D Dalia

INSIGHTS

BUSINESS VALUE OF TRUST

Intended audience
This Insight into the Business Value of Trust is intended as a
reference point for researchers as they consider how best to
measure and communicate the value of their trust investments.

PUBLISHED BY **Dalia Research**

TRUST, BUT VERIFY

Dalia

Additional information on the Trustscore and Dalia Research
can be found at ➡ **daliaresearch.com**
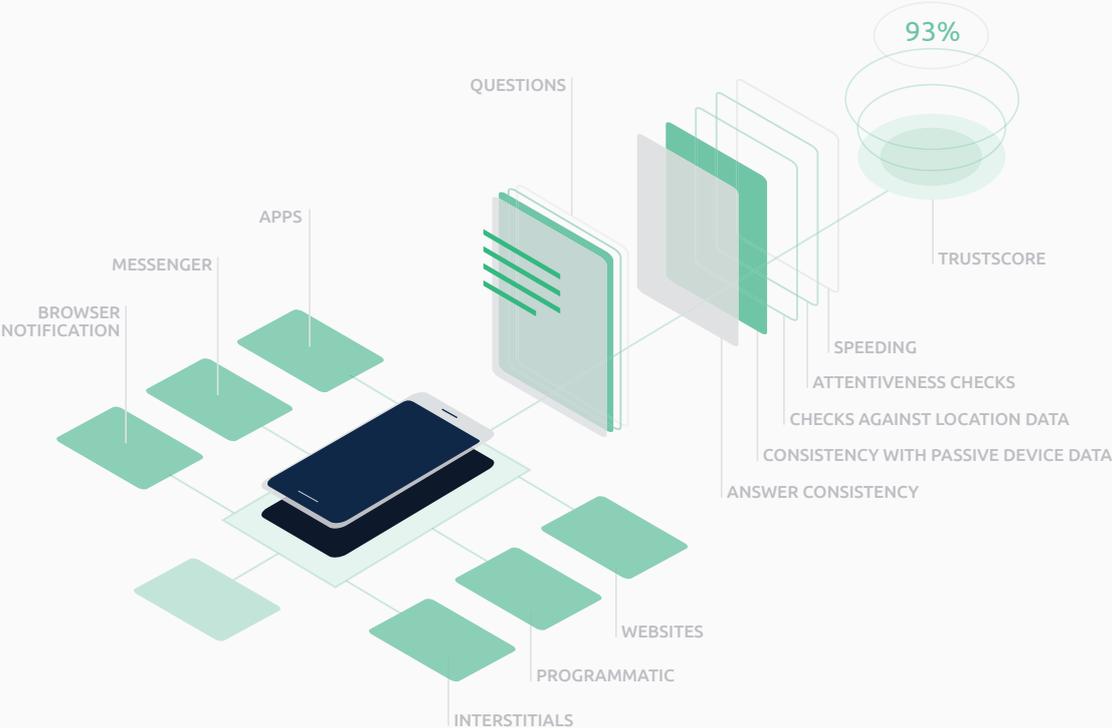
1   AT A GLANCE

ABOUT DALIA

Dalia is a technology company that helps research agencies, brands, consultancies, academia, public institutions and other organisations understand consumer, market and public opinion trends. Using real-time targeting and attribution technologies, Dalia's platform distributes millions of micro surveys around the globe.

USER RESPONSE QUALITY

Dalia's mission is to transform opinions into insights in order to help organizations make better decisions. Driving the quality of our insights is the quality of our survey responses. To ensure high quality survey data is built into products, we make sure insights are generated from respondents who are giving truthful, consistent and meaningful answers. Random, inconsistent and dishonest answers have the potential to introduce noise in the results and cloud the insights.

DALIA'S RESPONDENT TRUSTSCORE

Dalia's TrustScore detects which respondents are providing high quality answers to our surveys. This score assesses respondent behaviour in real time and predicts how likely they are to answer survey questions in an honest and meaningful way. Dalia's platform only distributes surveys to respondents with high scores, ensuring useful insights for our clients.

