CHAPTER 3

RESEARCH METHODOLOGY

3.1 STATEMENT OF THE PROBLEM

One of the most imminent problems related to the MSME sector is the lack of availability of authentic data. As quoted by Gandhi, Deputy Governor, RBI (From 2014 to 2017),

"The informal segment within the SME sector is so vast and, by definition, no authentic information about them is available. However, various data sources and studies indicate that most of the small firms rely on internal financing and informal sources. Studies about SMEs in India have reported that as high as 93 per cent of their financing needs are met by internal and informal sources" (Gandhi, 2015).

Moreover the situation is worse in the Northeastern region of the country. As per the Annual Report of the Govt. of India on MSME (2019-20), Assam stood at 16th position out of 28 states and 8 Union Territories in India with respect to number of registered MSMEs and at 18th position in case of unregistered MSMEs as per the latest Census carried out in 2006-07.

A dichotomy exists in the lending scenario of MSMEs. On one hand, more credit flow to MSMEs are needed in order to further accentuate their growth, but on the other hand, commercial banks have reportedly experienced high NPAs from this sector due to which the profitability of the banks will be affected. This study therefore aims to find out the problematic factors associated with lending to MSMEs and find out various measures to overcome such issues.

3.2 RATIONALE OF THE STUDY

It was found from review of existing literature that most of the study focuses on the problems being faced by MSMEs. The role of the commercial banks and government institutions like DIC has not been thoroughly examined. This study has also tried to take the bankers' point of view and at the same time throw some light on MSME-DIC-Bankers relationships. The role being played by DIC is very important and it has larger

potential as it has the specialisation and resources to maintain closer relationships with MSMEs and help them grow. The information asymmetry problem faced by banks in case of MSMEs need to be addressed to improve bank-MSME relationship.

3.3 OBJECTIVES

The objectives of the study are:

- To analyse commercial banks' contribution towards financing MSMEs in Assam.
- To examine the constraints experienced by MSMEs of Assam in acquiring finance from banks.
- 3. To identify the obstacles faced by banks in financing MSMEs in Assam.

In order to study the scenario of bank lending in Assam (objective 1), secondary data has been used. The results are summarized in Chapter 5. In order to fulfil objective 2, primary data was collected from MSMEs and the findings are elaborated in Chapter 6. The role of DIC has been outlined in Chapter 7. In order to find out perception of banks (objective 3), primary data was collected from banks and the results reported in Chapter 8.

3.4 SCOPE OF THE STUDY

The study concentrates on the function of lending by banks to the MSME sector and the associated problems experienced by both MSMEs and banks in Assam. Three districts with highest number of registered MSMEs in Assam have been selected for the study. MSME units which have borrowed from banks have been included for the purpose of primary research. All MSMEs, that have registered with DIC as well as those that have not, have been considered for primary survey. The commercial banks, co-operative banks and regional rural banks operating in the state of Assam which have lent to the selected MSME units have been included for the primary survey.

3.5 PERIOD OF THE STUDY

For secondary sources, data has been collected from the year 2006 onwards, since the inception of the MSMED Act, 2006; whence forth annual reports of MSMEs have been prepared by the Ministry of MSMEs. For secondary data of banks, statistics has been

collected from 2010 to 2018. For primary data collection, field data was collected during 2016-2018.

3.6 LIMITATIONS OF THE STUDY

The study being for academic purpose with a fixed tenure and certain fieldwork constraints is not without limitations, which can be listed as follows:

- 1. The study has excluded non-commercial banks and non-banking institutions that provide finance to MSME sector.
- The study has excluded the role of National Small Industries Corporation (NSIC), Khadi & Village Industries Commission (KVIC) and Khadi and Village Industries Board (KVIB) in their assistance with MSME financing.
- 3. The geographical coverage of the study is limited to three districts in Assam based on the highest concentration of MSMEs.

