



Laterite Analytic Assessment Research Team 2021

Instructions

This exercise aims to gauge your capacity to analyse a dataset and present the findings to a non-technical audience. This is a task that you will routinely encounter while working at Laterite. To complete this assessment, you will have to perform statistical analysis on a dataset and present the findings in a short two-page document. To analyse the dataset please use **Stata, R or Python**. You may also consult any resources you like, except other people. Please list any resources that you consulted (you can include these in your submission).

This task will be assessed on the proficiency, efficiency, clarity and replicability of your writing, analysis and code.

You are expected to complete this task within 24 hours of receiving it. Submissions received after this time will not be considered.

Please submit your completed assessment documents using the link found in the email that was sent to you informing you of the Analytical Assessment.

You should send the following documents when submitting the completed assessment:

- A Microsoft Word document (or other word processing document) of maximum 1,000 words in which you have completed the task below
- All the statistical code that you have used to do the analysis (e.g. Stata do file, R script, Python script, or Jupyter Notebook).
- any other dataset you might have used.

Please make sure to send us back all the documents in a compressed zip file.

The Task

Laterite has recently finished the data collection for a project on the use of Mobile Money services and the experiences of Mobile Money customers in three districts of Rwanda.

The dataset has been provided and you have been asked to write a short summary outlining key initial findings to be discussed by the Specialist Advisory Board for the study. Members of this Board include representatives from the National Bank of Rwanda, the Utilities Regulatory Authority and NGO's focussing on access to digital financial services and associated consumer protection issues.

These key initial findings will be used to inform the next stage of the study which includes focus group discussions with mobile money customers. Correctly identifying and interpreting issues that negatively affect mobile money customers is very important for prioritising topics to take forward in the qualitative research.

You are responsible for performing all the statistical analysis required and writing up the key findings. You should remember that the target audience do not have a statistical background.

The research manager wants you to address the following points in the key findings document and working files:

1. During the survey, participants listed all the different types of financial account that they have registered. The resulting data has a format where there is one observation per account type. Format the data so that there is now one observation per participant. (5 marks)
2. Create two dummy variables for whether each participant is: i) financially excluded and ii) digitally financially included. What are the overall rates of financial exclusion and digital financial inclusion for the combined population of these three districts? (10 marks)
 - a. Financial exclusion is defined as not having registered for any type of financial account including accounts with: Mobile money operators, banks, micro-finance institutions (MFI's), savings and credit cooperative organisations (SACCO's) and village savings and loan associations (VSLA's).
 - b. Digital financial inclusion is defined as having at least one registered account with a mobile money operator or an online bank account.
3. Describe in a few short paragraphs how the mobile money market is divided between the three companies. Include at least one chart or table to illustrate your findings. (15 marks)
4. Is there a difference in the share of customers who have experienced failed mobile money transactions in rural and urban villages? If so, is it statistically significant? Explain your findings including any assumptions and limitations. (15 marks)

5. What variables are good predictors that someone will cancel their mobile money account? Discuss what causes a customer to stop using their mobile money account including how strong the evidence is. (20 marks)

Additional marks will be given for:

- The client readiness of your written document (5 marks)
- The quality of your code (5 marks)

TOTAL: 75 marks

Annex 1: Variable description

Variable	Description
hhid	Household ID
weight	Sampling Weight
account_num	Account Number
account_type	Type of account
district	District of household
urban	Household location in urban or rural village
gender	Gender
age	Age
hh_members	Number of household members
highest_grade_completed	Highest grade completed
mm_account_cancelled	Has cancelled a mobile money account in the past
prefer_cash	Preference for cash over cashless payment methods
mm_trust	Do you trust mobile money?
mm_account_telco	Please select the providers for which you have a mobile money account
mm_account_telco_main	Which would you consider your main Mobile Money account?
v234	I understood the terms and conditions when I registered for a mobile money account
agent_trust	Do you trust mobile money agents?
v236	Have you ever taken a mobile money loan?
v237	Have you ever had issues with the network being unavailable for mobile money transactions?
v238	Before making a transaction are you clear about the fees?
v240	Has a transaction ever failed to go through?
v241	Has an agent you've dealt with ever not had enough cash or efloat available?

v242	Do you have a copy of the mobile money terms and conditions?
v243	Do you understand how and where to complain if you have an issue with mobile money?
v244	Have you had an issue successfully resolved after making a complaint?
v245	Do you understand what data mobile money providers collect about you?
v246	Have you been a victim of fraud?