QUESTIONS

93%

APPS

MESSENGER

BROWSER
NOTIFICATION

TRUSTSCORE

SPEEDING

ATTENTIVENESS CHECKS

CHECKS AGAINST LOCATION DATA

CONSISTENCY WITH PASSIVE DEVICE DATA

ANSWER CONSISTENCY

WEBSITES

PROGRAMMATIC

INTERSTITIALS

2 **DALIA'S RESPONDENTS**
WHO ARE DALIA'S RESPONDENTS
AND HOW DO WE REACH THEM?

REACH

To ensure wide demographic and geographic coverage, Dalia targets a diverse set of 40,000 apps and websites, encompassing news, shopping, business, entertainment, games, social media and messaging. As a result, Dalia distributes over 5 million micro-surveys every month to over 500 million people living in over 150 countries. The strength of Dalia's platform is that it can be integrated into any kind of channel, including incentivised channels such as freemium apps and website paywalls, unincentivised channels such as web advertisements and demand-side platforms, or with custom targeting approaches such as links distributed via email or social media.

SURVEY ALLOCATION

Dalia allocates respondents to surveys in our system by building a demographic profile of each of the respondents who enters the system. During their first visit to the platform respondents are asked to provide basic demographic information, which is continuously updated in future visits. The depth of this demographic profile allows for precise, real-time matching of respondents with surveys.
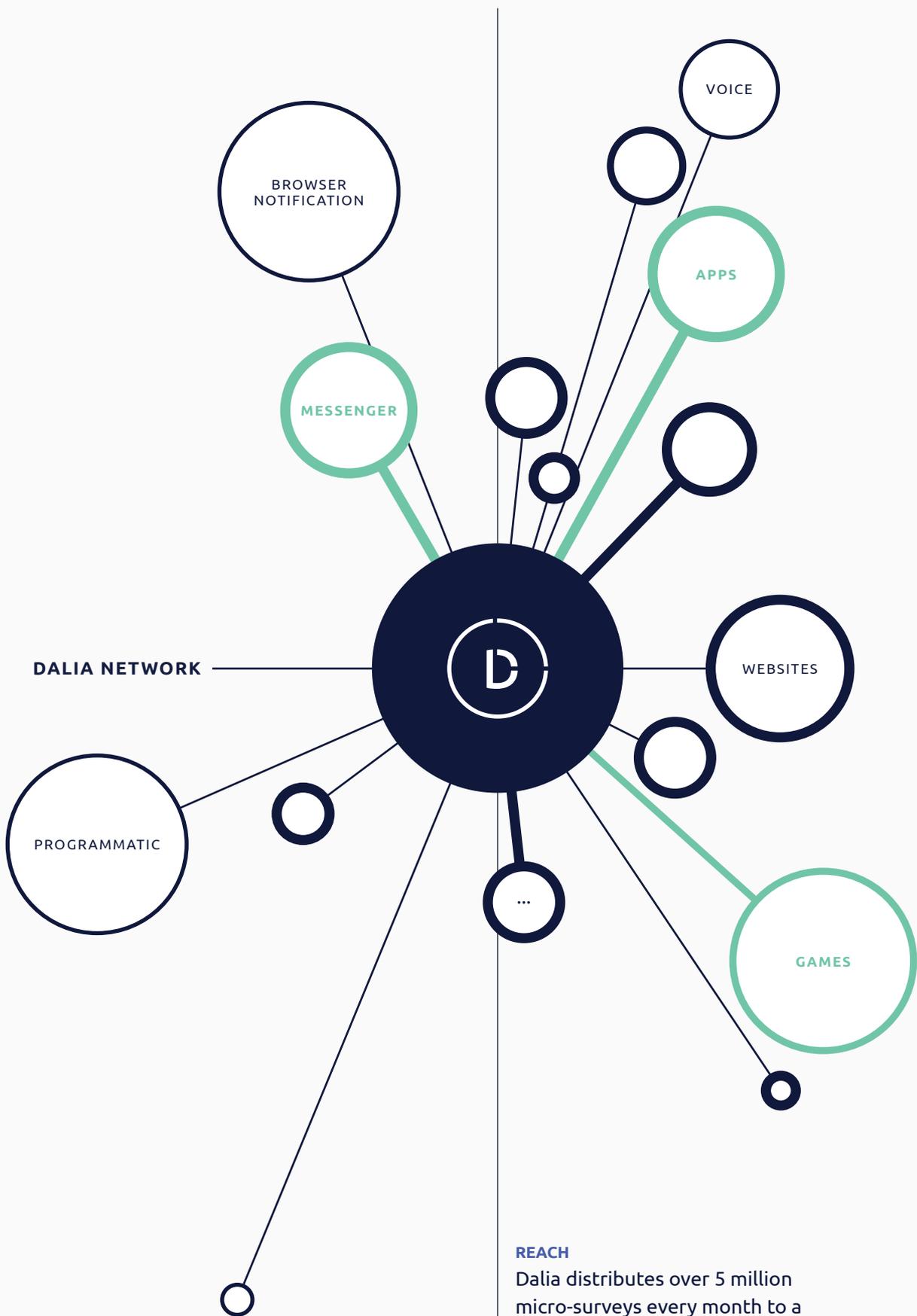
GENDER   AGE   URBAN VS.
RURAL   INCOME   EDUCATIONAL
STATUS