3.7 RESEARCH DESIGN

The research work is empirical in nature including primary as well as secondary data. The primary section of research has taken into account both the MSMEs' and bankers' responses using questionnaires. Data was collected from 750 MSMEs who had borrowed from banks, across three selected districts of Assam, namely Kamrup (including Kamrup Metro), Nagaon and Dibrugarh. 136 MSMEs that had not borrowed from banks were also included for the study to throw light on the flipside. The bankers' responses were collected from the same selected districts based on the responses of the MSME units. For the secondary research, data has been collected from DIC offices, bank websites, SLBC offices and website of Ministry of MSME. A diagrammatical representation of research design is shown below:

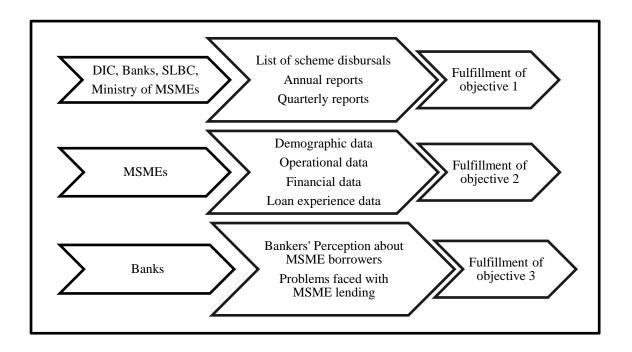


Figure 3.1: A diagrammatical representation of the research design

3.7.1 Source of Data Collection

The sources of data collection are as follows:

Primary sources: Primary data was collected from field visits to MSME units and banks.

Secondary sources: RBI annual reports, SLBC quarterly and annual reports, DIC annual reports and lists, MSME annual reports, journals, articles and data from websites and other published sources were used to find out inferences regarding aspects of commercial bank lending towards MSMEs.

3.7.2 Research Instrument

The primary data was collected district-wise, using structured questionnaires. Structured questionnaires using five point Likert scale was used to measure the selected variables for the study (Appendix 1 and 2).

3.7.3 Geographical Area

The geographical area for the study is the state of Assam as shown in Figure 3.2. Assam is called the gateway of Northeast India especially in terms of trade and commerce.



Figure 3.2: Map of India [Source: Map of India⁴ (edited in MS Office Paint)]

3.7.4 Population

The study population includes all registered and unregistered MSMEs in Assam which have financial experience in terms of borrowing from public, private, co-operative and regional rural banks in Assam. Since the new definition of MSMEs and registration portal Udyam were implemented after the data collection relevant period, registration status has been considered as per EM II under DIC (explained in detail in chapter 7). Udyog Adhar registration was implemented in 2015 but due to requirement of Aadhar number for registration under the portal, number of registrations was very limited in Assam during the data collection period. Few MSME units who had not borrowed from banks were also included to understand their side of the issue. The definition for registered and unregistered MSMEs which was in effect till 31st July, 2020 has been given by the Ministry of MSME (Registration as SSI, MSME - Coir Board, 2015) as follows:

4 https://www.mapsofindia.com/(2018)

Registered MSMEs: Enterprises registered with District Industries Centres in the State/UTs., Khadi and Village Industries Commission/ Khadi and Village Industries Board, Coir Board as on 31.03.2007 and factories under the coverage of section 2m (i) and 2m (ii) of the Factories Act, 1948 used for Annual Survey of Industries having investment in plant & machinery up to ₹10 crore, are considered to belong to registered sector.

Unregistered MSMEs: All MSMEs engaged in the activities of manufacturing or in providing/ rendering of services, not registered permanently or not filed Entrepreneurs Memorandum Part-II/ [EM-II] with State Directorates of Industries/District Industries Centres on or before 31-3-2007 are called unregistered MSMEs. The definite population size for unregistered MSMEs is not available. A sample survey conducted by the Govt. of India in 2006-07 and reports from Economic Census (2005) reports that the strength of the unregistered sector is approximately more than 6 lakhs in Assam.

Commercial, Cooperative and Rural Banks in the State of Assam: The study population includes 33 commercial banks, 2 regional rural banks and 4 co-operative banks operating in Assam. Table 3.1 shows a list bank branches in the state of Assam for the year 2014-15.

Table 3.1: Table Showing Distribution of Branches of Banks in Assam the Year 2014-15

| Sl No. | Bank Name | Total no. of branches |
|--------|-----------------------|-----------------------|
| 1 | Allahabad Bank | 71 |
| 2 | Andhra Bank | 8 |
| 3 | Bank of Baroda | 32 |
| 4 | Bank of India | 49 |
| 5 | Bank of Maharashtra | 10 |
| 6 | Canara Bank | 69 |
| 7 | Central Bank of India | 124 |
| 8 | Dena Bank | 9 |
| 9 | HDFC | 44 |
| 10 | Federal Bank | 12 |
| 11 | ICICI Bank | 57 |
| 12 | IDBI Bank | 24 |
| 13 | Indian Bank | 35 |
| 14 | Indus Ind Bank | 17 |
| 15 | Indian Overseas Bank | 29 |

