

## **Fintech and Credit Scoring for the Millennials**

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Lack of credit history for millennials and associated challenges with regards to the evaluation of creditworthiness of such individuals have often acted as roadblocks towards getting access to credit from traditional sources. A recent article by Financial Express shows that nearly 83% of the so-called 'urban mass' of India (156 mn), representing an annual income of US\$3000 and above, has been mostly deprived of credit due to inadequate credit history. While these millennials have never obtained a bank loan, their 'digital mobile footprint', gauged through their online behavior and mobile phones usage, is quite good. These traces of unstructured data can potentially be used to predict their loan behavior. However, there is limited evidence thus far on whether the 'digital mobile footprint' can substitute for traditional credit bureau scores. The study by Agarwal, Alok, Ghosh and Gupta (2019) aims to further the early work in this area.

The authors have used a unique and proprietary data on loan applications made between February 2016 to November 2018, comprising of 417,000 applications in total, to a large Fintech firm in India that provides short-term credit to salaried millennials through a mobile-only lending platform using the digital footprint variables for the evaluation of the borrower's creditworthiness. The objective was to analyse whether unstructured data regarding a consumer's digital mobile footprint such as the type of mobile phone applications, number of applications on the phone, type of operating software, etc. can act as a substitute for traditional credit bureau scores. The authors clubbed this anonymized digital information into six categories—Sales apps, Financial apps, Social Network apps, Travel apps, Mloan apps (mobile-based lending platforms) and Dating apps.

The study showed that the higher the digital mobile footprint of an individual, the higher is the likelihood of her loan approval. Further the study also found that loan approval is positively associated with the number of contacts, number of apps installed, number of calls made or received, and the presence of financial and mobile apps.

The second part of the study has examined the ability of digital footprint variables in predicting defaults, by analyzing the economic and statistical significance of explanatory variables as well as Area under the Curve (AUC)—a commonly used measure of the predictive power of credit scores. The AUC of the digital mobile footprint model is 74%, nearly 15 percentage points higher than the AUC of the model using only the credit bureau score and two percentage points higher than the model, which includes CIBIL score combined with customer and loan characteristics. This suggests that digital footprint variables complement the credit bureau score and observable customer characteristics in predicting defaults.

Digital information can also be used to build credit scoring models for extending loans to individuals without credit or financial history, thereby expanding credit access. To test this thesis, the authors have examined the ability of digital mobile footprint in predicting defaults for the set of customers without a credit score or history. The AUC of the digital mobile footprint model for this sample is 58% and comparable to the predictive performance of the credit bureau score.

The study has also examined whether call logs of customers can be used to improve upon the default prediction. Using proxies such as the frequency and duration of daily incoming, outgoing, and missed calls that attempt to capture the breadth and strength of an individual's social capital, the study found that these measures are strongly correlated with the likelihood of default. Further, the AUC of a model that includes call log measures along with other digital mobile footprint variables is 66%, an 8% improvement over the model with credit score alone.

Using detailed credit reports of a subset of borrowers in the sample, the study found that the 'deep' digital information has more predictive power of borrower's credit risk than 'deep' financial information available through credit reports.

Finally, the paper has also shown that the default likelihood and consequently the creditworthiness of a customer estimated using digital footprints can vary depending on the end-use of the loan. For instance, the study revealed that the likelihood of default is significantly higher for customers when they take loans to pay EMIs or repay existing loans.

Overall, this study documents that digital footprint variables have significant discriminatory power in both loan approvals and default prediction. Importantly, with the use of big data, fintech lenders can potentially build credit scores and can expand access to credit to even customers with little or no credit history that are underserved by the traditional banks.