MULTICHANNEL INTEGRATION
GLOBAL ACCESS

VOICE

BROWSER NOTIFICATION

APPS

MESSENGER

DALIA NETWORK

WEBSITES

PROGRAMMATIC

...

GAMES

REACH
Dalia distributes over 5 million micro-surveys every month to a pool of 500 million people living in as many as 150 different countries.

3 USER RESPONSE QUALITY
## WHAT IS "USER RESPONSE QUALITY" AND WHY IS IT IMPORTANT?

USER RESPONSE QUALITY

For a variety of reasons, not all respondents answer all questions truthfully. Data from these respondents produce flawed results that don't represent true public opinion and obscure underlying insights.

There are many different ways in which respondents might give "low quality" responses in a survey:
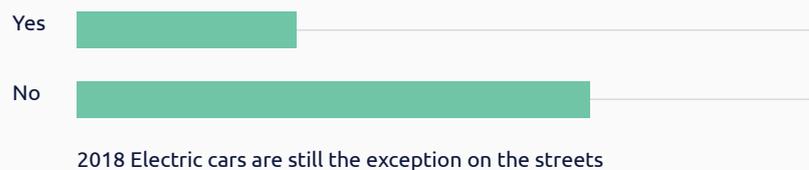
DID YOU VOTE IN THE LAST ELECTION?

Ex. if respondents answer inconsistently, then the results won't make sense

Respondents are between 16 and 17 years old
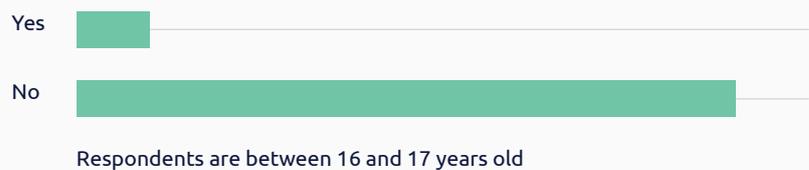
DO YOU OWN AN ELECTRIC CAR? (2018)

Ex. if respondents respond untruthfully, the results will be biased in a certain way

2018 Electric cars are still the exception on the streets

WHICH OF THESE BRANDS ARE YOU AWARE OF?

