TREADWELL

Better data. Greater impact.

Monthly Event Topic:

RESULTS CONTEXT 101

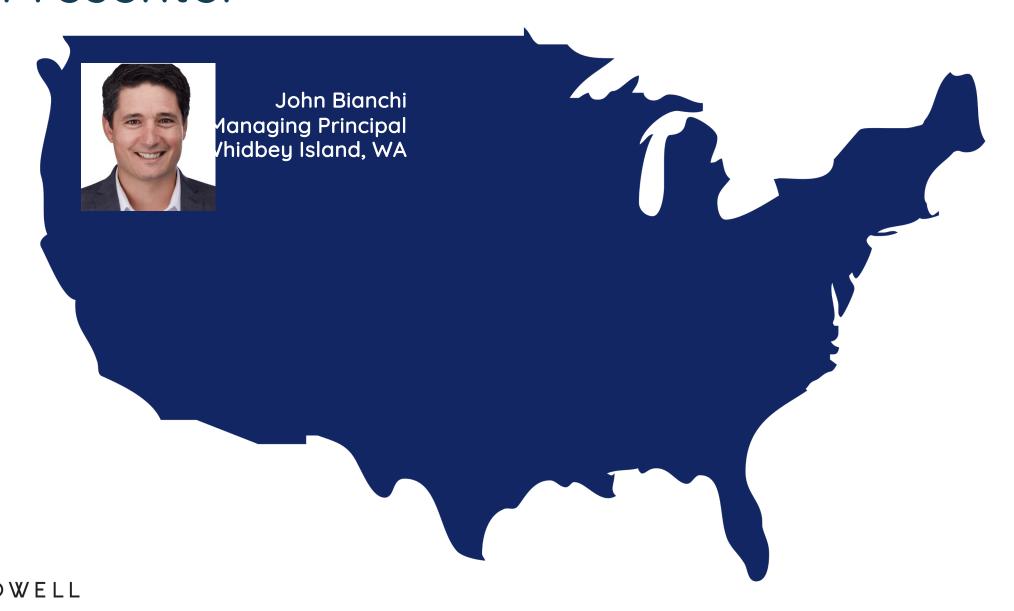Presenters: John Bianchi
                April 17, 2024

Today's Agenda

I.   Introductions

II. Pivot Tables v. Results

III. The Context Dilemma

IV. Three-Step Process to Context Mastery

TREADWELL

Your Presenter

John Bianchi
Managing Principal
Whidbey Island, WA

TREADWELL

Goals for Today's Session

This is a technical training presentation.

Goals:

I. Understand the Basic Functioning of Results, by comparison to Pivot Tables in Excel.
II. Recognize Some Context Problems
III. Learn the 3-Step Solution to Answering Context Problems

TREADWELL

Results and Pivot Tables – Basic Reporting

- Reporting requires a few basic components
  - Raw Data
    - Excel: Table
    - Results: Query
  - Presentation
    - Excel: Filtering, Pivot Table, Charting, etc.
    - Results: Tables, Charting, etc.
- You can get insights by looking over raw data, but it provides more value when the data is fashioned/presented to help answer a particular question.

TREADWELL

Pivot Tables in Excel

- Start with a raw set of data in a worksheet and/or table

- Sorts, calculates and summarizes larger raw data tables

- One of the most important Excel skills to master for moving from beginner to intermediate Excel use.

- VERY useful tool

- Some complicating factors, such as trying to get "Distinct Counts"

TREADWELL

Pivot Table Sample

- Raw data table featuring Participant Goals, work towards Goal Achievement, and Program Enrollment.

- Simple Aggregation:

  – How many times each person has worked on various "Goal Types"

- Special Process for Unique Counts, such as:

  – How many participants worked on which Goal Types?

  – This is essentially a context problem.

Pivot Table v. Results

- ALL tables in Results act similar to Pivot Tables

- Rules:

  – Tables in will display the minimum combination of data elements possible (no row duplication).

  – Calculations (measures) in tables act upon the other data elements (dimensions) within the table.

