

AN INTERPRETIVE STRUCTURAL MODEL (ISM) APPROACH FOR ANALYZING THE IMPACT OF LENDING-AS-A-SERVICE IN INDIAN ECOSYSTEM

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ABSTRACT

The primary purpose of the current study is introducing a approach for extending the model of Banking-As-A-Service (BAAS) and leveraging Lending-As-A-Service (LAAS) model to Indian fintech ecosystem, particularly to be used by new age Neobanks – which can offer newer credit products which are regulated and under the ambit of the RBI. This will ensure that Indian consumers are not defrauded by unscrupulous lenders charging exorbitant interest rates or unethical recovery means. Rather this paper draws upon alternate credit scoring mechanism, which will make credit disbursal easier by tapping into untraditional sources of consumer credit score – rather than the prevalent rating mechanism and extends the usage of the Account Aggregator Framework of RBI.

Keywords: *Alternate Lending Models, Lending As A Service, Banking As A Service, Financial Inclusion, Interpretive Structural Modeling*

INTRODUCTION

The Indian fintech ecosystem has witnessed tremendous growth and radical changes with the launch of UPI 2.0 and key government initiatives like the account aggregator framework which will redefine the financial landscape in the year 2023-24. The initial thrust of digitalization in banking or fintech 1.0 saw greater adoption amongst masses, thanks to Jan Dhan Yojana and key products like Basic Savings Bank Deposit Account (BSBDA) which enabled every individual to open a savings bank account and enjoy basic banking facilities related to savings and insurance. The RBI initiatives of leveraging BAAS (Banking-As-A-Service) also saw the opening of various category of banks like payment banks, small finance banks, wallets etc., adding to the existing category of scheduled commercial banks, which allowed newer products for niche consumer

segments. While all these initiatives brought informal savings holders at the forefront of banking revolution, those availing informal credit were left out. As a result, during the Covid wave – Indian ecosystem witnessed the mushrooming of unauthorized lenders or Chinese app lenders – who exploited those from the informal sector through expensive loans with high processing charges and interest rates.

These interest rates were to the tune of 60% per annum, as against an interest rate of around 24% per annum charged by formal or traditional lenders. As a result, those people who availed such loans were pushed into a debt trap and without any proper ombudsman or grievance redressal mechanism they were subjected to unethical loan recovery practices.

The pressure on the borrowers from such lenders for recovery was huge; resorting to blackmail, fear of social boycott. As a result, many gullible borrowers lost their lives being unable to witness the trauma.

This situation highlighted the gap in our financial system, of which unregulated NBFC's (Non-Banking Financial Company) took undue advantage. The RBI and Ministry of Finance has already blacklisted over 300 apps from operating and worked with platform publishers like Google and Apple to delist such apps from their playstore of Android and iOS.

In September 2022, the RBI created a whitelist of apps which were allowed to operate digitally, however this doesn't solve the greater problem, which is:

How do we bring informal lending into the formal lending landscape?

This needs broadening of the scope of prevailing Banking-As-A-Service (BAAS) solutions and thereafter inclusion of more alternate data-points to create a modern rating system and thereafter exposing this data to authorized financial intermediaries, who express interest and have the risk appetite to complete the lending process – all within the framework of the central bank and government guidelines.

PROBLEM FORMULATION AND METHODOLOGY

The goal of this study is to establish how crucial risk management process variables are linked to one another while designing a LAAS (lending as a service) model. This study will examine the correlations amongst some few critical risk management system factors. The article is making the hypothesis that all factors are interconnected and dependent on one another.

In this study we use the Interpretive Structural Modeling (ISM) method, which is a technique for determining the connection between particular components that form an observable problem. The

ISM is also a collaborative learning method that organizes a variety of disparate but closely connected components into a thorough model.

J. Warfield originally introduced the concept of ISM in 1973, and he continued to broaden it in the following years (Warfield 1973, 1982).

In order to better understand complicated and ambiguous problems, incomplete and disorganised models are examined and transformed into thorough, well-defined models using ISM. This method of decision-making is interpretive since it relies on expert committee judgments to determine strategy interdependencies. Adopting this methodology is based on the fundamental principle that it identifies the linkages between the strategies and depicts them in a structured hierarchical structure using the expertise and practical knowledge of experts.

The decision-makers will be assisted in determining the independent variables and the influencing factors for successfully implementing a viable lending network by a hierarchy establishing the proper linkages among the sustainability factors. Based on their capability to drive and be driven, enablers are grouped using the MICMAC theory. The study's contribution is the development of a structural framework and the identification of the crucial elements that managers may focus on to strengthen the performances of the lending network.

There are seven steps involved in this process:

- Discovering the critical elements that are important to the subject.
- Analyzing how elements are interconnected in context.
- Generating a self-interaction matrix with topology
- Design the matrix on reachability.
- Recognize the level boundaries.
- Classification of key facets in the risk management process based on the strength of their driving and dependent relationships.
- Making an ISM graph of the important aspects creating the Lending as a service process.

