Journal of Global Economy, Business and Finance (JGEBF) ISSN: 2141-5595
DOI: 10.53469/jgebf.2024.06(08).07

Enhancing Debt Recovery in Financial Institutions: A Delinquency String - Based Approach for Customer Risk Segmentation

Hadija Murenga

Enterprise Information Management, Davinta Financial Services, Bangalore, Karnataka, India

Abstract: ***Collection is the most important task for any financial Institution. This research paper suggests a unique approach to classify customers into different risk bucket by using delinquency string - based approach. By leveraging delinquency string, we have optimized collection strategies within the context of financial institution. We have developed a comprehensive framework for categorising customers into 5 different risk segments: "No Risk", "Low Risk", "Medium Risk", "High Risk" and "Very High Risk". The Main objective of this system is to enhance the efficiency and effectiveness of debt recovery efforts. Every risk category has a set of collection strategies associated with it results in minimizes loss and optimizing resource allocation. Methodologies presented in this paper have potential to reduce the collection efforts by stopping customers to move to higher risk bucket while simultaneously improve customer satisfaction. Purpose: The purpose of this article is to present a novel methodology for categorizing customers into different risk segments in financial institutions using delinquency strings, aimed at enhancing the efficiency and effectiveness of debt recovery efforts. Significance: The significance of this research lies in its potential to transform debt recovery in financial institutions by implementing a data - driven approach to classify customer risk, thereby improving resource allocation and reducing financial losses.***

Keywords: Credit collection, Portfolio at risk, Microfinance institutions, Risk classification, Delinquency strings, Debt recovery, Collection strategies

1. Introduction

Amidst the current financial conditions managing delinquent account presents a significant challenge for financial institutions globally. Ever - changing customer behaviors, constantly changing regulatory rules and economic turbulence required a detailed approach for money collection - - one that is not only reacting but pre - emptive. Within this framework, "Exploitation of past payment delinquency pattern", which describes the repayment history of borrowers, serves as tool to be a formidable resource for deciphering customer behaviour.

Leveraging the past delinquency string data, we present a unique solution that vows to revolutionize how financial institutions categorizes customers and harmonize their collection strategies.

Historically, Financial Institutions adopted uniform strategies, putting all customers into the same bucket as if they share the same risk profile. However, this approach doesn't unlock full potential of data centric decision making. By comparing the different risk levels derived from our classification system with tailored collection methods, Institutions can overcome the restrictions of old generic strategies. This combination of strategies with risk profiles offers the potential to mitigate losses, refine resource allocation and ultimately enhance customer satisfaction.

The Linchpin of our methodology lies on the thoughtful utilization of customer history. "No Risk" and "Low risk" customers can be efficiently managed through Interactive Voice Response (IVR) calls, while "Medium Risk" and "High Risk" customers can be managed through personalized telephone engagement. "Very High Risk" customers need a proactive, on the ground approach involving CFE's becomes imperative, allowing a well - rounded examination of their financial state and nurturing debt resolution that is mutually advantageous.

In the following pages, we shed lights into the intricacies of our creative approach, examining the approach, implementation of techniques and envisioned results. Through these actions, we aspire to grant financial institutions with the instruments and expertise required to navigate the complex realm of debt recovery simultaneously nurturing customer relations.

In an epoch distinguished by data surplus and technological capabilities, it is our firm believe that this research stands out at the cutting edge of innovation, poised to bring new age of precision and effectiveness indebt recuperation.

2. Methodology for Customer Risk Classification

In this research, we conducted a thorough analysis of customer risk profiles within the framework of a product marked by a recurring 15 - day cycle. The analysis was underpinned by a solid in - house technique, tapping into the historical data exclusive for this product. Our primary objective was to establish a nuanced classification system that would empower customized debt recovery approaches fine - tuned to the unique features of the product.

To Achieve this, we analysed customer payment patterns over multiple cycles, considering critical factors such as Days Past Dues (DPD) and Active DPDs. Utilizing the inherent product cycle, we designed a set of rules that categorises customers into 5 distinct categories "No Risk", "Low Risk", "Medium Risk", "High Risk" and "Very High Risk". These rules were carefully crafted to align the

product's 15 - day cycle and tailored to capture nuanced differences in customer payment behaviours.

The process of identifying and categorizing customers into different risk bucket is based on a set of pre - defined rules derived through an analysis of historical payment behaviour. These rules form the basis of a systematic and data driven approach for evaluating customer risk profiles. Below, we provide a comprehensive breakdown of the methodology applied.

