Savemore: An AI-Based Artefact to Improve Financial Literacy and Savings in Ireland

MSc Research Project
MSc Fintech

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MSc Project Submission Sheet

School of Computing

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Savemore: An AI-Based Artefact to Improve Financial Literacy and Savings in Ireland

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Abstract

This practicum research investigates Savemore, an AI-based solution to improve the saving habits and financial literacy amongst students, gig workers, freelancers, small business owners, and part-time earners in Ireland. Due to the uncertainty of income, these groups often face restrictions or very limited access to tailored financial tools, which leads to poor saving practices and elevates financial stress. With solutions like Savemore, intelligent tailored guidance related to automated budgeting, interactive financial literacy training, and money-saving suggestions could be helpful solutions. Additionally, it aims to provide intelligent customer-focused individualized guidance, which can help in reducing financial stress by guiding users to make wise decisions for their spending habits.

This research report includes mixed-methods assessment and prototype development in accordance with the Design Science Research (DSR) approach. It includes the analysis of synthetic datasets of 1,000 simulated users for quantitative research from usage analytics and qualitative feedback from the survey conducted with a small group of people to integrate the feature and consider their concerns, which helped in the overall development of the design for the user-friendly interface.

Additionally, the findings of the research show that Savemore can help users gain awareness of spending trends, increase savings, and build confidence in managing personal finances. Also, its accessibility and simplistic interface can benefit those with limited time and access or financial expertise.

This report concludes how AI-driven solutions can have a transformative impact on the vulnerable earning groups for enhancing the understanding of budgeting and savings amongst them.

1. Introduction

In Ireland, managing personal wealth is both necessary and challenging, considering the increase of a digital and economically diverse landscape, specifically for non-traditional

earners such as students, freelancers, part-time employees, small business owners and gig workers. (CSO, 2023; Social Justice Ireland, 2024) As most of the people involved in these income streams receive erratic income, they don't have access to high-quality financial tools. (CCPC, 2024; National College of Ireland, 2023) Despite the high increase in availability of certain financial tools, these sets of people are still relying on reactive budgeting and inconsistent savings strategies. (Finextra, 2022) This research focuses on the development of the solution named Savemore, which is designed based on AI, a financial technology artefact designed to improve financial literacy and support savings behaviour among these vulnerable and time-constrained earners. By combining the solution with the AI-powered recommendations, income tracking, spending behaviour, and interactive learning, it helps such users make informed financial decisions and build sustainable financial habits.

The core research problem addressed during this research is: How can AI technologies be leveraged to improve financial literacy and savings behaviour among economically active but underserved groups in Ireland?

To explore this, the project outlines a certain set of goals

- To develop the Savemore solution prototype, which is tailored to the financial needs of target user groups.
- To evaluate how this solution can impact user knowledge, savings discipline, and financial confidence.
- To determine the challenges faced by users for the adoption of the financial tools and address them with the refined solution.

The report follows a Design Science Research (DSR) approach by using an iterative development and evaluation cycle to create the solution. It includes mixed-methods evaluation surveys, synthetic dataset analysis and engagement analytics, providing insight into Savemore's effectiveness.

Through this practicum, the report contributes towards understanding how well-tailored, intelligent financial tools can help in empowering the saving and budgeting potential of the populations with irregular income in Ireland.

2. Related Work

2.1 Financial Literacy in Ireland: Scope and Challenges

Economic resilience is built on financial literacy. In Ireland, while it was the second best of all EU countries in achieving the minimum OECD standards, disparities based on income, education, and employment status remain. (CCPC, 2024; OECD/INFE, 2015) A 2023 national survey by Ipsos MRBI found that a third of Irish adults are struggling financially, and one in eight could pay their bills for a month or less if they suddenly lost their income. (CCPC, 2024; Social Justice Ireland, 2024) Some groups, including students, gig workers, and small-business owners, are particularly at risk. According to research by the Small Firms Association, while 81% of SME owners in Ireland believe financial literacy is important, only 46% of said business owners rated their financial literacy as good or expert. (Fintech Ireland, 2024) These gaps emphasize the necessity for specific interventions and tools that are easily available.

