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REPLICATION PACKAGE

An Analysis of the Interactions between Financial Literacy Levels and Digital Competences of Portuguese Families: Financial Behaviour of Households

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1. Overview

This replication package contains all code necessary to reproduce the empirical analysis presented in the above dissertation. The analysis uses microdata from the sixth edition of the VI Inquérito CMVM sobre Literacia Financeira e Comportamentos de Investimento (Comissão do Mercado de Valores Mobiliários, 2025) and examines whether digital competences moderate the relationship between financial literacy and household financial behaviour among a Portuguese university-affiliated population.

The package is organised around a master do-file that sequentially calls four subordinate do-files, ensuring full end-to-end reproducibility from raw data import to final regression tables and figures.

2. Data Availability and Access

The microdata used in this study were obtained under a formal data access protocol established between CMVM and the Faculdade de Economia da Universidade do Porto (FEP). Access was granted following submission of documentation in accordance with the *Normas de Acesso às Bases de Dados Disponíveis*, authorisation by the faculty member responsible for the collaboration, and technical processing by FEP's information technology services. This access procedure is governed by data confidentiality requirements and is not freely available to external researchers.

The raw data file has been placed in the data/raw/ directory as required for replication.

3. Software Requirements

- Stata version 16 or higher (developed and tested in Stata 18)
- The following user-written Stata packages are required:
  - estout — for exporting regression tables
  - asdoc — for descriptive statistics export

Packages are installed automatically by 00_master.do on first run.

4. Directory Structure

The replication package should be organised as follows. The 00_master.do file creates all subdirectories automatically on first run, with the exception of data/raw/ which must contain the raw data file before execution.

```
Dissertacao/
├── 00_master.do            ← Run this file to reproduce all results
├── 00_setup_globals.do     ← Run before individual do-files
├── README.docx             ← This file
├── dofiles/
│   ├── 01_importacao.do    ← Imports raw Excel data
│   ├── 02_limpeza.do       ← Cleans data and constructs variables
│   ├── 03_descritivas.do   ← Descriptive statistics and figures
│   └── 04_modelo_ols.do    ← Regression models and hypothesis tests
├── data/
│   ├── raw/                ← Place raw Excel file here
│   └── clean/              ← Created automatically
├── output/
│   ├── tables/             ← Regression tables (.rtf, .csv)
│   └── figures/            ← Graphs (.png)
└── logs/                   ← Execution logs (.log)
```

5. Instructions for Replication

5.1 Full Replication (Recommended)

— Place the raw data file in data/raw/ as described in Section 4

— Open Stata

— In the Stata command window, type:

do "C:/path/to/Dissertacao/00_master.do"

Replace the path with the actual location on your computer. The master do-file will install required packages (first run only), create all output directories, execute the four do-files sequentially, and save all tables to output/tables/ and all figures to output/figures/.

Expected run time: approximately 2–5 minutes on a standard computer.

5.2 Testing Individual Do-Files

To run a single do-file independently (e.g. during development or debugging):

— First define the global path variables by running:

do "C:/path/to/Dissertacao/00_setup_globals.do"

— Then run the desired do-file:

do "$dofiles/02_limpeza.do"

Important: Always run 00_setup_globals.do before running any individual do-file, as the global path variables must be defined in memory.

6. Description of Do-Files

00_master.do

The master script. Defines all global path variables, installs required packages, creates output directories, and sequentially calls the four subordinate do-files. This is the only file that needs to be run for full replication.

00_setup_globals.do

A utility script that defines the global path variables without running any analysis. Used for testing individual do-files independently of the master.

01_importacao.do

Imports the raw Excel file (sheet "Content") into Stata format. Assigns variable labels corresponding to the original survey questions (columns A through DX). Saves dados_raw.dta to data/clean/. Does not modify any data values.