Max DPD	Risk Category	Active DPD	Last Two Tranches DPD Bucket
<= 3	No Risk	Zero	Any
	Low Risk	Non - Zero	Any
4 - 7	No Risk	Zero	Zero
	Low Risk	Zero	Any
	Medium Risk	Non - Zero	Any
8 - 14	Low Risk	Zero	0 - 7
	Medium Risk	Zero	8 - 14
	High Risk	Non - Zero	Any
15 - 30	Medium Risk	Zero	<15
	High Risk	Zero	>15
	Very High Risk	Non - Zero	Any
31 - 90	Medium Risk	Zero	1 - 3
	High Risk	Zero	<7
	Very High Risk	Any	>=7
91+	Very High Risk	Any	Any

Changes in Collection Strategies:

In practice, financial institutions often employ three distinct channels for debt collection: IVR calls, Tele Callers, and in - person field agents ("Feet on the Street"). Effective resource allocation is paramount. However, before implementing our categorized approach, a uniform strategy was applied to all customers. The issue with this one - size - fits - all approach is twofold. Firstly, it fails to address the specific needs of customers requiring individualized attention, potentially leading to neglect of high - risk accounts and over - engagement with low - risk customers. This lack of customization can detrimentally affect relationships with valued clients while inadvertently elevating the risk status of customers who may require immediate attention, inadvertently worsening their financial standing. Our refined approach strives to rectify these shortcomings and tailor collection strategies to the distinct risk profiles of customers, promoting both operational efficiency and customer satisfaction.

Before

	IVR Calls		Tele callers		Feet On Street	
	Before Due Date	After Due Date	Before Due Date	After Due Date	Before Due Date	After Due Date
No Risk	Yes, Same Frequency for all	Yes, Same Frequency for all	No	Only After Grace Period	No	Only after 30 Days DPD
Low Risk	Yes, Same Frequency for all	Yes, Same Frequency for all	No	Only After Grace Period	No	Only after 30 Days DPD
Medium Risk	Yes, Same Frequency for all	Yes, Same Frequency for all	No	Only After Grace Period	No	Only after 30 Days DPD
High Risk	Yes, Same Frequency for all	Yes, Same Frequency for all	No	Only After Grace Period	No	Only after 30 Days DPD
Very High Risk	Yes, Same Frequency for all	Yes, Same Frequency for all	No	Only After Grace Period	No	Only after 30 Days DPD

After

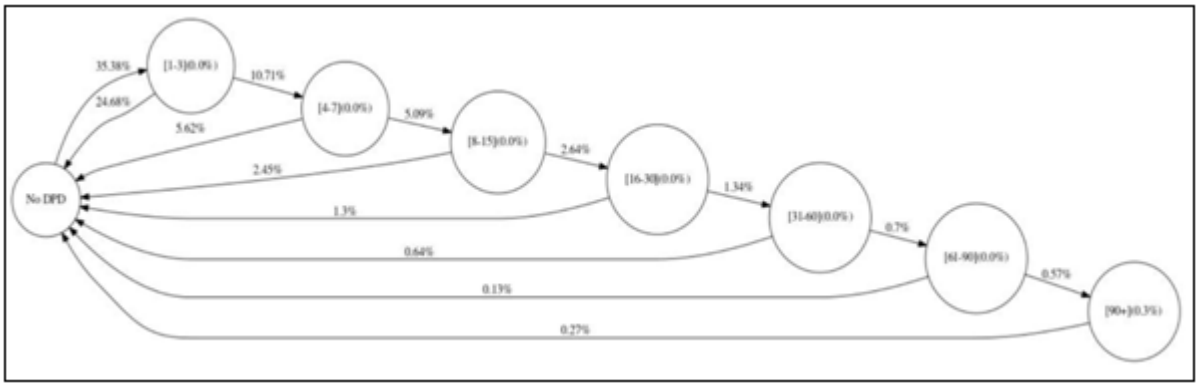
	IVR Calls		Tele callers		Feet On Street	
	Before Due Date	After Due Date	Before Due Date	After Due Date	Before Due Date	After Due Date
No Risk	Yes, Low Frequency	Yes, Medium Frequency	No	No	No	No
Low Risk	Yes, Low Frequency	Yes, Medium Frequency	No	No	No	No
Medium Risk	Yes, Medium Frequency	Yes, Medium Frequency	Yes, Low Frequency	Yes, Low Frequency	No	Yes, Low Frequency
High Risk	Yes, High Frequency	Yes, High Frequency	Yes, High Frequency	Yes, High Frequency	Yes, Low Frequency	Yes, Medium Frequency
Very High Risk	Yes, High Frequency	Yes, High Frequency	Yes, High Frequency	Yes, High Frequency	Yes, Low Frequency	Yes, High Frequency

