

WORKING WITH STATISTICS AT YOUR BANK

by [Steve Brown](#)

We are huge fans of using statistics to assist in running a bank. No one probably knows better than us that the largest problem in using data isn't that it is misleading, but rather that managers often read too much or too little into it. Here are a couple of items we always struggle with: Watch the distribution - Some management reports rely heavily on the arithmetic mean. The famous example of this issue is from banks that conduct customer satisfaction surveys. On a scale of 1 to 5, 5 being "very satisfied," your customers give you a 3 for average. There is a difference in the data if you received a bunch of "3s" or if you earned lots of "5s" and lots of "1s." In similar fashion, when we look at deposit data, there is usually a municipality, casino or other single customer that contributes the bulk of a community bank's deposits. These entities are in very limited supply, but can contribute 25x more to deposit balances than other customers. Outliers like these often distort the data and lead to sub-optimal conclusions. Understanding your data and its distribution (usually just captured by looking at the standard deviation); helps you begin to understand the quality of the data. Don't confuse casualty with correlation - for banks, the number of branches and deposits are positively correlated. This single supposition has caused many banks to build more branches, with a hypothesis that deposits equal profitability. This is oftentimes a false assumption, as branches often cost \$1mm each to build and another \$1mm per year in expenses. Branches opened after 2006 are only profitable about half the time. Before you jump to conclusions about your data, ask yourself whether there is an association between the two variables? Could something else account for this correlation? Sometimes, deposits increase at existing branches, leading management to build new ones. However, perhaps some other factor is causing increased deposits (such as the addition of sales people, more training or a new incentive plan). Going back to our example above, a casino at one community bank we reviewed contributed close to \$10mm to a new branch. This pushed the average way up and the bank was led to believe that if it opened another branch in the next town, it would also be profitable within the first 2Ys. The problem was that there were no casinos in that town. A better course of action would be to get the casino as a customer first and then open a branch to service them (if you wanted that risk). Only by testing each correlation and by eliminating other factors, can bankers verify their data is leading to the correct conclusion. Margin of Error - In statistics nothing is 100% certain. Extracting data from a random or limited sample only hints at a possible conclusion. Samplings assume a normal distribution and banking is anything but normal. What happens if it is not a normal distribution, such as with loan profitability for example? Or, what do you do if you have a normal distribution, but not a big enough sample size? Drawing conclusions from 10 customers is not the same as 100 customers. If you have a normal distribution and a large enough sample size, you still have to choose your confidence or error factor. For example, if you conduct a customer satisfaction survey (the same 1 to 5 scale) and your mean is a score of 3.9 for 2008 and 4.1 for 2009, did you improve? The answer could be no, because in this case 4.1 and 3.9 fall within the normally-used 95% "confidence interval" and are not statistically different. The error rate is such that both numbers are about the same. The smaller the sample size the more room for error and the smaller the confidence interval. Using data and statistics can be extremely useful when it comes to running a bank, but it is important not to get too carried away. As long as bankers understand the limitation of statistics and test themselves to make sure they are drawing solid conclusions; making decisions on data could put you above other banks that may manage their bank from gut instinct alone.

BANK NEWS

Please Stop

The Attorney General of CA has asked the FHFA to tell FNMA and FHLMC to suspend foreclosure sales in the state until the agency can complete "a thorough, transparent analysis of whether principal reduction is in the best interests of struggling homeowners as well as taxpayers."

Deleveraging Needed

The latest analysis finds about 11mm homes are underwater and about 40% of those had home equity mortgages.

Default

S&P has officially indicated Greece is the first European Union member ever to be rated in default.

Higher Fees

The FHA will increase the upfront insurance premium it charges borrowers by 75% to 1.75% of the base loan amount and increase its annual insurance premium by 0.10% to 0.35% (depending on loan balance) to rebuild its insurance fund and protect capital reserves.

Smartphone Security

A survey by the National Cyber Security Alliance finds 72% of Americans have never installed security software on their smartphones.

Small Business Help

The latest FDIC Consumer News has a group of articles that banks can use as education as it contains banking tips small business. Topics include advice on start-up loans, cost control, avoiding fraud and useful resources. To check it follow the "Small Business Help" link in our related links section below.

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