2.2 Savings Behaviour and Psychological Barriers

According to behavioral economics, saving is usually impaired by cognitive biases like present bias, optimism bias, and low financial self-efficacy (Thaler & Sunstein, 2008). In Ireland, levels of personal savings are currently below EU norms, particularly at a younger age and among those at the lower end of the income scale.

(Lusardi, 2019) stresses that automated nudges and goal setting can do a lot to improve the savings rate. But the majority of the existing apps on the market do not offer the personalization and behavioral response necessary to attract non-regular earners like freelancers and part-time workers. (Finextra, 2022)

2.3 Digital Financial Tools: Access and Limitations

Fintech has made financial access more demographics, but moving beyond mere equity of access, there is much to be done in terms of ease of use, inclusivity, and educational value. Most fintech platforms are focused on the salaried individuals while leaving the non-linear income or limited credit history behind, as argued by a report from FinExtra 2022).

New platforms provide features related to budgeting, but they are not integrated with interactive financial education nor localized customizations. (McKinsey & Company, 2023; EY, 2023) Additionally, many of the tools are passive, merely tracking spending rather than actively teaching people how to improve their financial behaviour.

2.4 AI in Consumer Finance: Promise and Pitfalls

Consumer finance is being transformed by AI with personalized insights, predictive analytics, and automated financial coaching. (McKinsey & Company, 2023; Accenture, 2023). By 2025, more than 80% of fintech will rely on AI to scale new growth and improve customer experience,

fraud detection, and financial planning. Savemore aligns with this focus by providing budgets, saving goals and engagement financial literacy modules. (EY, 2023; McKinsey & Company, 2023) However, there are ethical issues related to data privacy, algorithmic bias, and transparency. (Accenture, 2023; European Parliament, 2024) The EU's AI Act and Ireland's National Financial Literacy Strategy both recognize the importance of human-in-the-loop oversight and prescriptive accountability mechanisms. (European Parliament, 2024; Government of Ireland, Department of Finance, 2025)

2.5 Irish Case Studies and National Strategy

Ireland's first National Financial Literacy Strategy, which was launched in 2024 with the mission of fostering a connected framework of individuals, organizations, and institutions in the public and private sectors working together to improve the financial health of Ireland. (Government of Ireland, Department of Finance, 2025; FinancialLiteracy.ie, 2025) The plan focuses on digital tools, education, and inclusive design. According to NALA (2022), people with low literacy and numeracy skills encounter significant obstacles in accessing financial services. Meanwhile, a study by the National College of Ireland found that young adults aged between 18 and 24 have mixed levels of financial literacy, and women have poor literacy despite high engagement. Therefore, these findings justify the need for tools like Savemore, which are accessible, educational, and tailored to underserved groups of people. (Social Justice Ireland, 2024)

2.6 Global Fintech Trends and Embedded Finance

The worldwide fintech space is moving from disruption to partnership with financial firms. (McKinsey & Company, 2023; EY, 2023) Current trends in the Fintech space:

- Embedded finance: Building financial services into existing, everyday platforms (e.g,. ridesharing, e-commerce). (Deloitte, 2024)
- AI-driven personalization: Customizing financial advice and savings plans according to the behaviour of everyone. (EY, 2023; Accenture, 2023)

These developments are especially important for gig workers and freelancers, who frequently work outside traditional financial systems. The concept of Savemore leverages these trends by providing the individual with autonomous, personalized, and educational financial assistance.

2.7 Research Focus

This analysis of the related work review raises three related gaps:

• Personalized FinTech tools for the sporadic income earner to provide financial services among irregular income earners in Ireland.

• Not enough financial education built into fintech platforms.

• AI is underused for behavioural change and financial empowerment.

Savemore fills these gaps by pairing AI-based insights with interactive learning and a user driven design. Its focus on students, gig workers, freelancers, and small businesses is relevant and resonant. (EY, 2023)

The need to address such a question is therefore legitimate:

How might AI solutions help increase financial literacy and savings rates for non-typical earners in Ireland?

Additionally, this literature review acts as a backbone for the development, design, and testing of Savemore throughout the rest of the report.

