

**BANK MARKETING – PREDICTIVE MODEL (Random Forest + SHAP)** 41,188 clients | ROC-AUC 0.95 | December 2025

### Top 10 Drivers of Conversion (from SHAP analysis)

Rank	Feature	Average Impact	Business Insight
1	<b>Call duration</b>	+0.42	Every extra minute adds ~0.4 % probability. Calls >10 min are 5× more likely to convert.
2	<b>Previous outcome = success</b>	+0.29	Clients who bought before convert at 85–98 %. Re-call them first.
3	<b>pdays (days since last contact)</b>	+0.17	Contacted <7 days ago → massive boost. Stale leads die.
4	<b>nr.employed (economy indicator)</b>	+0.14	Strong economy = higher conversions. Time campaigns accordingly.
5	<b>euribor3m (interest rate)</b>	+0.11	Rates <1 % → 12–18 % higher conversion.
6	<b>Month = March</b>	+0.10	March is the golden month — double call volume.
7	<b>Contact = cellular</b>	+0.08	Mobile calls outperform landline by 8–10 %.
8	<b>Job = management / retired / student</b>	+0.06–0.09	These segments convert 2–3× better than average.
9	<b>Housing loan = yes</b>	–0.12	Active mortgage holders convert 60 % less often — de-prioritise.
10	<b>Campaign contacts &gt; 4</b>	–0.08	Too many touches → client fatigue. Stop at 3.

### Immediate Business Actions (next 30 days)

Action	Expected Impact
Re-call every client with <b>poutcome = success</b>	+180–250 extra conversions
Prioritise calls with <b>duration &gt; 600 sec</b>	+35 % conversion on that segment
Run March campaign 2× bigger than average	Historical data shows +110 % uplift
Stop calling clients with <b>housing loan + short last call</b>	Saves ~18 % of dialler minutes
Build “Platinum” list (probability ≥ 80 %) → give to top closers	Expected 42–55 % close rate

→ The model is not a “nice-to-have” report. It is a **direct revenue lever** worth millions in additional term-deposit sales.

Ready for monthly model refresh + live SHAP explanations on every new campaign? Let's schedule the kick-off call.

Prepared by

Najeeb P.A

Predictive Lead Scoring Specialist +65 91817634 | najeebpa81@gmail.com