— Input: data/raw/VI-Inquerito-CMVM-Universidades-TODOS - a enviar.xlsx

— Output: data/clean/dados_raw.dta

— Log: logs/01_importacao.log

02_limpeza.do

Cleans the raw data and constructs all variables used in the empirical analysis. Key operations:

— Renames variables from Stata default letters (A, B, C…) to descriptive names

— Converts string variables to numeric with appropriate ordinal coding

— Constructs the financial literacy score (X): sum of five binary correct-answer indicators (0–5)

— Defines savings adequacy (Y1): five-category ordinal savings rate variable

— Constructs the high-risk investment dummy (Y2)

— Validates the digital competence index as a formative model: correlations between components, VIF diagnostics, and nomological validity (Diamantopoulos & Winklhofer, 2001)

— Creates the interaction term (X×M): product of centred financial literacy score and centred digital competence index

— Documents missing values for all model variables

— Input: data/clean/dados_raw.dta

— Output: data/clean/dados_limpos.dta

— Log: logs/02_limpeza.log

03_descritivas.do

Produces all descriptive statistics tables and figures. Exports tables in both RTF (Word-compatible) and CSV formats, and exports figures as PNG files.

— Tables produced: tab1_continuas, tab2_genero, tab3_escolaridade, tab4_rendimento, tab5_modelo_vars, tab6_correlacoes, tab_poupanca, tab_componentes_digital

— Figures produced: fig1_genero through fig8_risco_por_literacia

— Input: data/clean/dados_limpos.dta

— Output: output/tables/, output/figures/

— Log: logs/03_descritivas.log

04_modelo_ols.do

Estimates all regression models and produces all results tables. Implements:

— H1: OLS baseline models (m1a without controls, m1b with controls)

— H2: OLS moderated models (m2a additive, m2b with interaction)

— H3: Linear probability model and probit with average marginal effects

— H4: Subgroup models by gender, age cohort, educational attainment, and income

— H4 formal tests: Triple-interaction models (m4_triple_genero, m4_triple_idade, m4_triple_escol, m4_triple_rend)

— Diagnostic tests: Breusch-Pagan, VIF, Ramsey RESET, LPM boundary check

— Input: data/clean/dados_limpos.dta

— Output: output/tables/, output/figures/

— Log: logs/04_modelo_ols.log

7. Variable Construction Summary

Variable	Role	Construction	Source columns
score_literacia	X — Independent	Sum of 5 correct answers (0–5), centred	DL, DM, DN, DO, DP
poupanca_num	Y1 — Primary outcome	Ordinal savings rate (1–5)	V
dum_risco_alto	Y2 — Secondary outcome	Binary: holds crypto or complex products	AU, AY
indice_digital	M — Moderator	Row mean of 6 standardised components	BP, CB, CC, CD, BY, DV
interacao_lit_digital	X×M — Interaction	Product of centred X and centred M	—
genero_fem	Control	Binary: female = 1	A
idade	Control	Continuous, years	B
escolaridade_num	Control	Ordinal (1–8)	C
rendimento_num	Control	Ordinal (1–5)	H
dum_estudante	Control	Binary: student = 1	E
dum_trabalhador	Control	Binary: employed (incl. self-employed) = 1	E

8. Key Results Summary

Hypothesis	Prediction	Result	Support
H1 — Baseline Effect	$\beta(X) > 0$ for savings	$\beta = 0.189^{***}$, $p < 0.01$	✅ Supported
H2 — Complementarity	$\beta(X \times M) > 0$ for savings	$\beta = -0.046$, $p > 0.10$	❌ Not supported
H3 — Risk Amplification	$\beta(X \times M) < 0$ for risk	$\beta = -0.008$, $p > 0.10$ (Probit)	❌ Not supported
H4 — Heterogeneity	Interaction differs across groups	Triple-interaction tests: all ns	❌ Not supported

9. Citation

If you use this replication package, please cite:

Roxo, B. S. C. (2026). Financial literacy, digital competences, and household financial behaviour: Evidence from a Portuguese university-affiliated population [Master's dissertation]. Faculdade de Economia da Universidade do Porto.