3. Research Methodology

3.1 Research Approach: Design Science Research (DSR)

The practicum is conducted using a DSR approach, as it is particularly suitable for creating and testing technological artefacts in authentic environments. The goal was not just to understand the core of the problem due to low financial literacy and poor savings behavior, but to design an artefact (Savemore) that can act as a solution to it.

DSR is an iterative process: describing the problem, designing the solution, implementing the artefact, and assessing the performance. This mix of technical rigor and practical relevance is well-suited to applied, user-centric innovations such as fintech tools.

The project consists of a five-cycle process:

1. Problem Definition – The core problem was identified by the evaluation of primary research.
2. Design of Artefact – Mapping out Savemore Features and User Flows.
3. Implementation – The working prototype, built with selected tools.
4. Evaluation - Testing the artefact with the survey and feedback from the target customer segment.
5. Refinement – Enhancing the design as per the feedback and reviews from the potential users.

3.2 Data Collection Methods

A mixed-methods approach was used to shape the development and evaluation of the Savemore solution. This involved an integration of pre-development user studies with post-deployment analysis of system usage, guaranteeing that user needs and actual use were addressed from this solution.

Survey via Google Forms

Prior to developing the Savemore platform, a short Google Form survey was conducted to potential users to understand the perspective and concerns of the customer before indulging with any fintech based AI tool

The intent of this survey was to

- Understanding people's awareness of basic financial concepts

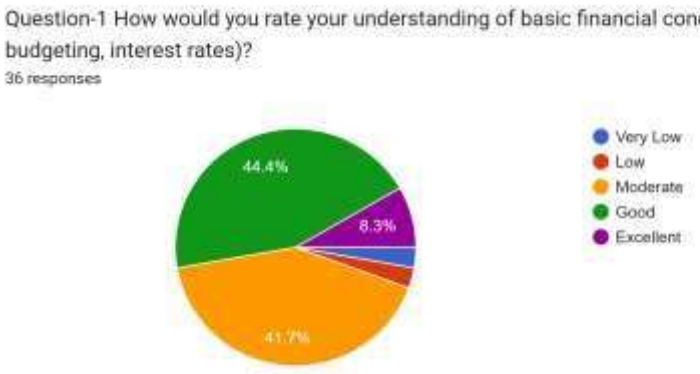

Figure 1: Google form survey results for people's awareness of basic financial concepts