  – Calculations must be explicit in cases of ambiguity, such as for Sums, Unique Counts, etc.

TREADWELL

Introduction to Context Problems

- Start by Clearly Articulating Your Data Question:
  - "For each goal (for each client) how many times has the Goal been worked on with staff, and what is its completion status?"
- Recognize Context Pitfalls
  - Must distinctly count IDs.
  - Summed values are not unique, so context is a necessity.
  - Don't assume that the same formula will work in a summarized table footer as it will in its own cell elsewhere.
  - Account for likely duplication, such as a participant having more than one record on a single day, or two people with the same name or birthday.

When Do Context Problems Arise?

- Context is relevant for Calculations. Whenever you're using calculation measures, you must consider context:

  – Min

  – Max

  – First

  – Last

  – Count

  – Sum

  – etc.

Introduction to Context Problems

- What is context?
  - In Results, context refers to how an aggregation of data (sum, count, min or max) calculates based on the data available to it.
- Default Context: A calculation (measure) in Results will operate based on the data that it sees (dimensions) within the table it is operating within.
- Input Context:
  - The data (dimensions) that the calculation should look at when aggregating the data.
- Output Context:
  - Asking Results to give us <u>one</u> answer per X.
- Example of input and output context:
  - Looking only at a table with Client ID, Date of Contact, and Form Response ID, count the number of distinct responses per Client.

TREADWELL

Introduction to Context Problems

- Example:
  - Client has an assessment score, taken 2 or 3 times over the course of enrollment.
  - Client also has several services and contacts that are designed to improve the assessment score.
  - A query that includes both the Assessment and the Contact form side by side will create an exponentially larger number of rows in the table.
  - Try to create an "average" score, while both sets of data are in the same table.

TREADWELL

The Context Solution: 3-Step Process

1. Create a table with exactly the data required for the calculation in exactly the order necessary to make the calculation.

   – Does the table have more than necessary to answer the calculation question?

   – Does the table require more in order to answer the question?

   – Ensure the fields are in sortable order if that is a necessary part of the calculation (such as a first or last).

2. Ask the question, "what do I want one answer per?" Break the table on this dimension.

3. Use the table as presented to draft your context-enabled formula.

The Context Solution: Step 1

1. Create a table with exactly the data required for the calculation in exactly the order necessary to make the calculation.

   – Does the table have more than necessary to answer the calculation question?

   Commonly, users will add more fields than necessary to answer a question. For example, "Name" is   rarely necessary in a calculation, where ID is a much better calculation context.

   – Does the table require more in order to answer the question?

   Looking only at the data in the table in front of you, would you be able to answer your own   question? Or is something missing?

   – Ensure the fields are in sortable order if that is a necessary part of the calculation (such as a first or last).

   Typically, start with your Client ID (if that's what you're getting one answer per) or whatever else   you'll be getting a single answer for.

TREADWELL

The Context Solution: Step 2

2. Ask the question, "what do I want one answer per?" Break the table on this dimension.

> Are you asking something like, "how many times did we serve this client?"
>
> Then you're "one answer per" is "Person" (or, more typically, Client ID)

Or, restated:

> Give me one answer per person to the question, how many times did we provide service?

The Context Solution: Step 3

3. Use the table as presented to draft your context-enabled formula.

Insert a final column on the right and follow these steps:

i. Start with your basic calculation ... =count([Response ID_253]

ii. Add Input Context BEFORE closing the parentheses.

Input context is ALL of the dimensions in the table, separated by semicolons, and inside   their own parentheses

In ([Participant ID];[Response ID_253];[In-Person Service?])

iii. Add Output Context AFTER the closing parentheses.