| 16 | Oriental Bank of Commerce | 16 |
|----|----------------------------------|------|
| 17 | Punjab National Bank | 59 |
| 18 | Punjab And Sindh Bank | 9 |
| 19 | State Bank of Bikaner and Jaipur | 1 |
| 20 | State Bank of India | 336 |
| 21 | Standard Chartered Bank | 1 |
| 22 | Syndicate Bank | 25 |
| 23 | United Bank of India | 241 |
| 24 | UCO Bank | 147 |
| 25 | Union Bank of India | 67 |
| 26 | Axis Bank | 37 |
| 27 | Vijaya Bank | 18 |
| 28 | Yes Bank | 8 |
| 29 | Corporation Bank | 12 |
| 30 | Kotak Mahindra Bank | 3 |
| 31 | South Indian Bank | 2 |
| 32 | Karnataka Bank | 2 |
| 33 | HSBC | 1 |
| 34 | Assam Gramin Vikash Bank | 402 |
| 35 | Langpi Dehangi Rural Bank | 57 |
| 36 | Assam Apex Co-Operative Bank | 67 |
| 37 | Co-Operative City Bank | 6 |
| 38 | Industrial Co-Operative Bank | 4 |
| 39 | Bharatiya Mahila Bank | 1 |
| | Grand Total | 2112 |

Source: State Level Bankers' Committee Background Paper Agenda for March 2015 meeting

The sample for the study has been selected as the top three districts in the state of Assam on the basis of the highest number of MSMEs registered as 31st March, 2015.

- 1. Kamrup (9,270 units)
- 2. Dibrugarh (3,217 units)
- 3. Nagaon (2,272 units)

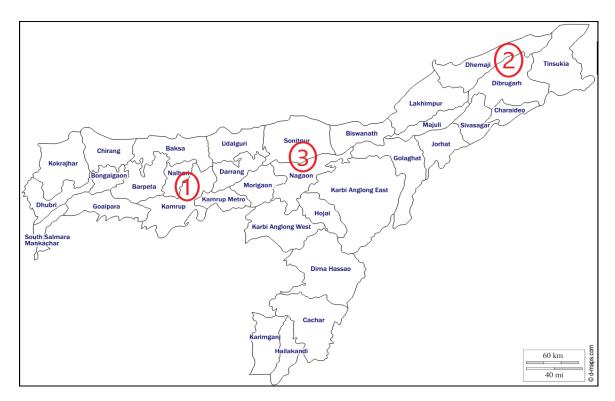


Figure 3.3: Map of Assam [Source: Assam District map⁵(2014) (edited in MS office paint)]

3.7.5 Sample Size

The sample size has been calculated using the formula which was published by the research division of the National Education Association in the article 'Small Sample Techniques', for determining sample size. The formula is considered appropriate for the research because has been widely used in related researches and is considered suitable for probability sampling method.

$$s = \chi^2 NP (1 - P) \div ME^2 (N-1) + \chi^2 P (1 - P)$$

where,

s = required sample size.

 χ^2 = the table value of chi-square for 1 degree of freedom at the confidence level of 95% (3.841).

N =the population size.

P = the population proportion selected as 0.5 which gives the maximum sample size.

d = the degree of accuracy expressed as a proportion (.05).

⁵ www.assampanchayat.gov.in

Using the sample size calculator, we arrived at sample size in the following manner:

Registered MSMEs: Taking the total number of registered MSMEs in these three districts i.e. 14,759 as the population, the sample size for registered MSME units works out to 375 units (Appendix 4). The sample size for each selected district has been determined using proportionate stratified sampling as follows:

Kamrup 235Dibrugarh 82Nagaon 58

Unregistered MSMEs: The population size being unavailable for unregistered MSMEs, the sample size has been taken at par with the sample size of registered MSMEs as 375 units and has been divided in the same proportion in selected districts.

The total sample size comes to 375 (Registered MSMEs) + 375 (Unregistered MSMEs) = 750 units. It is found to be well conforming to sample sizes selected for similar studies.