- Currently used methods

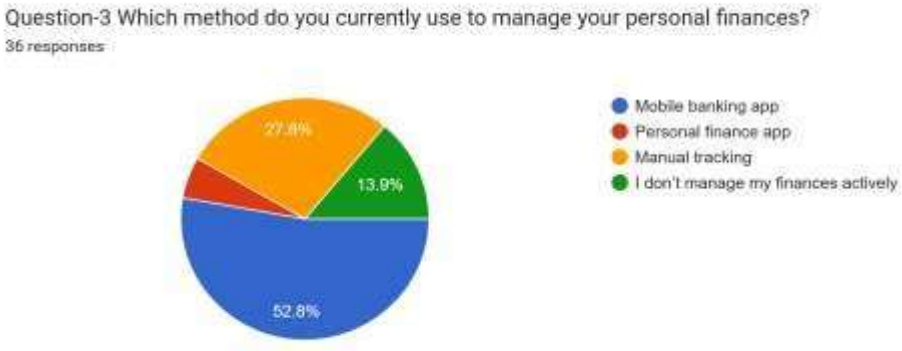

Figure 2: Google form survey results for currently used methods

Assess user comfort with AI-driven financial advice and educational content

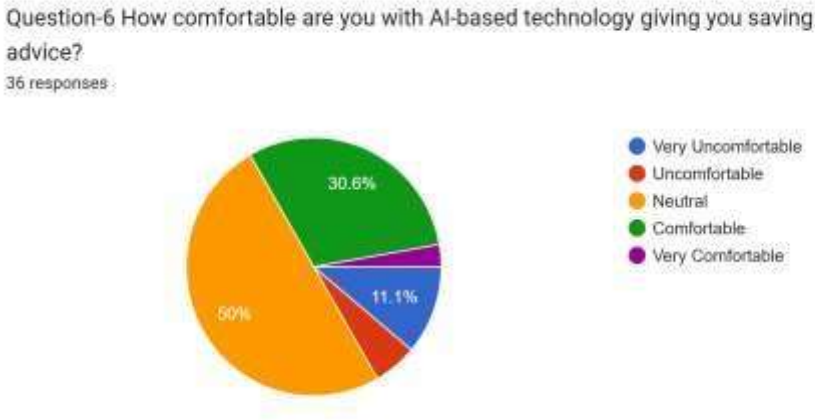

Figure 3: Google form survey results assess user comfort

The survey feedback informed the development of Savemore's components, which include goal-setting modules, budgeting utilities, and interactive learning materials. This method, which was focused on the users, guaranteed that the solution was in line with actual demands and expectations.

Synthetic Dataset via Excel:

Synthetic test data was produced and analysed by Excel and Google Colab after the development of prototypes.

This dataset included:

- Analyse the potential users metrics, prediction and completion rate of savings goals from the synthetic dataset.
- Customer bifurcation based on their occupation to analyse the difference in the saving and spending patterns.
- User interaction with nudges and recommendations from AI.

This data was used to evaluate the system's effectiveness in promoting savings behaviour and improving financial literacy. Excel enabled the calculation of descriptive statistics, trend analysis, and visualizations that supported the findings presented in the Evaluation section. This mixed method approach allows for comprehensive interpretation, capturing measures of user impact as well as an understanding of personal experience and experiences of design challenges.

- Surveys: Survey results from potential users (students, freelancers, part-time earners, gig workers, SME owners) help in collecting the information and understanding their perception towards such solutions.

- Engagement Metrics: Synthetic dataset helps in analysing the potential usage of different categories of customers.

3.3 Tools and Technologies

Development and evaluation were supported by the following software tools and platforms:

Table 1: Savemore's development tools

Tools	**Purpose**
HTML/CSS/JavaScript	Creation of Front-end interface prototype
Python/Google Colab	Backend development, And synthetic dataset analysis
Firebase	Storing user data, User Authentication
Google Form	Conduct survey
EXCEL	Synthetic dataset and visualization
Chatgpt API key	For the integration of nudges

Savemore was designed as a lightweight web-based solution to maximize accessibility across user demographics, particularly those using mobile devices.

3.4 Data Analysis

- **Quantitative Data** (e.g., savings improvement, quiz scores): Analyzed using the Google Colab and excel statistics to track the Savemore demographic usage analysis, correlation metrics of different categories of users.
- **Qualitative Data** (e.g., feedback from surveys, usability comments): Thematic analysis identified recurring themes such as motivation to save, ease of understanding, and trust in AI guidance.

These results directly informed Savemore and offered insights into its behavioral impact.

3.5 Limitations

Some limitations include:

- Small sample size during the survey due to practicum constraints
- Relying on synthetic datasets while building the prototype.

To mitigate these, objective usage data was emphasized, and feedback was anonymized to encourage honesty.

3.6 Ethical Considerations

All research activities complied with the ethical requirements

- Informed consent was obtained from all participants
- Data was stored securely and anonymized during analysis
- Participants could opt out at any stage without penalty

The use of AI was also reviewed under ethical guidelines regarding transparency, accountability, and user empowerment.

4. Design Specification

4.1 System Architecture Overview

Savemore was built on a modular and layered architecture to provide scalability, user accessibility, and data security. The system can be decomposed into three major layers:

• Presentation Layer: Web and Mobile Interface developed with cross-device interaction and usage in mind.

