

Chapter 43

Social Media Credit Scoring

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ABSTRACT

This chapter provides an overview of credit scoring and discusses how credit scoring is evolving within the context of social media. The main focus of the chapter is how financial institutions have begun incorporating a credit applicant's social media activity such as Facebook and Twitter into the risk associated with a financial loan. Traditional financial organizations such as FICO to relatively new start-up companies such as Lenddo are highlighted; the way in which these companies are incorporating big data sources such as social media data into their loan-making decisions are discussed.

INTRODUCTION

Credit scoring is a method of modeling potential risk of credit applicants. It involves using different statistical techniques and past historical data to create a credit score that financial institutions use to assess credit applicants in terms of risk. Credit scoring is essentially a type of classification problem: which credit applicants should be considered good risks and which applicants should be considered bad risks.

A scorecard model is built from a number of characteristic inputs. Each characteristic is comprised of a number of attributes. In the example scorecard shown in Figure 1, age is a characteristic and “25–33” is an attribute. Each attribute is associated with a number of scorecard points. These scorecard points are statistically assigned to differentiate risk, based on the predictive power of the variables, correlation between the variables, and business considerations.

For example, in Figure 1, the credit application of a 32 year old person, who owns his own home and makes \$30,000, would be accepted for credit by this institution. The total score of an applicant is the sum of the scores for each attribute present in the scorecard. Lower scores imply a higher risk of default, and higher scores imply lower risk.

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Figure 1. Example scorecard

Example Scorecard

Let Cutoff=500

A new customer applies for credit.

AGE	32	120 points
HOUSE	OWN	225 points
INCOME	\$45K	200 points

Total **545 points**

ACCEPT FOR CREDIT

Characteristic Name	Attribute	Scorecard Points
AGE	Up to 25	100
AGE	26-33	120
AGE	34-45	185
AGE	45+	225
HOUSE	OWN	225
HOUSE	RENT	110
INCOME	Up to \$10K	120
INCOME	10K-25K	140
INCOME	26K-35K	160
INCOME	36K-50K	200
INCOME	50K+	240

Credit, as it has evolved since the 1950's, it is cold and impersonal, completely based on numbers--what you owe, what you've paid, how much money you have. The numbers all get hacked down to one number: a credit score. The bigger and more complex the global financial system gets, the less it cares about anything other than the applicant's credit score. Banking institutions are becoming less and less personal with online and mobile banking applications. Very few people know the local bank manager at their hometown bank anymore. A credit applicant's personal story is not taken into account when applying for a financial loan. The credit applicant's "character" fits into the bank's algorithms about as well as peanut butter fits into the workings of a Swiss watch.

One consequence of this system is that it is biased against poor people, people with no bank accounts or very little credit history (“thin files”) and young people. These types of applicants cannot obtain credit because they cannot generate the financial metrics that would provide evidence to determine if these applicants should be granted or rejected for a financial loan. It is these several billion people who would be the most enthusiastic first customers of a new kind of credit based less on numbers and more on character. The need to market to and provide credit to these types of applicants marks the emergence of a social media credit score.

This chapter will describe how banks and financial organizations are starting to incorporate big data sources, such as data from social media websites, into the credit lending process. A discussion of how more established organizations, such as FICO and SAS, are incorporating big data in their scorecard methodology will be given. A description of two start-up companies which are using electronic and big data sources such as social media to provide banking services and grant loans will be discussed.

BACKGROUND

The statistical methods used to categorize objects into groups can be traced to 1936 in Fisher's publication (Fisher, 1936). Durand (1941) was the first to use Fisher's methodology to distinguish between good

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