Table 3.2: Related Studies for Sample Size Selection

| Author | Study Area | Sample Size |
|---|--|-------------|
| Jha and Agrawal (2010) | "Prospects and problems of small scale industries in the district of Varanasi, Uttar Pradesh". | 250 units |
| Bekele and Worku(2008) | "Women entrepreneurship in MSMEs in Ethiopia". | 500 units |
| Reddy | "Problems and contributions of small businesses towards | 300 units |
| (2007) | household income in Fiji" | |
| Bohra (2017) | To study the financing pattern of small business enterprises and traders in Guwahati city | 572 units |
| Chowdhury, Yeasmin & Ahmed (2018) | "Problems and perspectives of women entrepreneurs regarding finance from commercial banks" | 152 units |

Commercial, Cooperative and Rural Banks in the State of Assam: The sample selected for the study will be all operating bank branches in the selected three districts which are Kamrup, Nagaon and Dibrugarh. Table 3.3 shows the number of bank branches in the selected districts in the year 2015-16, when the field data was collected:

Table 3.3: Number of Bank Branches Operating in Dibrugarh, Kamrup and Nagaon in the Year 2015-16

| Bank Name | Dibrugarh | Kamrup | Nagaon | Total |
|----------------------------------|-----------|--------|--------|-------|
| Allahabad Bank | 11 | 12 | 6 | 29 |
| Andhra Bank | 1 | 4 | 0 | 5 |
| Bank of Baroda | 1 | 11 | 2 | 14 |
| Bank of India | 3 | 15 | 1 | 19 |
| Bank of Maharashtra | 2 | 2 | 1 | 5 |
| Canara Bank | 4 | 17 | 2 | 23 |
| Central Bank of India | 8 | 38 | 8 | 54 |
| Dena Bank | 2 | 2 | 0 | 4 |
| HDFC | 4 | 17 | 2 | 23 |
| Federal Bank | 1 | 5 | 1 | 7 |
| ICICI Bank | 3 | 18 | 2 | 23 |
| IDBI Bank | 1 | 8 | 2 | 11 |
| Indian Bank | 4 | 9 | 2 | 15 |
| Indus Ind Bank | 2 | 9 | 1 | 12 |
| Indian Overseas Bank | 4 | 15 | 2 | 21 |
| Oriental Bank of Commerce | 1 | 6 | 1 | 8 |
| Punjab National Bank | 4 | 16 | 3 | 23 |
| Punjab And Sindh Bank | 1 | 5 | 1 | 7 |
| State Bank of Bikaner and Jaipur | 0 | 1 | 0 | 1 |
| State Bank of India | 25 | 68 | 20 | 113 |
| Standard Chartered Bank | 0 | 1 | 0 | 1 |
| Syndicate Bank | 3 | 10 | 1 | 14 |
| Union Bank of India | 3 | 16 | 1 | 20 |
| UCO Bank | 7 | 28 | 13 | 48 |
| United Bank of India | 16 | 34 | 13 | 63 |
| Axis Bank | 2 | 12 | 2 | 16 |
| Vijaya Bank | 2 | 9 | 1 | 12 |
| Yes Bank | 0 | 3 | 1 | 4 |
| Corporation Bank | 1 | 3 | 0 | 4 |
| Kotak Mahindra Bank | 1 | 2 | 0 | 3 |
| South Indian Bank | 0 | 1 | 0 | 1 |
| Karnataka Bank | 0 | 2 | 0 | 2 |
| HSBC | 0 | 1 | 0 | 1 |
| Assam Gramin Vikash Bank | 16 | 30 | 33 | 79 |
| Langpi Dehangi Rural Bank | 0 | 0 | 0 | 0 |

| Assam Apex Co-Operative Bank | 4 | 10 | 6 | 20 |
|------------------------------|-----|-----|-----|-----|
| Co-Operative City Bank | 0 | 6 | 0 | 6 |
| Industrial Co-Operative Bank | 0 | 4 | 0 | 4 |
| Bharatiya Mahila Bank | 0 | 1 | 0 | 1 |
| Total Number Of Branches | 137 | 451 | 128 | 716 |

Source: Online data: Official websites of banks,

Offline data: Personal visit to Local Head Offices, Zonal offices.

Keeping in consideration the total size of bank branches as 716 in the three selected districts collectively, the sample size in case of banks in Assam has been selected as 172 using the aforementioned sample size calculation technique. The selected sample size comprises 24% of total number of bank branches which is in tandem with similar studies (Abor and Biekpe, 2007). Sample size of each selected district has been arrived at using proportionate stratified sampling as follows:

Kamrup 92

Dibrugarh 54

Nagaon 26

Additionally, 136 MSMEs who have not borrowed from banks have also been included for the study.

