	1.4	1.9	1	0.7	5
<b>Total</b>	<b>14</b>	<b>19</b>	<b>10</b>	<b>7</b>	<b>50</b>

**Interpretation:**

From the calculation we find that the Chi-square is 1.55 .At a significance level of 0.05 with 3 degree of freedom the critical value (rejection point) is 7.815 and which is greater than the Chi-square value (1.55) .The Chi-square value lies left to the rejection point.



As the computed value is within the acceptance zone, the null hypothesis cannot be rejected. Thus, we can say there is no relation between repayment behavior and the age of the clients.

**Hypothesis two:**

**H<sub>0</sub>:** There is no relationship between loan repayment and the experience of the borrower

**H<sub>A</sub>:** There is a relationship between loan repayment and the experience of the borrower

**Findings:**

Business experience has been segmented in five categories and Chi-square test has been conducted in the same process done for the previous variable. The following table summarizes the information regarding the number of repayment in each category.

**Table-2: Business Experience and repayment frequency**

Experience (year)	Frequency	Repaid	Non - repaid
1 to 5	13	10	3
6 to 10	12	11	1
11 to 15	8	7	1
16-20	11	11	0
20 above	9	9	0
<b>Total</b>	<b>50</b>	<b>50</b>	<b>5</b>

The range is based on the working experience of the borrower or his business *i.e.* how long is he within this business operation. Putting all the data into Excel Application Software in the same way done before, we have found the observed value as well as the expected value. The result is shown in the following contingency tables.

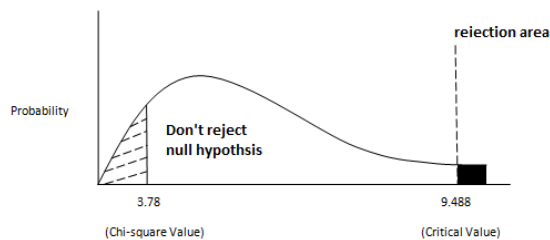
**Relation of payment with experience of business:**

Observed Value						
Variable	1 to 5	6 to 10	11 to 15	16 to 20	20 and above	Total
Repay	10	11	7	11	6	45
Non-Repay	3	1	1	0	0	5
<b>Total</b>	<b>13</b>	<b>12</b>	<b>8</b>	<b>11</b>	<b>6</b>	<b>50</b>

Expected Value						
Variable	1 to 5	6 to 10	11 to 15	16 to 20	20 and above	Total
Repay	11.7	10.8	7.2	9.9	5.4	45
Non-Repay	1.3	1.2	0.8	1.1	0.6	5
<b>Total</b>	<b>13</b>	<b>12</b>	<b>8</b>	<b>11</b>	<b>6</b>	<b>50</b>

**Interpretation:**

From the calculation we find that the Chi-square value (3.78) is smaller than the critical value (9.48). So, it lies within the acceptance area



Since the critical value is higher than the Chi-square value we can say that the null hypothesis is true and there is no relationship between the repayment behavior and the business experience level of the borrowers.

**Hypothesis three:**

**H<sub>0</sub>:** There is no relationship between loan repayment and the loan amount taken by the borrower

**H<sub>A</sub>:** There is a relationship between loan repayment and the loan amount taken by the borrower

**Findings:**

The following table shows the frequencies of repayment and default of AIBL:

**Table-3: Loan amount and repayment frequency**

Amount of Loan	Frequency	Repaid	Non - Repaid
200,000 – 4,00,000	15	15	0
6,00,000 – 8,00,000	22	21	1
8,50,000 – Above	13	9	4
<b>Total</b>	<b>50</b>	<b>45</b>	<b>5</b>

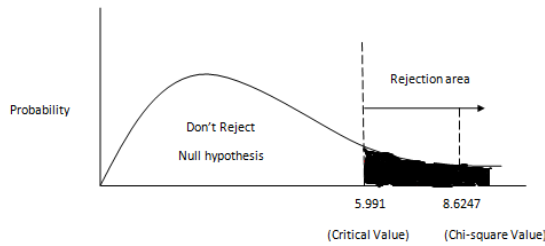
Using these data the relation has been calculated as follows:

**Relation of payment with loan amount:**

Observed Value				
Variable	200,000 – 4,00,000	6,00,000 – 8,00,000	8,50,000 – Above	Total
Repay	15	21	9	45
Non-Repay	0	1	4	5
<b>Total</b>	<b>15</b>	<b>22</b>	<b>13</b>	<b>50</b>

Expected Value				
Variable	200,000 – 4,00,000	6,00,000 – 8,00,000	8,50,000 – Above	Total
Repay	13.5	19.8	11.7	45
Non-Repay	1.5	2.2	1.3	5
<b>Total</b>	<b>15</b>	<b>22</b>	<b>13</b>	<b>50</b>

From the calculation we find that the Chi-square value (8.62) is greater than the critical value (5.99). So, it lies within the rejection area.



Since the critical value is lower than the Chi-square value we can say that the null hypothesis is rejected and repayment behavior of the borrowers is influenced by the amount of loan taken.

**Hypothesis four:**

- H<sub>0</sub>:** There is no relationship between loan repayment and the term of loan
- H<sub>A</sub>:** There is a relationship between loan repayment and the term of loan

**Findings:**

The repayment data of 50 clients has been shown here in the table below.

**Table-4: Loan term and repayment frequency**

Term of Loan (Month)	Frequency	Repaid	Non - repaid
12 – 24	12	10	0
26 – 36	24	24	1
36 – 48	13	11	4
<b>Total</b>	<b>50</b>	<b>45</b>	<b>5</b>

Using these data the relation has been calculated as follows:

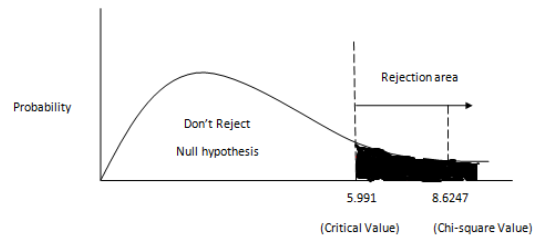
**Relation of payment with loan term:**

Observed Value				
Variable	12 – 24	26 – 36	36 – 48	Total
Repay	12	24	9	45
Non-Repay	0	1	4	5
<b>Total</b>	<b>12</b>	<b>25</b>	<b>13</b>	<b>50</b>

Expected Value				
Variable	1 to 5	6 to 10	11 to 15	Total
Repay	10.8	22.5	11.7	45
Non-Repay	1.2	2.5	1.3	5
<b>Total</b>	<b>12</b>	<b>25</b>	<b>13</b>	<b>50</b>

**Interpretation:**

The chi – square (8.62) is greater than the critical value (5.99). So, it lies within the rejection area.



So, it can be said that the loan term has influence on the repayment behavior of the customer. Thus the null hypothesis is rejected.

**Hypothesis five:**

- H<sub>0</sub>:** There is no relationship between loan repayment and the income level of the borrower
- H<sub>A</sub>:** There is a relationship between loan repayment and the income level of the borrower

**Findings:**

The table summarizes the data regarding the level of income of different borrowers and the number of repayment and non – repayment frequencies.

**Table-5: Income level and repayment frequency**

Income group	Frequency	Repaid	Non - repaid
10,000- 50,000	13	18	5
50,001-1,00,000	18	15	0
1,00,001 – 1,50,000	12	8	0
1,50,000 – above	2	4	0
<b>Total</b>	<b>50</b>	<b>45</b>	<b>5</b>

The Chi-square test shows the result as follows:

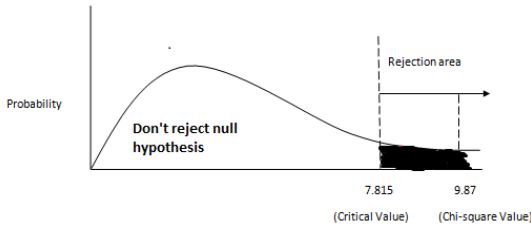
**Relation of repayment with Income:**

Observed Value					
Variable	10,000-50,000	50,001-1,00,000	1,00,001 – 1,50,000	1,50,000 – Above	Total
Repay	13	18	12	2	45
Non-Repay	5	0	0	0	5
<b>Total</b>	<b>18</b>	<b>18</b>	<b>12</b>	<b>2</b>	<b>50</b>

Expected Value					
Variable	10,000-50,000	50,001-1,00,000	1,00,001 – 1,50,000	1,50,000 – Above	Total
Repay	16.2	16.2	10.8	1.8	45
Non-Repay	1.8	1.8	1.2	0.2	5
<b>Total</b>	<b>18</b>	<b>18</b>	<b>12</b>	<b>2</b>	<b>50</b>

**Interpretation:**

From the calculation we find that the Chi-square value (9.87) is greater than the critical value (7.81). So, it lies within the rejection area.



So, it can be said that the income level has influence on the repayment behavior of the customer. Thus the null hypothesis is rejected.

**Hypothesis six:**

**H<sub>0</sub>:** There is no relationship between loan repayment and the personal asset of the borrower

**H<sub>A</sub>:** There is a relationship between loan repayment and the personal asset of the borrower

**Findings:**

The following table summarizes the data regarding the personal asset and frequencies of repayment.

**Table-6: Personal Asset and repayment frequency**

Personal asset	Frequency	Repaid	Non - repaid
1,00,000-5,00,000	19	17	3
5,00,001-10,00,000	15	12	2
10,00,001-20,00,000	10	10	0
2000000 - above	6	6	0
<b>Total</b>	<b>50</b>	<b>45</b>	<b>5</b>

The Chi-square test shows the result as follows:

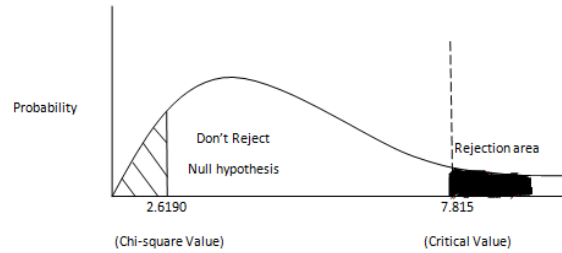
**Relation of repayment with personal asset:**

Observed Value					
Variable	1,00,000-5,00,000	5,00,001-10,00,000	10,00,001-20,00,000	2000000 - above	Total
Repay	17	12	10	6	45
Non-Repay	3	2	0	0	5
<b>Total</b>	<b>20</b>	<b>14</b>	<b>10</b>	<b>6</b>	<b>50</b>

Expected Value					
Variable	1,00,000-5,00,000	5,00,001-10,00,000	10,00,001-20,00,000	2000000 - above	Total
Repay	18	12.6	9	5.4	45
Non-Repay	2	1.4	1	0.6	5
<b>Total</b>	<b>20</b>	<b>14</b>	<b>10</b>	<b>6</b>	<b>50</b>

**Interpretation:**

From the calculation we find that the Chi-square value (2.61) is smaller than the critical value (7.81). So, it lies within the acceptance area



We can easily say that the personal asset of the SME Holders has no influence over the repayment behavior of the customer. Thus, null hypothesis is accepted.

**Hypothesis Seven:**

**H<sub>0</sub>:** There is no relationship between loan repayment and the nature of loan

**H<sub>A</sub>:** There is a relationship between loan repayment and the nature of loan

**Findings:**

The summary information has been shown in the following table:

**Table-7: Nature of loan and repayment frequency**

Nature of loan	Frequency	Repaid	Non - repaid
Working capital loan	13	13	0
Fixed asset purchase	27	24	3
Others	10	8	2
<b>Total</b>	<b>50</b>	<b>45</b>	<b>5</b>

Software calculation shows us the following result:

**Relation of repayment with nature of loan:**

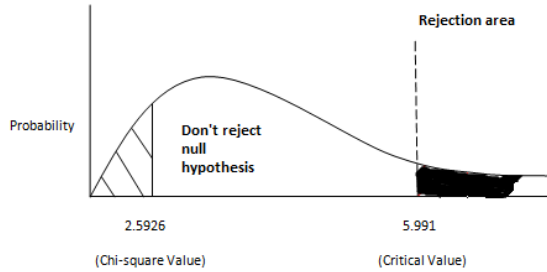
Observed Value				
Variable	Whole sale	Retail	Service	Total
Repay	13	24	8	45
Non-Repay	0	3	2	5
<b>Total</b>	<b>13</b>	<b>27</b>	<b>10</b>	<b>50</b>

Expected Value				
Variable	Whole sale	Retail	Service	Total
Repay	11.7	24.3	9	45
Non-Repay	1.3	2.7	1	5
<b>Total</b>	<b>13</b>	<b>27</b>	<b>10</b>	<b>50</b>

**Interpretation:**

From the calculation we find that the Chi-square value (2.59) is smaller than the critical value (5.99). So, it lies within the acceptance area.



The calculation shows that there is no significant relationship of nature of business over the repayment behavior. Thus, null hypothesis is accepted.

**Findings:**

The study has obtained the following findings:

- ❖ The amount borrowed can be a significant factor to influence SME loan recovery. The bigger the volume of the loan amount, the bigger the pressure on the borrower’s side to repay it. It may make the borrower unable to bear the burden of interest cost and loan instalment. So, there is possibility that the borrower will ultimately default to repay.
- ❖ The longer the loan term the riskier the loan is. Future is always unpredictable. Even decision made with sufficient data may fail in the long term. There is strong relationship between loan term and customers loan recovery. The borrowers become reluctant to repay the loan with the passage of time.
- ❖ Nature of financing does not influence the loan recovery
- ❖ Here we can see the highest income group and the other moderate income group have the lowest default rate. On the other hand, the lowest income group has the highest default rate. So, there might have some influences of income level of the borrowers on loan recovery.
- ❖ There is no relationship between loan recoveries with the age of the borrower, experience of the borrower, personal asset of the borrower.

- ❖ This is confirmation that borrower values, attitudes, experience and beliefs had a positive effect on the improvement of loan repayment rate.

**Conclusion:**

The SME loan disbursement has increased in recent days as the central bank is continuously encouraging new entrepreneurs to take SME loans from banks and financial institutions. The development of SMEs can reduce economic disparity from society and help the country to create more employment opportunity. So we need to expand SME loan allocation across the country for the betterment of the economy and to ensure the recovery of SME loan at the same time.

**References:**

- [1] Survey data (Primary)
- [2] Asian Development Bank (2012). Proposed Loan People’s Republic of Bangladesh: Small and Medium-Sized Enterprise Development Project
- [3] Ahmed Kashfia. (2012). Performance Evaluation of SMEs of Bangladesh
- [4] Bangladesh Bank (2011). Prudential Regulations for Banks: Selected Issues
- [5] Cole, R.A., Goldberg, L.G. and White, L.J. (2004). The Micro Structure of Small Business Lending by Large and Small Banks, Journal of Financial and Quantitative Analysis
- [6] Karamagi, Oskar. (2011). Borrower Behavior, Relationship Lending and Credit Repayment Performance in Centenary Bank, Research report of Makerere University
- [7] Kon, Y. and Storey, D.J. (2003). A Theory of Discouraged Borrowers. Small Business Economics
- [8] Monetary Policy Department Bangladesh Bank (2014). Major Economic Indicators: Monthly Update, Volume 7
- [9] Orebiyi, J.S. (2002). “Agricultural loan repayment and its determinants in the rural credit markets of Imo state Nigeria”, International Journal of Agriculture and Rural Development, Vol. 3.
- [10] Annual report (2013): Al Arafah Islami Bank Ltd.
- [11] Annual report (2013): Brac Bank Ltd

\*\*\*\*\*