Integrating Financial Literacy Education and Ai-Driven Personalized Financial Analytics: A Digital Approach to Responsible Borrowing and Financial Resilience

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Abstract:

Financial literacy initiatives frequently deliver standardized educational content without connecting learning to the financial circumstances in which borrowing decisions are made. This paper presents the design and initial technical evaluation of an integrated digital framework that combines structured financial literacy education with machine learning-assisted analysis of personal financial data. The study follows a design science research approach and draws on project implementation reports, functional verification of an educational module, and development and testing of financial analytics components. The educational subsystem provides courses on mandatory payments, maximum available salary advances, and basic financial literacy, with modular lessons, progress tracking, formative feedback, final tests, retakes, and completion certification. The analytics subsystem combines salary-advance recommendations, creditworthiness assessment, and integrated financial profiling. The development datasets include transaction histories for 108,670 customers representing approximately 186.8 million transactions; additional bank statements and credit reports support the analytical modules. The implemented platform links educational access and user-facing indicators of income, expenditure, available funds, and debt exposure within a common application. The principal result is a technically implemented and functionally demonstrated architecture for contextualized financial education and decision support. Evidence currently establishes system implementation and analytical testing, not a causal improvement in financial knowledge, borrowing outcomes, or household resilience. A prospective pre–post and comparison-group evaluation is therefore proposed. The paper contributes a replicable design framework for combining digital financial education with interpretable, data-driven financial guidance.

Keywords:

Financial literacy, financial education, machine learning, financial analytics, responsible borrowing, salary advance, financial resilience.