3.7.6 Sampling Technique

The sampling technique to be used for the study is mixed sampling.

Registered MSME units: Stratified Random Sampling method has been used to choose samples of MSME units. The list of registered MSMEs was collected from DIC office, Bamunimaidam and the samples were generated using the website www.stattrek.com, an open web resource, which is popularly used to generate random numbers in research (Nishishiba et al., 2013; Beaudry et al., 2016; Patten & Newhart, 2017). It was observed during data collection that many of the registered MSMEs were found to be untraceable or have closed down or some MSMEs refused to participate in the survey. Therefore, random numbers were generated repeatedly in the subsequent phases of fieldwork in order to find a total of 375 units excluding those MSMEs from whom data could not be collected. A screenshot of the first random number generator result has been attached in Appendix 5.

Unregistered MSME units: In case of unregistered units, in the absence of a sampling frame, snowball and convenience sampling procedure has been used. Convenience was based on various factors like:

- (i) Availability and access to concrete financial data: Competent authority must be available and willing to answer the questionnaire,
- (ii) Intention to avail institutional credit: The enterprise must have already availed credit from banks.

Banks: Judgemental sampling procedure has been used. The banks from where MSMEs had availed credit were selected for the survey according to ratings assigned by the MSME borrowers.

3.8 STATISTICAL TOOLS

Statistical tools such as various tests like ANOVA, t-test, Kruskal Wallis etc. and ordinal logistic regression were used to study the relationship and association among different variables.

3.9 VARIABLES

In order to find variables suited for the study various journals, books, articles, government reports, agency reports, etc. were consulted. Standard questionnaires used by Ministry of MSMEs and reputed research agencies were considered for selection of variables. A preliminary feasibility survey subsequently followed by a pilot survey was conducted among banks and MSMEs in Tezpur and Guwahati in 2015-16 to help modify the scale to fit the unique demographics of Northeastern India. Maharatna & Sinha, (2011) and Singh (1987) in their research papers highlighted how Northeastern India reflected distinct characteristics when compared to the rest of the country. The variables reflecting demographic profile of MSME units are as follows:

Table 3.4: List of Demographic Variables for MSME units

| CATEGORY | VARIABLES | SOURCES |
|-------------|--------------|------------------------------|
| | Gender | Coad and Tamvada,2011; |
| Damagraphia | Age | Alamelu and Bhaskaran, 2009; |
| Demographic | Education | IFC report, 2016; |
| | Type of unit | Bigsten, 2003; |

| Location of unit | Yitayal, 2004; |
|-----------------------|-------------------------|
| Form of business | Harvie et al. 2010; |
| Nature of business | McKenzie & Wolfe, 2004; |
| Type of industry | Mandala et al., 2012 |
| Ownership of premise | |
| Geographical coverage | |

The variables reflecting financial profile of MSME units are as follows:

Table 3.5: List of Financial Variables for MSME units

| CATEGORY | VARIABLES | SOURCES |
|---------------------|--|------------------------------|
| Size | Capital invested | Coad and Tamvada,2011; |
| | Annual turnover | Beck and Kunt, 2015; |
| | Number of workers | Yifu et al., 2006; |
| | | Nkundabanyanga et al., 2014; |
| | | Skosples, 2012 |
| Registration status | Whether registered | Alamelu and Bhaskaran, 2011; |
| | | Singh and Wasdani, 2016; |
| | | Shalukhe, 2016 |
| Funds | Institutional sources | Coad and Tamvada,2011; |
| | Non-institutional sources | Singh and Wasdani,2016; |
| | Whether satisfied with current source of | IFC report, 2016 |
| | funds | |
| Structure | Documents available with MSMEs | Singh and Wasdani,2016 |

The variables reflecting borrowing experience of MSME units are as follows:

Table 3.6: List of Difficulty relating to Bank Borrowing Variables for MSME units

| CATEGORY | VARIABLES | SOURCES |
|--------------|----------------------------------|--------------------------|
| Awareness | Source of information about bank | Reddy,2007; |
| | Credit facilitation factor | IFC report, 2016; |
| | | Singh and Wasdani, 2016; |
| | | Falkena et al. 2001: |
| | | Rambo 2013; |
| | | Frame et al., 2001; |
| | | Alamelugeeta, 2015; |
| | | Arora et al. 2012 |
| Loan details | Type of loan availed | Kumar, Batra and Sharma, |
| | Utilisation of loan | 2009; |

| | Amount applied | IFC report, 2016; |
|--------------------|--|---|
| | Amount sanctioned | Singh and Wasdani,2016; |
| | Percentage of capital | Yifu et al., 2006 |
| | Whether satisfied with sanctioned amount | |
| | Sanction time | |
| Application | Application format | Kumar, Batra and Sharma |
| | Details demanded in the application | 2009; |
| | procedure | IFC report, 2016; |
| | Processing charges associated with | RBI recommendations |
| | application procedure | Yeasmin & Ahmed 2016 |
| | Time required for application process | Patnaik et al. 2016; |
| | Enclosures required | Mandala et al., 2012 |
| | - | |
| Documentation | Financial statements required for loan | Kumar, Batra and Sharma |
| | processing | 2009; |
| | Requirement of clearance documents | RBI recommendations; |
| | | Singh and Wasdani, 2016 |
| | | Yeasmin & Ahmed 2016 |
| | | Kumar, Batra & Sharma 2009 |
| | | McKenzie & Wolfe, 2004 |
| | | Mandala et al., 2012 |
| Staff support | Staff support during application | Kumar, Batra and Sharma, 2009 |
| | Query handling | |
| | Release of documents after loan | |
| | repayment | |
| | Timely, appropriate and relevant | |
| | information | |
| | Staff attitude in loan sanctioning | |
| Terms and policies | Rate of interest charged | Reddy, 2007; |
| | Types of assets required as collateral | Bedman Narteh ,2013; |
| | | |
| | security | Diagne and Zeller, 2002; |
| | security Terms and conditions for availing | Diagne and Zeller, 2002; Foltz, 2004; |
| | Terms and conditions for availing | Foltz, 2004; |
| | Terms and conditions for availing relaxation on repayment | Foltz, 2004; Kihimbo et al. 2012; |
| | Terms and conditions for availing relaxation on repayment Collateral security requirements | Foltz, 2004; Kihimbo et al. 2012; Narteh, 2013; |
| | Terms and conditions for availing relaxation on repayment Collateral security requirements Increase of the sanctioned limit | Foltz, 2004; Kihimbo et al. 2012; Narteh, 2013; Mandala et al., 2012; |
| | Terms and conditions for availing relaxation on repayment Collateral security requirements Increase of the sanctioned limit Amount of relaxations (if any) offered on | Foltz, 2004; Kihimbo et al. 2012; Narteh, 2013; Mandala et al., 2012; Ikasari et al, 2016; |
| | Terms and conditions for availing relaxation on repayment Collateral security requirements Increase of the sanctioned limit Amount of relaxations (if any) offered on repayment | Foltz, 2004; Kihimbo et al. 2012; Narteh, 2013; Mandala et al., 2012; Ikasari et al, 2016; Sambrani et al. 2016; |
| | Terms and conditions for availing relaxation on repayment Collateral security requirements Increase of the sanctioned limit Amount of relaxations (if any) offered on | Foltz, 2004; Kihimbo et al. 2012; Narteh, 2013; Mandala et al., 2012; Ikasari et al, 2016; |

| Sanction process | Process of analysing credit worthiness | Reddy,2007; |
|------------------|---|--------------------------|
| | Valuation of assets | Sambrani et al. 2016 |
| | Intimations about disputes in approvals | |
| | Feasibility analysis procedure | |
| | Examination and review procedures | |
| | Time gap between application and sanction | |
| Attitude | Attitude of the bank | Reddy,2007; |
| | Promotional drives by banks for inviting | IFC report, 2016; |
| | MSMEs | Price, Rae & Cini, 2013; |
| | | Goswami, 2014; |
| | | Ikasari et al, 2016; |
| | | Paramasivam et al. 2013 |
| Support Service | Grievance redressal | Reddy,2007 |
| | Customer confidentiality. | |
| Post sanction | Procedure of releasing of funds | Reddy,2007; |
| | Loan utilisation monitoring process | Kihimbo et al. 2012 |
| | Repayment reminders made by the bank | |
| | Time period for repayment | |
| | Repayment procedure | |
| | Submission of updated business plan | |
| | Procedure for release of security by bank | |
| | after repayment. | |

The variables reflecting perception of banks towards MSME units are as follows:

Table 3.7: List of Perception Variables for bank

| CATEGORY | VARIABLES | SOURCES |
|---------------------|---------------------------------|----------------------------------|
| Perception of MSMEs | Importance of MSME as a sector | Gandhi, 2015; |
| | | IFC report, 2016; |
| | | Yadav, 2012 |
| | | |
| Requirements for | Collateral security. | Gandhi, 2015; |
| loans | Proper documents | Singh et al, 2006; |
| | Proper financial records | IFC report, 2016; |
| | Third party guarantor. | Mullei and Bokea, 2000 (as cited |
| | Relationship with the bank. | in Osano et al. 2016); |
| | Relationship with loan officer. | Singh and Wasdani,2016; |
| | Reference by DIC. | Scott and William, 2001; |

| Reference of some influential person. | Naidu and Chand, 2012; |
|---|--------------------------|
| Quality of business project/plan. | Nilsson and Ohman, 2012; |
| Market reputation. | Stiroh & Strahan, 2003 |
| Size of the unit. | |
| Size of loan requests. | |
| Age of the unit. | |
| NPAs associated with the sector. | |
| Collateral pledged compared to other | |
| applicants. | |
| Credit score as calculated by the bank. | |
| Risk ratings as provided by third party | |
| agencies. | |

The variables reflecting problems of banks in lending to MSME units are as follows:

Table 3.8: List of Difficulty Variables in lending to MSMEs by banks

| CATEGORY | VARIABLES | SOURCES |
|-------------|--|-----------------------------------|
| Information | Unreliable information on purpose. | Gandhi, 2015; |
| | Information from DIC. | IFC report, 2016; |
| | Lack of proper credit ratings. | Singh and Wasdani,2016; |
| | Not existing bank customers. | Osano & Languito, 2016; |
| | DIC referrals. | Fatoki and Smit,2011(as cited in |
| | Limited managerial ability. | Osano et al. 2016); |
| | | Ikasari et al, 2016; Shilpi, 2005 |
| Policies | Government policies. | Gandhi, 2015; |
| | Banks' lending requirements and targets. | Singh et al. 2006; |
| | | Brownbridge, 2002 (as cited in |
| | | Osano et al. 2016); |
| | | Singh and Wasdani,2016; |
| | | Akoijam, 2013; |
| | | Beck et al.,2008 |
| Cost | Costs on loans. | Gandhi, 2015; |
| | | Singh and Wasdani,2016; |
| | | Shilpi, 2005 |
| Risk | Loan recovery. | Gandhi, 2015; |
| | Risky sector. | Singh and Wasdani,2016; |
| | Hassles with repayment. | Fatoki and Smit,2011 (as cited in |
| | | Osano et al. 2016); |
| | | Osano & Languito, 2016; |

| | | Taylor &Bradley, 1994 |
|--------------|----------------------------------|--------------------------|
| Manpower | Manpower to handle MSME clients. | Gandhi, 2015; |
| | | Singh and Wasdani,2016; |
| | | Sobia, 2014 |
| Competitions | Competition from other banks | Gandhi, 2015; |
| | | Lam, Burton and Lo, 2009 |
| Schemes | Applicants | Singh and Wasdani,2016; |
| | Scheme policies | Gandhi, 2015; |
| | Support from government | Singh, 2016; |
| | Manpower | Alamelugeeta, 2015 |
| | Others | |

3.10 RELIABILITY AND VALIDITY

The reliability as well as validity testing for the variables mentioned in section 3.9 has been done and the results summarized as follows:

Table 3.9 Cronbach's Alpha

| VARIABLES | CRONBACH'S ALPHA |
|--|------------------|
| List of Difficulty relating to Bank Borrowing Variables for MSME units | .782 |
| List of factors influencing lending variables for bank | .789 |
| List of difficulty in lending to MSMEs Variables for banks | .797 |

As a Cronbach's alpha of >.7 is considered acceptable as a measure of reliability, the variables can be considered to be reliable for further analysis [Bland, 1997; DevEllis, 2003 (as cited in Slavec and Drnovsek, 2012)].

For validity, correlation tests were done per variable item to item total and the results were found to be satisfactory [Carmine & Zeller, 1979 (as cited in Morrison et al., 2017)]. For face validity and content validity, review of past literature, feasibility study, pilot study with open ended questions and interview method were done. A brief report on the preliminary feasibility study on selected banks in Guwahati and Tezpur is attached in Appendix 3. The Bibliography style adopted is as per the author-year mode specified by the Ph. D. rules and regulations under Tezpur University.