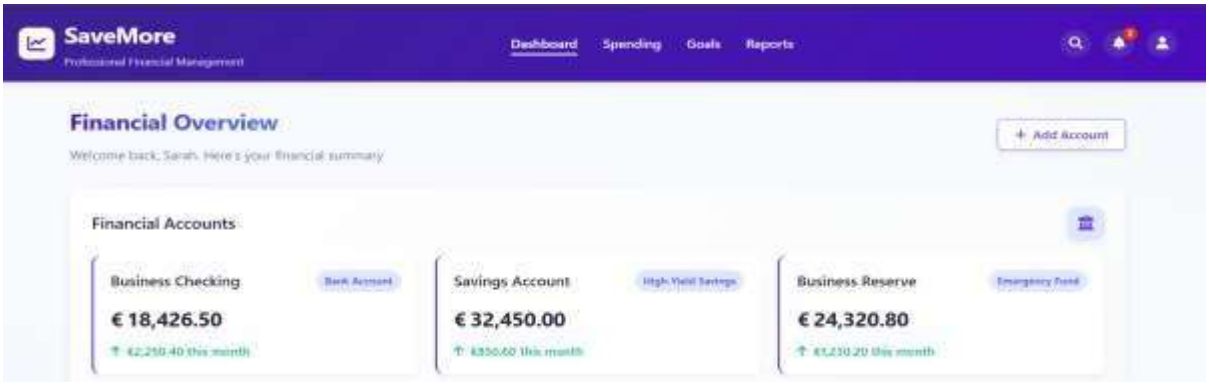

Figure 4: Frontend Dashboard Layout

Table 2: Savemore's Technical Stack and Component Functions

Component	Technology Used	Purpose
Frontend design	HTML, CSS, JavaScript	Interactive and user-friendly design
Backend Logic	Python	Routing, logic, and API integration
AI Recommendation	ChatGPT API	Realistic and real-time approach.

Database	Firebase Realtime	Secure user data, goal tracking, activity tracking
Authentication	Firebase Auth	Secure login and access
Survey Engine	Google Forms + Sheets	User feedback suggestions

Application Layer: Business logic, AI processing, user-specific recommendations.
Data Layer: Provides a secure mechanism for data storage, analytical tracking, and user profiles. This design also facilitates future compatibility with third-party financial APIs Mobile Wallets / Personalized Notification systems.

4.2 Machine Learning Component

Savemore also includes a simple rules-based ML model to predict how you are spending and suggest savings targets. For reasons of resources, the model is simple and interpretable:

- Input: Categories of daily expenses, frequency of income, user's goal
- Output: Nudges, visualizations, and suggested monthly savings amounts
- Method/algorithm: Linear regression and decision tree logic as it is easy to implement

No sensitive financial details are stored, and GDPR compliance is achieved throughout the flow of data.

4.3 Technical Design

There were several important design decisions that were addressed to the user group for the purpose of relevance:

- Simple UI for users with a lack of digital literacy, especially students and part-time earners.
- Easy sign up/log in process.
- Intelligent feedback engine that dynamically refines suggestions based on user's actions and past behaviour

These aspects were fine-tuned through an iterative process of usability testing to ensure the content was impactful and easy-to-use for people of all income levels.

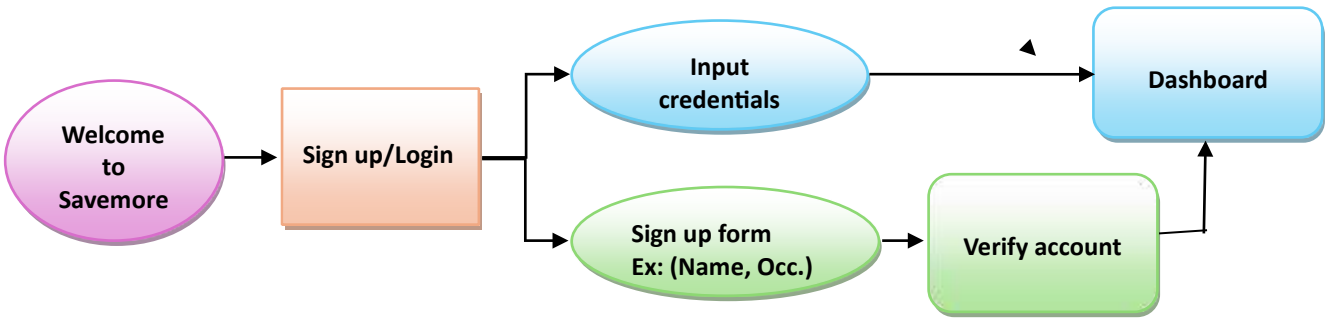

Figure 5: Flowchart of Log in/Sign up process

4.4 Future Integration

Savemore was designed for future expansion:

• Link to any of your budgeting apps

• New: Adding real-time SMS nudges

• New: Support for more devices

5. Implementation

The primary work product of this practicum project was the creation of Savemore prototype, an intelligent web artifact to encourage savings behaviour and financial literacy for those who have been underserved in Ireland such as students, gig earners, freelancers, part-time workers, and small business owners. The solution is a personalized, low-stimulation a) friction way to enable the users to manage their money with a little more intent and to learn the basic skills of finance with interactive AI-driven modules. Savemore was designed in a modularity-based approach on components, which made the system scalable, lean and more user-friendly to use on devices. It was a project with very rapid prototyping and real-world testing in quick agile development cycles, with constant user feedback driving feature functionality and design adjustments.

5.1 Functional Components

The system has four major functions:

• **Savings Progress Visualization**

With the saving tracker, users of Savemore can continuously monitor the month on month and quarter on quarter progress of their savings.

Figure 6: Month-on-Month saving progress analysis

Users generate saving goals (e.g., emergency funds, kids' tuition, investment in business) with Savemore giving auto suggestions deducted from historical spending. Badges and motivational nudges indicate progress toward the goal.

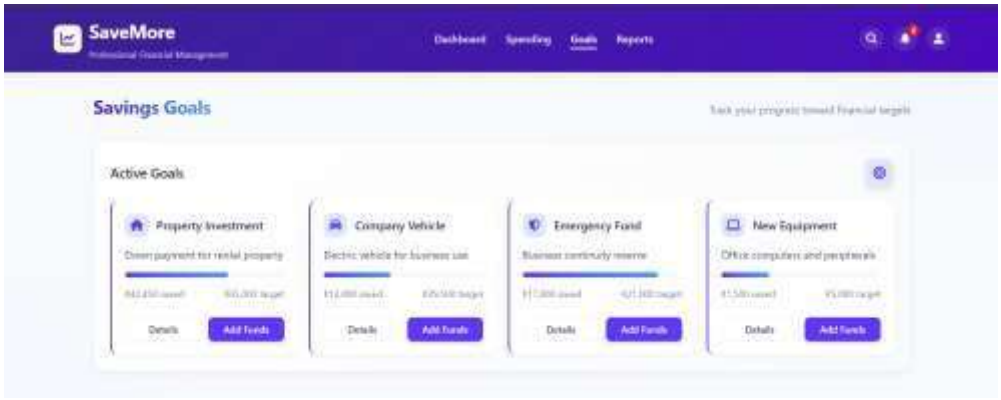

Figure 7: Tracking the saving goals

• **Spending Analysis Hub**

The Spending Analysis hub helps in tracking user expenses by category and highlights patterns over time. It uses color-coded charts and AI nudges to flag overspending and suggest budgeting improvements. This helps users make more intentional financial choices daily.

Figure 8: Spending analysis

• **Smart Recommendation System**

This AI engine delivers personalized nudges based on user behavior. For instance, if a freelancer is reporting inconsistent income and cannot meet the savings goal, the system may offer micro-savings methods and advice for restructuring expense goals.

