Take Home Exercise – Communications Analysis

Problem statement

This is a take home exercise that forms part of the assessment process for data analyst positions at InDebted. InDebted is a digital-first debt collections firm. We help our clients collect overdue accounts from their customers.

One of the key metrics we monitor is how the customers engage with our communications, for this exercise we would like you to analyse the performance of the communications that were sent and build a simple dashboard we could use to monitor it going forward.

Feel free to use whichever BI tool or programming language you are most comfortable with.

What we are looking for

We are looking to assess your analytical skills to dive into the data and provide relevant insights and your BI skills to build a visually appealing dashboard that could be used for insights and reporting purposes.

Questions

Below are a few questions to guide your analysis.

1. How should we handle the missing values for the columns age and customer_country?
2. What time of the day should we send our messages in each country?
3. What should be the preferred channel to use when communicating with customers?
4. What are the main metrics, dimensions and filters to be included in the dashboard?
5. What is the communications performance over time? What could be causing this behaviour?

Don't be limited by those questions, feel free to present other relevant insights you might find.

Provided file

File name: communications.csv
Schema:

- message_id: str (The message ID)
- customer_id: str (The customer ID)
- sent_at: datetime (When was the message sent localised to the assumed customer timezone)
- clicked: bool (Was the message clicked)
- converted: bool (Did the message lead to a conversion)
- client_id: str (The ID of the associated client)
- gender: str (The gender of the customer)
- customer_country: str (The country where the customer is based)
- age: int (The age of the customer)
- created_at: datetime (When was the customer created)
- client_name: str (The client name)
- product_type: str (The type of product offered by the client)
- client_country: str (The country where the client is based)
- channel: str (The channel used in the communication)

Submitting your solution

Send an email to the recruiter you've been in touch with a non-discoverable link to download your code (e.g. Dropbox/Google Drive). If you prefer GitHub/GitLab, that works too.