3. Results

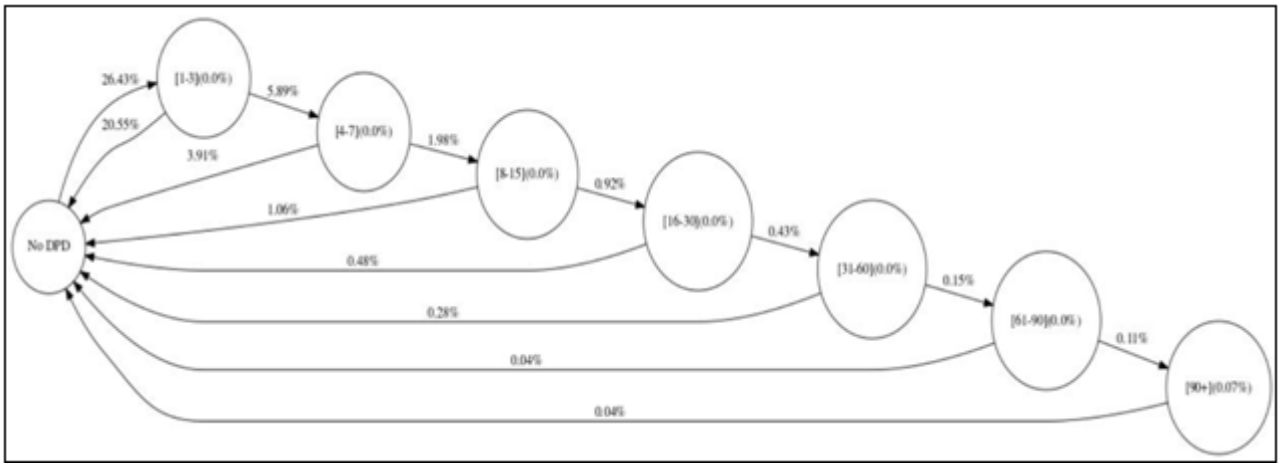
In the past quarter, we successfully implemented these transformative changes, resulting in a significant enhancement in our collection percentage. These adaptations were executed specifically for a 15 - day cycle product. To evaluate the effectiveness of our adjustments, we conducted a comparative analysis of the monthly DPD (Days Past Due) roll forward and roll backward rates over the last six months. This analysis encompassed three months before the implementation of our new procedures and the subsequent three months following their adoption.

Refer below images for the roll forward and roll back ward rate.

1) Before (Quarterly performance):

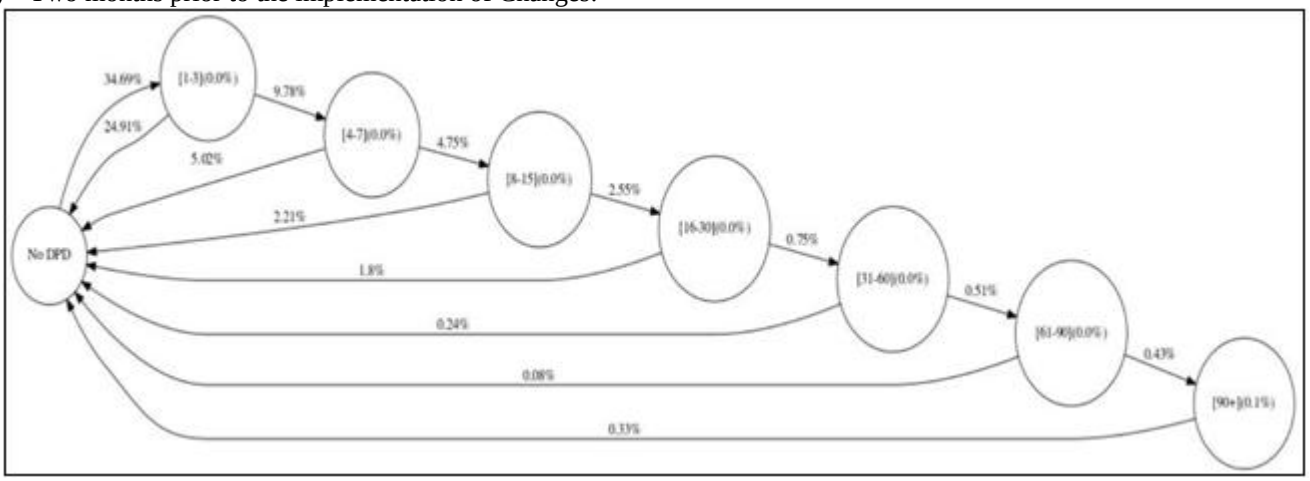


2) After (Quarterly performance):

