Analytics Showdown - Understanding the Data

Overview:
Koolboks makes sustainable refrigeration accessible to everyone who needs it. Our solar-powered and pay-as-you-go enabled fridges help small businesses access affordable and continuous cooling, reducing food waste and improving profitability.

Problems we are trying to address:
We are eager to enhance our credit algorithm and refine our decision-making processes related to pricing and repossessions. The following points outline specific challenges we aim to address using data analysis:

1. Predicting Default Probability:
    a. Evaluate the likelihood of clients defaulting on payments.
2. Default Criteria and Repossession Considerations:
    a. Establish clear conditions for classifying a client as in default.
    b. Outline the circumstances that warrant repossession or the decision to write off a product.
3. Client Attributes for Creditworthiness Assessment:
    a. Identify and prioritize critical client attributes for assessing creditworthiness.
    b. Determine the primary factors that significantly influence a client's ability to meet financial obligations.
    c. Consider developing a creditworthiness analysis model/tool to support our financial services. We mainly use clients' bank statements to assess creditworthiness.
4. Efficiency of Payment Plan Pricing:
    a. Assess the effectiveness of our payment plan pricing structures.

Data Schema Relationships
Tables:

- ***Clients_Accounts*** - a table that contains information about client accounts. *Account_qid* is the primary key.
- ***Payments*** - a table that has records of payment transactions made by the clients. *Payment_qid* is the primary key.
- ***Pricing_Groups*** - a table that defines various pricing plans that a client can choose from. *Group_qid* is the primary key.

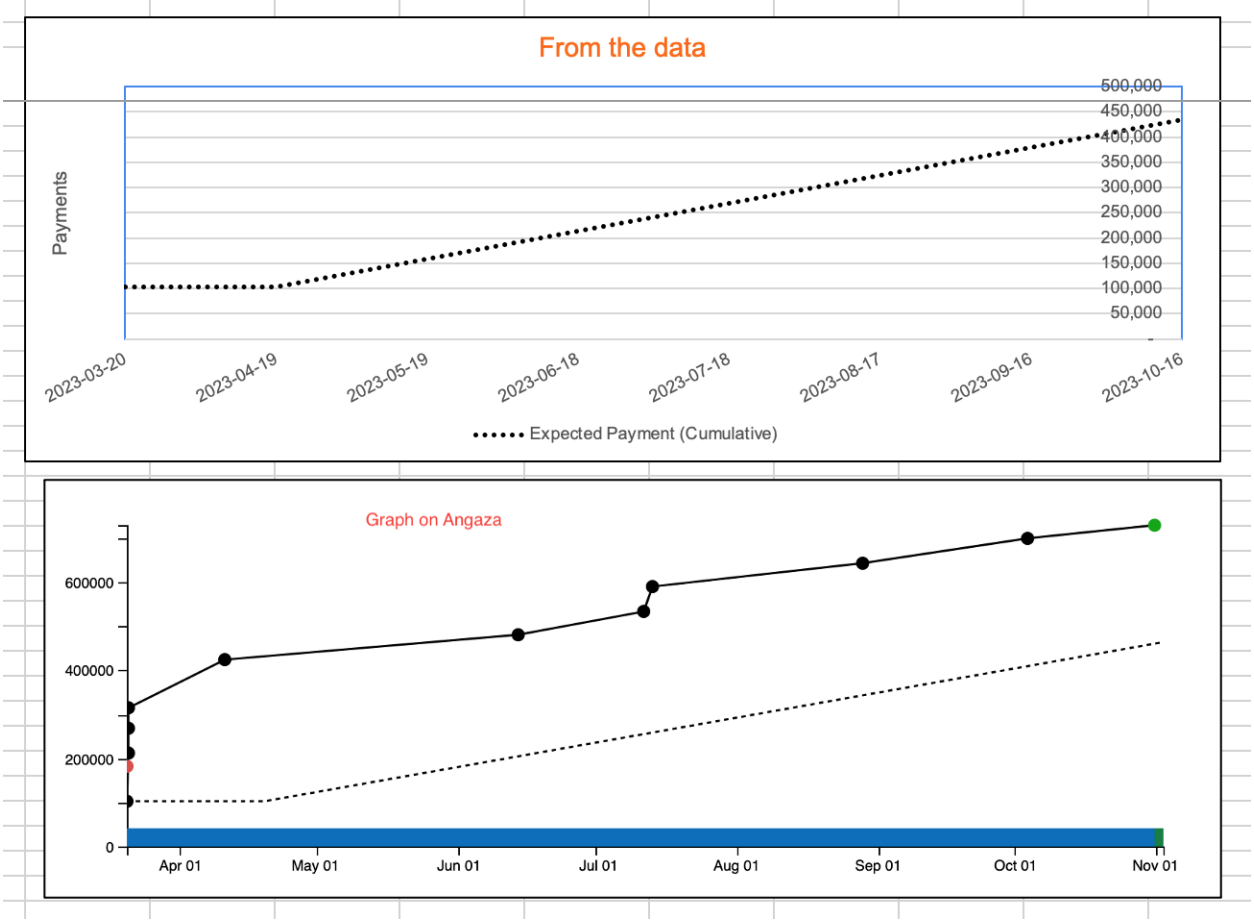
Relationships:

- *Clients_Accounts* and *Payments* tables: Linked by the **account_qid** field. Each client account can have multiple payments associated with it.
- *Clients_Accounts* and *Pricing_Groups*: Linked by the **group_qid** field. Each client account is assigned to a pricing group, and each pricing group can have multiple client accounts associated with it.

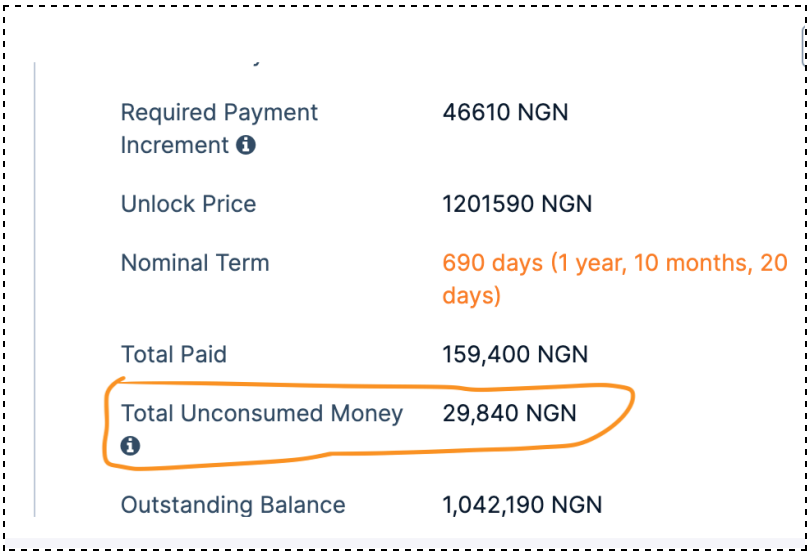
Baseline Graph and Account Payment Due Date

1. **Payments Baseline Graph**: This is determined by factors such as the down payment, account registration date, monthly installment, and the loan duration. A sample calculation, along with *explanations* and *formulas*, is provided in the **'Baseline Graph'** tab of the attached Excel file.

   The first graph in the screenshot below displays the calculated baseline graph for an account, while the second graph illustrates the actual baseline (dotted line) for the same account in Angaza. Please note that the first graph does not include the actual payments as the focus is the baseline graph. Refer to the explanations in the Excel for more clarity.



2. **Payment due date shown on Angaza vs Expected due date based on payment date**: We expect the 2 to be equal but due to how Angaza operates, they are often not equal for the following reasons:
    a. If the client's payment falls below the (minimum) monthly installment, Angaza will not generate an activation code for the payment. Similarly, the payment will not impact the overdue date. Instead, the payment will be categorized as 'Unconsumed Money,' as illustrated in the sample account below.



    b. **Bonus Days**: We occasionally allocate bonus days to certain accounts, which will extend the account's due date by the same number of bonus days. Bonus days are typically granted in cases such as:
        - A token of compensation when a client has been experiencing a faulty freezer and has been fixed.
        - Delays in payment processing channels such as banks.
        - When aligning the account's due date with the client's bank mandate date, although this is a rare occurrence.