Ex. if respondents give random answers, the insights will be spread out equally
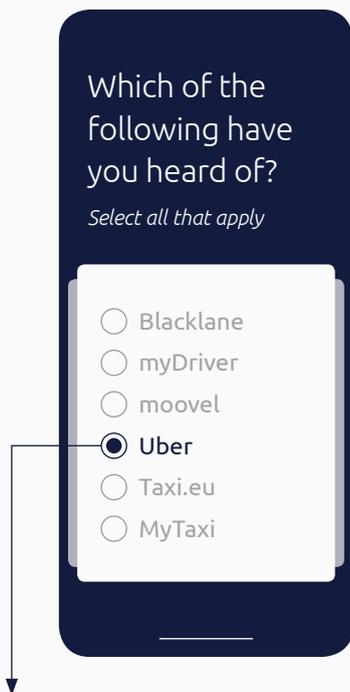
USER RESPONSE QUALITY
WHAT ARE THE MAIN REASONS FOR
POOR USER RESPONSE QUALITY?

Example:
After the demographic profiling questions, a respondent is asked one final question before Dalia's platform matches them with an appropriate survey:

MINIMIZE TIME AND EFFORT
In most cases, a key reason that respondents answer poorly is that they want to minimize time and effort in completing the survey, which might motivate the respondent to speed through the survey, select the top or bottom answer option for all questions, or, in order to reduce cognitive effort, simply not pay enough attention to the questions. These types of behaviors can result in random, inconsistent and untrue responses. Therefore we constantly measure how respondents perceive our survey quality and use this feedback to improve future survey design.

QUALIFICATION DILEMMA
Many surveys target specific population subgroups. However, often, little information is available a priori about whether a given respondent belongs to a particular subgroup. A common practice in market research, particularly online research, is to use screener questions to determine if respondents belong to a target group. Some respondents may become frustrated when they do not qualify for a survey after answering several screener questions. Therefore, they might select more options in the initial qualification questions to potentially increase their chances of receiving a survey.

Which of the following have you heard of?
Select all that apply

- ◯ Blacklane
- ◯ myDriver
- ◯ moovel
- ⦿ Uber
- ◯ Taxi.eu
- ◯ MyTaxi

Respondents have to pick at least this option to qualify for the survey

CULTURAL AND SOCIAL BIASES
Other, more subtle issues that may influence a respondent's propensity to offer their true opinions can be caused by cultural or social biases. For example, respondents may be inclined to agree with statements regardless of their content (acquiescence bias) or feel compelled to select certain options because of perceived external expectations (social desirability bias). In this way they may falsely claim knowledge of issues or products in order to appear well-informed or knowledgable.

SUMMARY TABLE OF BAD USER RESPONSE QUALITY:

BEHAVIOR	REASON
Speeding	Minimize time
Straightlining	Minimize time
Not paying attention	Minimize effort
Select more options	To get qualified for surveys
Select "better" options	Social Desirability

4 **DALIA'S SOLUTION: TRUSTSCORE**
HOW DO WE MEASURE
TRUSTWORTHINESS?

OVERVIEW

Dalia's TrustScore ensures the highest possible sample data quality for our sample. This tool identifies bad respondent behavior, assigns each respondent a score of "trustworthiness" and restricts respondents from completing surveys if their score is too low, all in real-time. This section explains how the TrustScore works.

MARKERS USED FOR TRUSTSCORE

The first time a respondent enters our system, they are asked to answer several questions known as "markers" that measure respondent trustworthiness. These markers are based on the unwanted response patterns described above. Each respondent is assigned a Trustscore and his/her TrustScore is continuously updated every time they pass through our system based on their most recent behavior. Select markers are detailed below:

ANSWER CONSISTENCY

A very simple indication of whether or not a respondent answers truthfully can be obtained by checking whether or not they provide consistent answers to repeated questions (or slight variations of the same question). The idea behind this marker is that respondents who are not answering truthfully likely enter a random value in the first question. When they are faced with the second version they will therefore have a hard time remembering their previous answer.