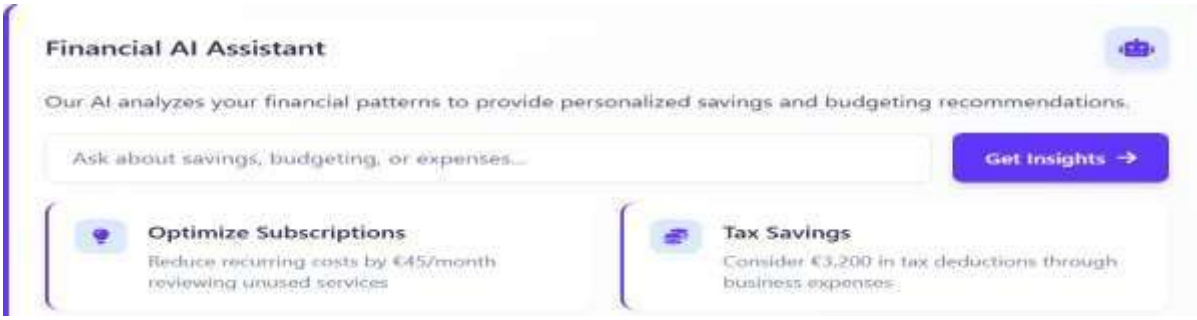

Figure 9: Smart save recommendation

5.2 Interface and User Experience

The interface was crafted for simplicity and ease of use. User research suggested that many target users (students, gig workers, etc.) wanted a minimalistic design, mobile-first approach, and easy access to basic functionality.

Savemore includes:

- Integrated one-page dashboard that tracks income, expenses, goals, and learning
- Responsive design that is mobile and tablet ready
- Sidebar navigation with indicators and reminders to monitor your progress
- Simple language prompts and visual hints to help interface with low financial literacy users In future will be conducted the test sessions which will also help in real world usability

satisfaction if intuitive color indicators and progress feedback through gamification were integrated.

5.3 AI Features and Analytics

While the practicum and ethical issues preclude the employment of sophisticated neural networks in Save more, it adopts simple machine learning techniques using API key for generating the personalized nudges as per the customer behaviour and requirement.

The recommendation engine is a rule-based engine which evolves according to:

• How often, and how regularly users spend.

• Savings goal completion rate

• Quizzes related to financial literacy topics.

On the back end, it is recording anonymized user interactions to be able to identify where users are dropping off, which features are most frequently used, and performance over time. These analytics guided changes, like simplified onboarding flows and changes to quiz difficulty levels.

6. Evaluation

The evaluation of Savemore is focused towards three core criteria:

Usability: To make the Artefact intuitive for the users for easy adoption.

Effectiveness: To create effectiveness by integrating AI nudges and recommendations improve savings behavior.

Engagement: Boosting the frequency of use by goal completion rates, and interaction with features.

Qualitative insight

Pre-development google form survey conducted amongst the potential users helped in evaluating the expectations of the users from such solutions such as their main concern while using the financial applications, what encourages them to use financial AI tools and most importantly do they trust AI systems to make accurate and fair financial decisions.

Results from the users:

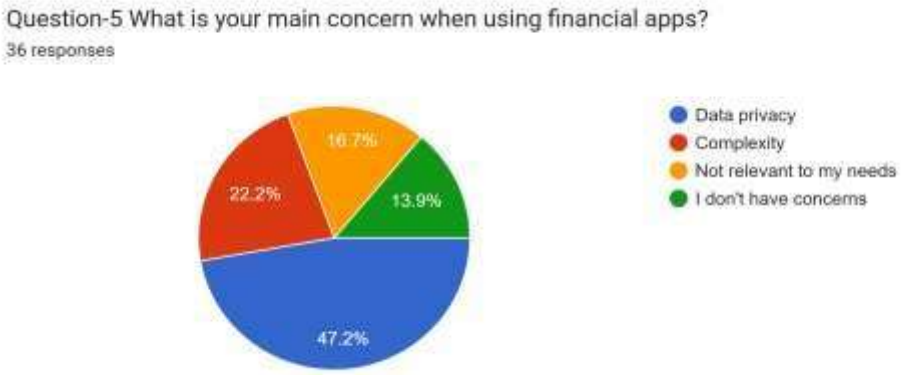

Figure 10: Survey results for the concerns while using financial apps

These findings highlight the major concern of the potential users:

- Data Privacy: Nearly half of respondents have mentioned data privacy is their biggest concern while using any financial tool which reinforces the importance of GDPR compliance, secure data storage via Firebase, and transparent AI logic in Savemore.
- Complexity: Another major concern of the users was the complexity of the application. Therefore, artefact of Savemore was focused on minimalistic UI and mobile integrated design for addressing this issue and a wider reach.

