

# How Do Bank Customers Go Digital? A Machine Learning Approach

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## Abstract

This study examines the sequence of decisions that bank customers follow to adopt digital services and diversify the use of those services. The sequential approach relies on machine learning applied to an in-depth survey on consumer preferences for financial services. The results show that the adoption of digital banking services starts with information-based services (e.g. checking account balance), and it is then followed by transactional services (e.g. online or mobile money transfer). However, the diversification of the use of online channels is mainly explained by the consciousness about the range services available and the perception that they are safe. The findings also reveal that bank customers adopt non-bank payment services only once they are frequent and diversified digital bank customers. This suggests a certain degree of complementarity between bank and non-bank digital channels. The matching learning technique based on random forests models is shown to outperform the forecasting accuracy of parametric econometric models.

**Keywords:** Technology adoption, banks, machine learning

**JEL Classification:** G21, O33

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