Output context is the answer to "One Per"

In ([Participant ID])

Altogether =count([Response ID_253] In ([Participant ID];[Response ID_253];[In-Person Service?])) In ([Participant ID])

The Context Solution: 3-Step Process

3.   Use the table as presented to draft your context-enabled formula.

Insert a final column on the right and follow these steps:

i.   Start with your basic calculation ... =count([Response ID_253]

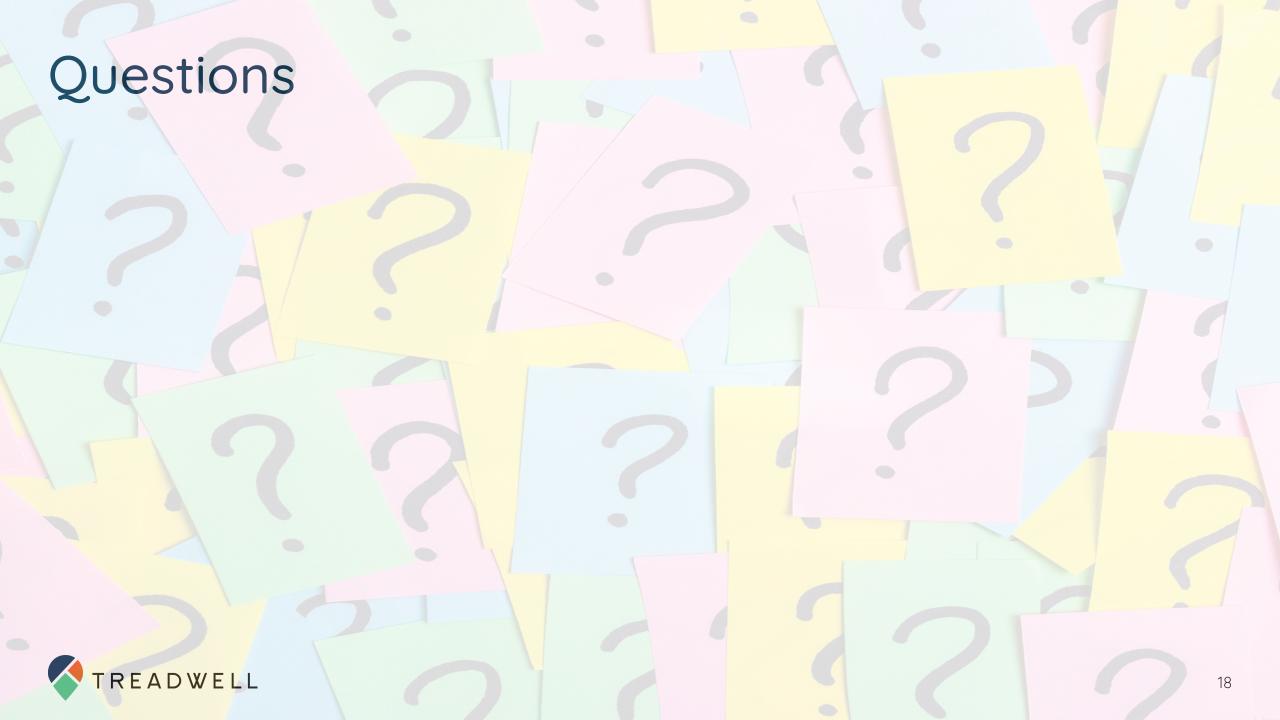ii.   Add Input Context BEFORE closing the parentheses.

Input context is ALL of the dimensions in the table, separated by semicolons, and inside   their own parentheses

In ([Participant ID];[Response ID_253];[In-Person Service?])

iii.   Add Output Context AFTER the closing parentheses.

Output context is the answer to "One Per"

In ([Participant ID])

Altogether =count([Response ID_253] In ([Participant ID];[Response ID_253];[In-Person Service?])) In ([Participant ID])

TREADWELL

Questions

TREADWELL

Managed Services Program Benefits

Base Managed Services

- Consultation
- Support Coordination
- System Monitoring
- Access to exclusive monthly Treadwell events
- Discounts on additional services

Tiered Services

- Professional service hours
- Access to Treadwell's network of experts
- Credits towards advanced features

TREADWELL

Next Month's Call

Open House #2

May 15, 2024

1 PM Pacific | 4 PM Eastern

TREADWELL