

Your Data's Missing a Superhero. Meet Composite Keys.



The Common Problem

- Two tables need to be joined together
- But neither has a single unique ID column
- A single column has duplicate values across rows
- Sales data might only have Order ID and Product ID
- Customer data might have First Name and Last Name
- This makes creating a relationship impossible



What is a Composite Key?

- It's a key made from two or more columns
- The combination of these columns is unique
- Think of it as creating a new, unique identifier
- For example: OrderID + ProductID together are unique
- Or: FirstName + LastName + ZipCode together are unique
- This combination becomes the bridge between tables



Before You Start

- Identify the tables you need to relate
- Find the columns that logically link them together
- Confirm the combination of columns is truly unique
- Check for and handle any null values in these columns
- Ensure data types match between the linking columns
- Plan to create these keys in both tables



Step-by-Step Setup

- In Power BI, open the 'Manage Relationships' dialog
- Click 'New' to create a new relationship
- Select your first table and the first column for the key
- Hold the 'Ctrl' key and click the second column
- Repeat for the second table, selecting the matching columns
- Power BI will show a '1..*' indicating a composite relationship



Creating the Key in DAX

- Sometimes you need a calculated column
- Use the COMBINEVALUES function in DAX
- Syntax: NewColumn =
COMBINEVALUES(",", [Column1],
[Column2])
- The delimiter (like a comma) separates the values
- This creates a single, unique key from multiple columns
- Use this new column to form the relationship



Important Considerations

- Composite keys can impact performance on very large datasets
- Always use the most minimal set of columns needed
- Be cautious with text-based keys as they are larger
- The order of columns in the key matters for the relationship
- Test the relationship thoroughly with your reports and visuals
- Document which columns are used in the composite key



Real-World Use Cases

- Linking sales orders to specific product lines
- Connecting patient visits to diagnoses and procedures
- Relating shipping manifests to orders and destinations
- Analyzing website clicks by session ID and page URL
- Combining financial transactions by account and date
- Tracking inventory movements by warehouse and SKU



Your New Superpower

- You are no longer stopped by missing unique IDs
- You can model complex, real-world data more accurately
- Your relationships will be more precise and meaningful
- Your data model becomes a truer reflection of reality
- This is a fundamental skill for advanced data modeling
- Start experimenting with composite keys in your next project



Follow for More



Like this post? Repost!

Share your thoughts in the comments!

I share little hacks and tips I actually use in
Data & AI — follow if you wanna see more!



Shoaib Akthar
@theshoaibakthar

Follow for more Data Analytics, Data Science and AI insights