What is your age?
Example: 28

Later

What is your year of birth?
Example: 1995

23
24
25
26

1986
1987
1988
1989

DALIA'S SOLUTION: TRUSTSCORE
HOW DO WE MEASURE
TRUSTWORTHINESS?

CONSISTENCY WITH PASSIVE DEVICE DATA
One advantage of our platform is that we automatically obtain a
large amount of passive data from the respondent's browser once
they enter our system. We leverage this data to check whether users
are answering truthfully in the following way: We ask them about a
characteristic about their device which we can reliably obtain from
the passive data and check if the answer they pick matches.

In this example a user is flagged if they claim to be using a device kind
other than the one that is identified from the browser information.

```
[
  {
    "country_code": "DE"
  },
  {
    "user_agent": "Mozilla/5.0 (iPad: CPU OS 9_3_5 like Mac OS X)
    AppleWebKit/601.1.46 (KHTML, like Gecko) Version/9.0 Mobile 13G36 Safari/601.1"
  },
  {
    "device_kind": "tablet"
  },
  {
    "device_platform": "ipad"
  },
  {
    "ip": "123.234.123.234"
  }
]
```

What kind of device are you
using to answer this survey?

○ Desktop
● Tablet
○ Mobile

CHECKS AGAINST LOCATION DATA

For this marker we ask the respondents about the time of day in their current location. This data is matched against their location obtained through IP-based geolocation. This location is mapped to the possible time zones and the current time of day in these time zones. In case the time stated by the user deviates from the calculated time the user is flagged.

ATTENTIVENESS CHECKS

Another way to identify trustworthy respondents is to check whether they are reading and digesting the content of a question with adequate care. Below is an example of such a question. Respondents who do not pay proper attention while reading and answering the question have an increased probability to choose the wrong option here.

SPEEDING

Here we look at the speed with which the respondent answers the survey. We evaluate them against the overall distribution of the respondents and identify outliers. If respondents are going through the survey at an exceptionally high speed we flag them and assign this marker a value of 0.

ZERO INCIDENCE CHECKS

This marker is used to detect the tendency in some respondents to pick as many options as possible to qualify for surveys (see Qualification Dilemma above). In order to capture this behaviour we expose a question to the respondents which contain a very low/close to zero incidence in the actual population. Since on a respondent level it is very unlikely that this option applies to them we flag every respondent that chooses this option.

DALIA'S SOLUTION: TRUSTSCORE
FINALLY ASSIGN A TRUSTSCORE
TO THE RESPONDENT

71%

CALCULATING AND APPLYING THE TRUSTSCORE
All these markers are translated into a binary variable which takes the value 0 or 1 where 1 indicates trustworthy behaviour. After collecting these markers for each of the respondents they need to be aggregated into one overall score. We do this by taking the average of all the individual markers collected for a given respondent.