DEFINING THE SAMPLE FOR RESEARCH

The survey was conducted in the first second quarter of 2022 on a cohort of 269 individuals all of which were categorized as low and medium income group based on their taxable income. The sample was dominated by low income individuals. Also CXO's of fintech's and those in charge of risk management in banks received questionnaires. Finally, 48 risk management professionals took part in the study's examination of the correlation between the various aspects of the risk

management process. To ascertain the underlying relationships between these parameters, a section of the questionnaire was created utilizing the ISM technique.

RESULTS OF RESEARCH ON HOW KEY ELEMENTS OF THE RISK MANAGEMENT PROCESS INTERACT

Analytical approach is used to describe how each of the eight variables interacts with its environment. We can establish the direct and indirect linkages between the various aspects of the risk management process in SMEs by using this methodology.

	Lending-As-A-Service Factors	1	2	3	4	5	6	7	8
1	Adherence of risk on lender's objectives		V	V	A	O	V	V	O
2	Encouraging communiqué on default risk and credit hygiene	A		V	O	X	O	O	O
3	Well defined and transparent rules on alternate credit risk framework	A	A		V	A	X	A	A
4	Awareness on lending process	V	O	X		A	A	A	O
5	Review of credit risk on lending organization	O	O	V	O		X	X	V
6	Alternate Credit Rating	A	O	V	X	O		X	V
7	Classification of Credit Risk	A	O	V	X	O	V		X
8	Social Credit Score	A	O	V	O	O	V	X	

Table 1. Derived structural-self-interaction matrix from the input variables

Source – Self Obtained Questionnaire Results

In the above table, V denotes that the row influences the column; A denotes that the column influences the row; O denotes that there is no relation between the row and the column; while X denotes row and column influences each other

The structural-self-interaction matrix thus obtained in Table (1) is symbolic in nature, which needs to be converted into binary elements of 0's and 1's so that a reachability matrix can be created as in {Table (2)}.

	Lending-As-A-Service Factors	1	2	3	4	5	6	7	8
1	Adherence of risk on lender's objectives		1	1	0	0	1	1	0
2	Encouraging communiqué on default risk and credit hygiene	0		1	0	1	0	0	0

3	Well defined and transparent rules on alternate credit risk framework	0	0		1	0	1	0	0
4	Awareness on lending process	1	0	0		0	0	0	0
5	Review of credit risk on lending organization	0	1	1	1		1	1	1
6	Alternate Credit Rating	0	0	1	1	1		1	1
7	Classification of Credit Risk	0	0	1	1	1	1		1
8	Social Credit Score	0	0	1	0	0	0	1	

Table 2 – Initial reachability matrix

Now we have to find final reachability matrix $[x_{ij}]$. For this, we need the driving power and dependence variable for each of the LAAS factors from the above table.

The following formulas are used:

$$\text{Driving power} = \sum_{j=1}^8 x_{1j} \quad \text{and} \quad \text{Dependence Variable} = \sum_{i=1}^8 x_{i1}$$

	Lending-As-A-Service Factors	1	2	3	4	5	6	7	8	Driving Power
1	Adherence of risk on lender's objectives	0	1	1	0	0	1	1	0	4
2	Encouraging communiqué on default risk and credit hygiene	0	0	1	0	1	0	0	0	2
3	Well defined and transparent rules on alternate credit risk framework	0	0	0	1	0	1	0	0	2
4	Awareness on lending process	1	0	0	0	0	0	0	0	1
5	Review of credit risk on lending organization	0	1	1	1	0	1	1	1	6
6	Alternate Credit Rating	0	0	1	1	1	0	1	1	5
7	Classification of Credit Risk	0	0	1	1	1	1	0	1	5
8	Social Credit Score	0	0	1	0	0	0	1	0	2
	Dependence	1	2	6	4	3	4	4	3	

Table 3– Final Reachability matrix

MICMACANALYSIS

We now use MICMAC analysis to determine the dependency of driving power with all the lending factors. The resultant dependency - driver diagram is divided a graphical representation having four quadrants, where we have dependency on x-axis and driving power on y-axis.

Thereon the lending factors are plotted as follows:

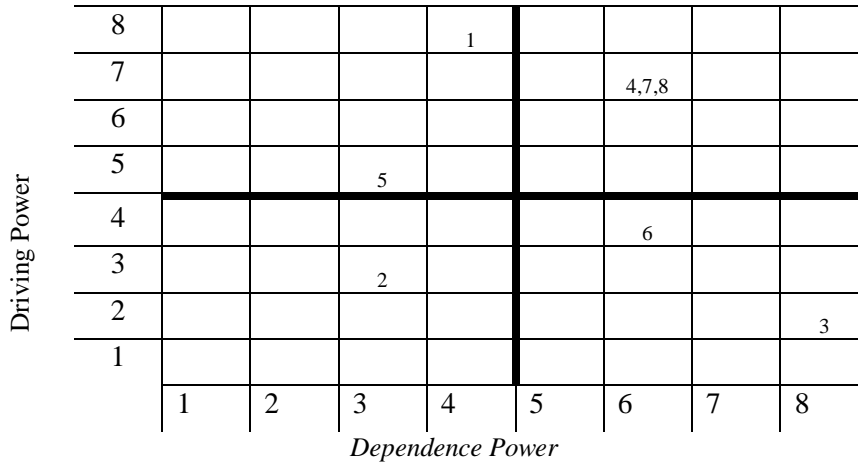


Fig.1 – Driving power and Dependence power diagram

After reaching at the final reachability matrix, we use level identification for finding out the antecedent set, intersection set and levels of barriers to construct the ISM model for Lending-As-A-Service Model for alternate lending scoring model in India. By using the above matrix (as in table 3) and from the MICMAC analysis, the final graphical model is designed as shown in figure a.

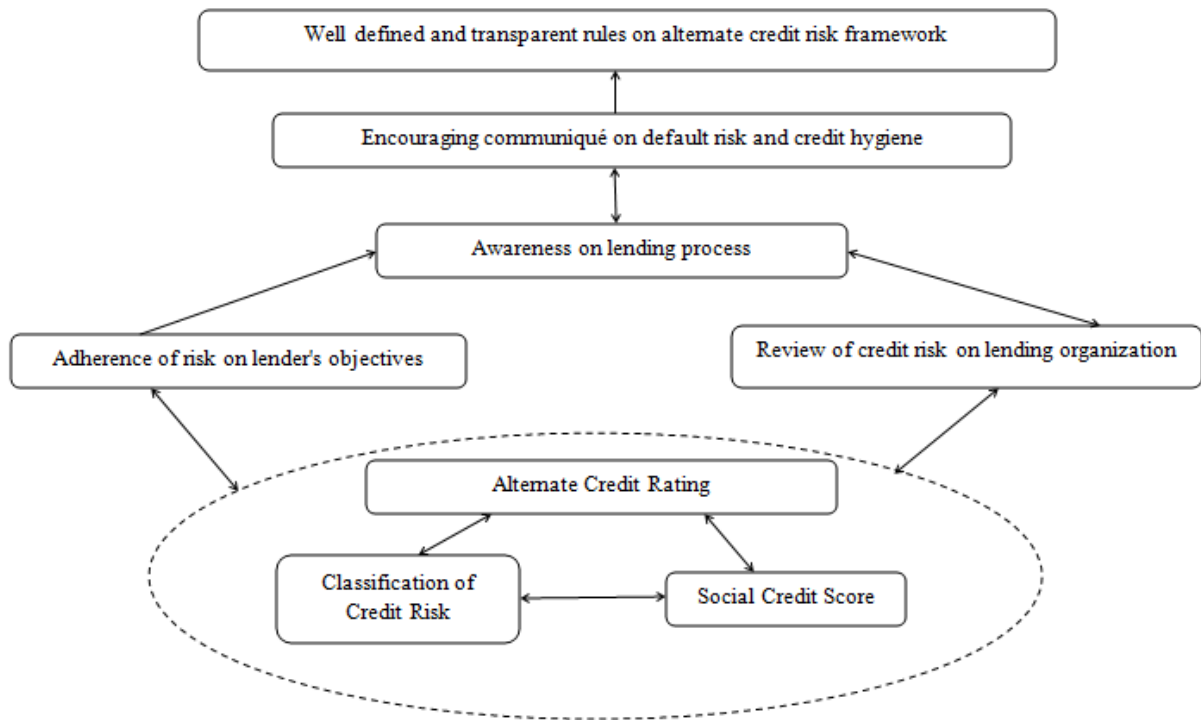


Fig 2. - Interaction amongst factors of Lending-As-A-Service

LIMITATIONS OF THE STUDY

The research is aimed at creating a void in the present market scenario of rating score based lending through an alternate lending model, leveraging the concept of lending-as-a-service there are a few other constraints that arise which additional research needs study. Risk management and lending are credit based decisions that not only take into account the prospective customer's willingness and ability to repay loans, but also the lender's ability to take risks in a particular product, market and tenure based segment. Further this study is aimed at a particular problem of exploitation in current market by NBFC's for unsecured loans, and identification of a solution in an exploratory way by usage of ISM methodology by taking feedback from experts – which may have an element of bias. The model has not been statistically validated and further research could add strength to the findings and create a viable business model.

CONCLUSION

The ISM model thus developed is a graphical representation, that extends the problem of disparity between formal and informal lending. This makes use of a unique model of Lending-As-A-

Service, which extends upon the usage of Banking-As-A-Service (BAAS) concept. The present study is capable to differentiating and prioritizing the various LAAS factors according to their driving power and dependencies.

DISCLOSURE STATEMENT

The authors declare that they have no conflict of interest in this article.

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