STRATEGIC TREASURER

Bots, Tools and Sample Sizes:

Preserving Accuracy in Survey Data

In many industries, treasury and finance included, readers are frequently met with phrases such as "survey data shows," "research indicates," or "studies suggest" as evidence for a writer's claim. Sometimes, survey and research data can provide sturdy evidence for a position, rightly increasing credibility and disseminating helpful, accurate information. Sometimes, however, research is poorly conducted and unreliable, but it's presented with equivalent certainty and wording. In addition, recent years have seen a rise in many elements that can compromise data, from bots to less robust survey tools.

Why does this matter? Quality data drives quality decisions, while poor quality data leads to low quality decisions. Whether these are the decisions of a corporation architecting their technology stack or an investor trying to understand the market, they can have long-term consequences.

While treasury has access to a great deal of good data, there is also a fair amount of misinformation circulated in the industry today. How can you tell good research from bad? Consumers of data and of arguments backed by surveys need to know what makes a survey accurate, and those conducting and underwriting surveys must ensure that their survey methodology and their use of data carefully preserve accuracy.

ACCURACY

The following are several factors that heavily impact survey accuracy in today's environment:

Bots and Spoofing
One of the most concerning and rapidly evolving issues in modern research is the prevalence of bot responses to surveys. For various reasons, certain parties build

bots that use false contact information to fill out surveys repeatedly. At Strategic Treasurer, we have seen this issue escalate noticeably over the last year.

While a very small number of bot responses among hundreds of real ones can do little to skew the data, bots can account for 20-70% of the initial responses to a survey. If not weeded out, such high numbers of spoofed responses fully compromise the accuracy and value of the information.

Culling bot responses takes the proper tools and the right knowledge. Machine learning tools are often able to detect a range of issues that point to bots. This is one of the major reasons why free survey tools—which we will discuss in more detail later in this article—are often unable to provide reliable data: they do not include the prevention and detection functionalities that more robust tools offer.

However, in addition to the use of technology to analyze and assist with removing fake responses, it is often necessary to manually review the data to detect additional imposters.

Whether by a human or by an analytics tool, fake respondents can be identified in several ways. Below are a few of the most common tells of a bot response:

SPEED OF COMPLETION- *A 20-question survey completed in 5 seconds, for example, is an easy indicator of a non-human, illegitimate response. That said, this check won't catch all bots, so it is important to be able to identify other characteristics or responses that are anomalous.*

EMAIL ADDRESSES- *Mismatches between names and email addresses and a significant participation of those with free email addresses (e.g., Gmail) rather than business addresses are also indicative of potential issues.*

REPETITIVE IP ADDRESSES- *While those using bots have begun rotating their IP addresses to avoid this tell, multiple responses coming in from the same IP address can also indicate the use of bots.*

NORMAL RANGE OF RESPONSES- *Responses that are dramatic outliers compared to the rest of the survey responses call for further investigation. Having year-over-year data can help confirm normal ranges, lending more certainty to the identification of outliers, especially if there are enough bot responses to influence the new data.*

Survey Tools

A variety of free or inexpensive survey tools have sprung up in recent years, giving everyone from small companies to individuals the appearance that they now have resources to run surveys. These tools serve a purpose, and for those purposes they are excellent and advisable. However, those purposes run more along the lines of finding the best time for a weekend event than collecting data about the current state of the industry.

Due to various limitations, including a lack of tools to combat the bot responses discussed earlier, many survey tools are not equipped to collect largescale data that can be analyzed and reported on with confidence. Nonetheless, many companies use these tools for such purposes and publish their findings with unexplored and unmerited certainty.

Significant Sample Sizes

One of the most vital factors in a survey's quality is the sample size. If too few responses are collected, the results can be dramatically skewed. A survey with only ten or fifteen respondents is little better than the anecdotal data a treasurer has amassed from talking to colleagues. Even a sample size of 25, when taken out of a market of several thousand, can leave room for deeply skewed data.

Little confidence is appropriate for such data, but it is commonly published as highly reliable research. Many groups make claims that benefit them and state that they are backed by "data"—when in reality that data amounts to nothing more than a handful of respondents, half of whom happened to answer one question in a way that supported the group's narrative.

INTEGRITY

Conducting research with data integrity takes work. It requires investing in the most robust survey tools, designing questions carefully, taking the time to cull fake responses, and refusing to publish the breakout statistics you know would make good headlines because there are too few responses to provide confidence in the stratified data.

Integrity in research also requires communicating honestly and fully with your respondents, protecting their personally identifiable information, and never using it for purposes other than what they signed up for. It requires being clear when data is published what the research realistically indicates or supports as opposed to what may be an interesting correlation.

For consumers of data, pay attention to your sources of research. Are those who conducted the research forthcoming about their approximate number of respondents? Exact numbers are not necessary, but do they give you enough to tell if the data is significant? Do they make an effort to clarify what their data can and cannot accurately be taken to mean? If they don't state their survey methodology and their methods for identifying and removing bot responses, know that it is fair game to ask them.

For those running surveys, we encourage that you take time to assess your survey methodology and make sure it's something you can be proud of and something that

can be defended. Ensure that only significant sample sizes are being reported on, that bot responses are being diligently monitored for and removed, and that your survey tools are appropriately robust. For those underwriting, ask your research partner how they are handling each of these issues.

Above all, however, we call for integrity, honesty and due diligence from all parties. Treasury practitioners need data in order to make good decisions, and they need that data to be accurately collected and accurately represented. If the data didn't matter, we wouldn't all be looking at it. Ensuring that the data we look at is tightly accurate is of value for all of treasury and finance.

TO HEAR MORE ABOUT SURVEY METHODOLOGY IN GENERAL AND STRATEGIC TREASURER'S METHODS IN PARTICULAR,

listen to Craig Jeffery discuss the topic in this episode of the Treasury Update Podcast.

THE **TREASURY UPDATE** PODCAST

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Strategic Treasurer

Strategic Treasurer was founded in 2004 by Craig Jeffery, a financial expert and trusted advisor to executive treasury teams since the early 1990s. Partners and associates of Strategic Treasurer span the US, the UK and continental Europe.

This team of experienced treasury specialists are widely recognized and respected leaders in treasury. Known for their expertise in treasury technology, risk management and working capital as well as other cash management and banking operations, they efficiently identify issues, creatively explore ideas and options and provide effective solutions and implementations for their valued clients.

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