For example, if a user has answered 5 out of 7 markers correctly they will receive a TrustScore of 0.71 (5/7). This approach can be extended easily in case there are additional markers from other surveys available.
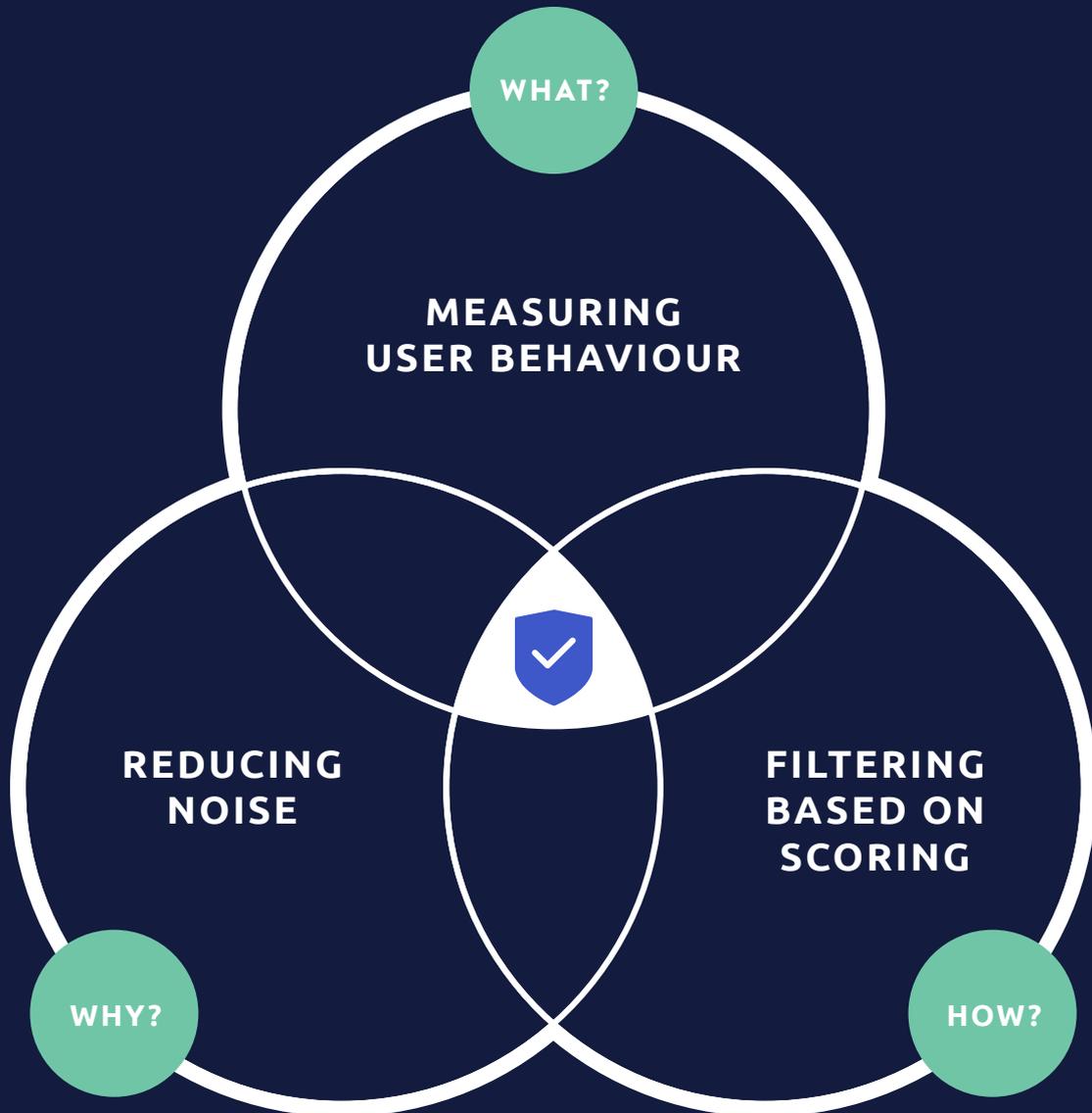
Since none of the markers defined above are powerful enough to serve as a standalone criterion to exclude respondents from taking surveys, we take a probabilistic approach: we do not allow respondents to take a survey (other than the pre-qualification survey) unless they score positively on 5 out of the 7 markers.

UPDATING AND IMPROVING THE TRUSTSCORE
The TrustScore presented in this white paper is a first iteration of a continuously evolving and expanding solution. In the future we will generate additional markers from another pre-qualification survey aimed to more deeply profile recurrent users and integrate them into the user's TrustScore.

In addition to that we will use the TrustScore to educate users about their behaviour and try to encourage them to improve their response quality by exposing their TrustScore to them and offering them opportunities to improve it through additional profiling surveys.

For more details and updates on our methodology please reach out to quotes@daliaresearch.com.

Dalia

WHAT?

**MEASURING
USER BEHAVIOUR**

**REDUCING
NOISE**

**FILTERING
BASED ON
SCORING**

WHY?

HOW?

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