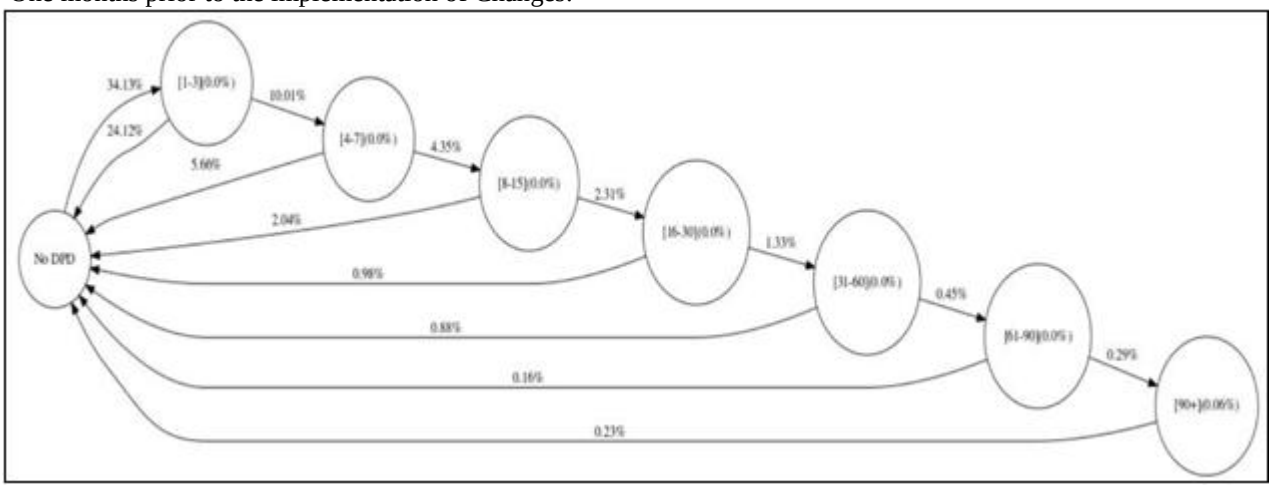


Monthly performance Comparison:

1) Two months prior to the implementation of Changes:

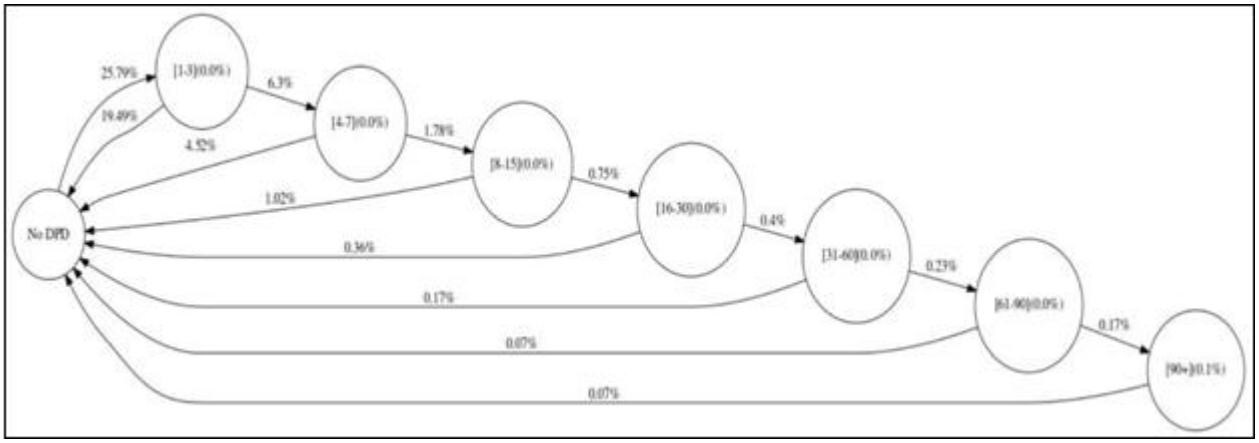


2) One months prior to the implementation of Changes:

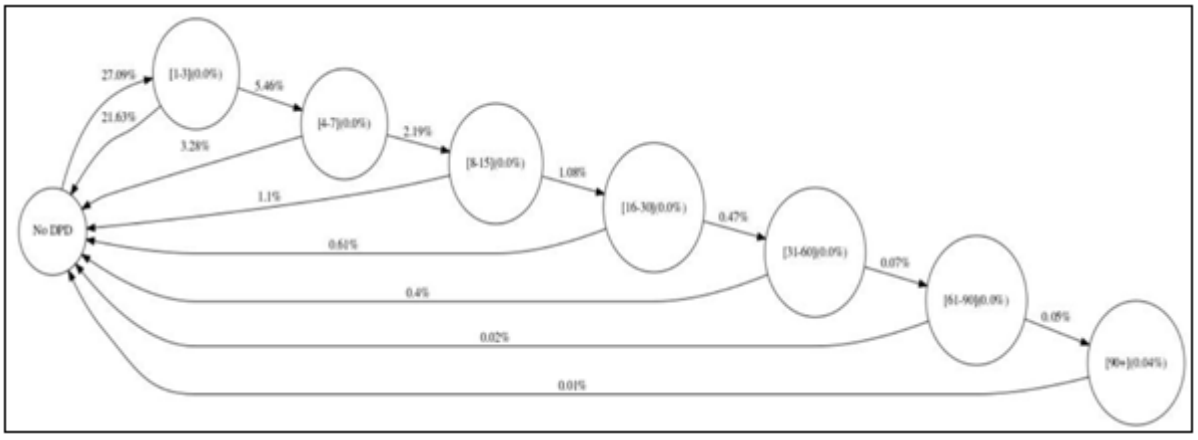


After Changes:

1) In the initial month following the implementation of changes:



2) For the Latest Month:



4. Conclusion

In conclusion, this research paper has presented an innovative methodology for categorising customers into different risk bucket and optimizing collection strategies within the realm of financial institutions. By Utilizing the potential of delinquency strings, which offer insights into the sequence of past due payments, we have developed a comprehensive framework for classifying customers into different risk categories.

In the dynamics contemporary financial environment, where economic fluctuations and regulatory changes are constant challenges, embracing a data driven approach for risk evaluation and debt recovery is paramount. Outdated debt collection methods are no longer suffice. Instead, this

research advocates for customizing tailoring strategies to individual customer risk profiles.

The primary goal of this financial system is to enable the development and execution of customized collection strategies, thereby enhancing the efficiency and effectiveness of debt recovery efforts. Each risk classification associated with a distinct collection approach, aimed at optimizing resource allocation and reduce financial loses.

Our Approach, which delves into the nuances of customer payment behaviour, particularly within the context of recurring cycles, represents an innovative method. Through our concentration on factors like Days Past Due (DPD) and active DPD, we have formulated a methodological classification system that adapts to the unique attributes of the financial product in question.

Within the context of the document, we have detailed an extensive account of the regulations and standards employed for different risk categories based on their historical behaviour. Ranging from “No Risk” to “Very High Risk” each category has been defined with precision, enabling financial institutions to customize their collection approaches accordingly.

References

[1] Khalili, K., &Khalilpour, K. (2016). Customer classification in banking system of Iran based on the credit risk model using multi - criteria decision - making models. Accounting, 177–184. https: //doi. org/10.5267/j. ac.2016.3.002

[2] An Ensemble Learning Based Strategy for Customer subdivision and Credit Risk Characterization. (2023, April 15). TehnickiVjesnik - Technical Gazette, 30 (2). https: //doi. org/10.17559/tv - 20221220085239

[3] Srinivasan, R. (2007). Measuring Delinquency and Default In Microfinance Institutions. SSRN Electronic Journal. https: //doi. org/10.2139/ssrn.2146468

[4] churchill, R. Q. (2016, October 25). EVALUATING THE CREDIT RISK MANAGEMENT PRACTICES OF MICROFINANCE INSTITUTIONS IN GHANA: EVIDENCE FROM CAPITAL LINE INVESTMENT LTD. AND DREAM FINANCE LTD. Archives of Business Research, 4 (5). https: //doi. org/10.14738/abr.45.2216