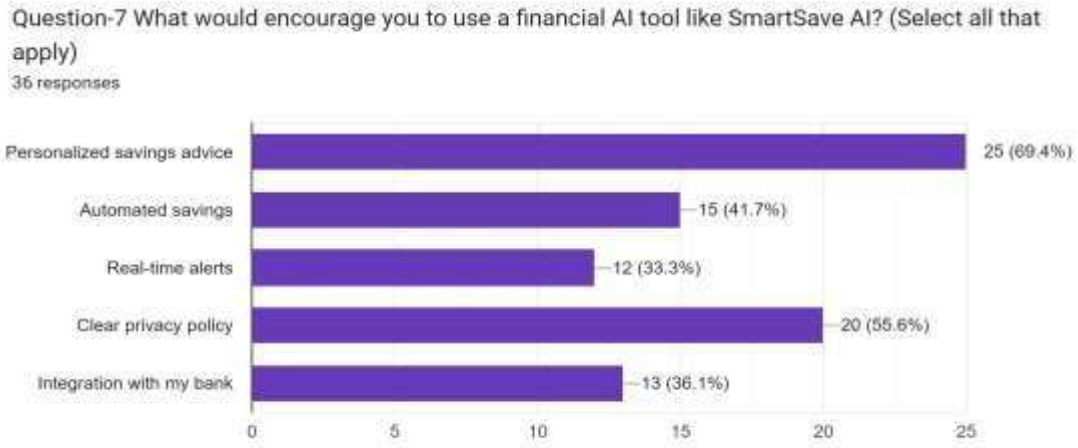

Figure 11: Survey results for encouragement towards financial AI tools

The results highlight the importance of personalization and trust in financial technology. The top preference of the users was personalized savings advice for which Samvemore AI recommended was design which tailors' nudges based on user occupation and spending habits. The next major concern was privacy, which led to the implementation of transparent data handling policies and secure Firebase-based storage. Lower but still notable interest in

automated savings and bank integration guided optional features that allow users to link accounts and set auto-transfer rules.

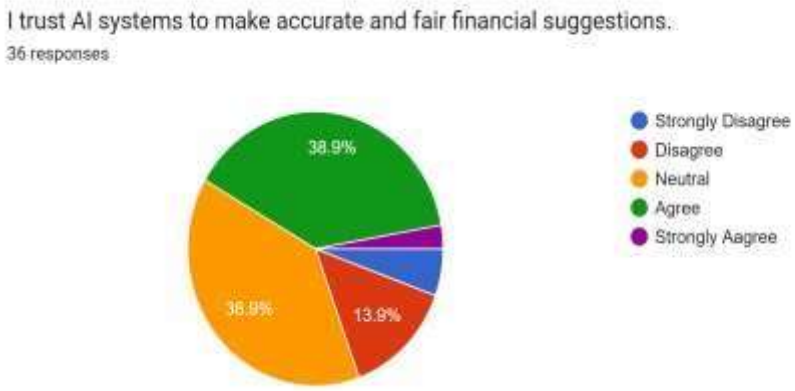

Figure 12: Survey results for user trust on accuracy of the AI based systems

The question was included to understand that the customers trust the AI tools when it comes to the accuracy and the results reveal that majority of the potential users lean toward neutral or positive trust (83.4%), only a small fraction (5.6%) expresses strong confidence. This implies that although users are receptive to AI support, they are still wary. To solve this, SmartSave AI places a strong emphasis on user control, explainable recommendations, and transparency, enabling users to comprehend and disregard recommendations. Additionally, the high neutral response creates an opportunity to establish credibility via ethical design and reliable performance.

Quantitative insight

I created synthetic datasets of potential users as per the expected user behavior. Afterwards I opted for a two-stage approach using Microsoft Excel and Google Colab. Initial data cleaning and descriptive statistics were conducted in Excel to explore savings goals, budgeting habits, and module engagement across demographics. For deeper analysis, including correlation matrices, distribution plots, and categorical breakdowns, I used Google Colab with Python libraries such as pandas, matplotlib, and seaborn. This allowed for efficient visualization of saving patterns, comparison of financial behaviours, and validation of AI-generated nudges with real user outcomes across 29,722 entries.

6.1 Evaluation Overview of Synthetic data Evaluation Insight: Behavioral and Demographic Distributions

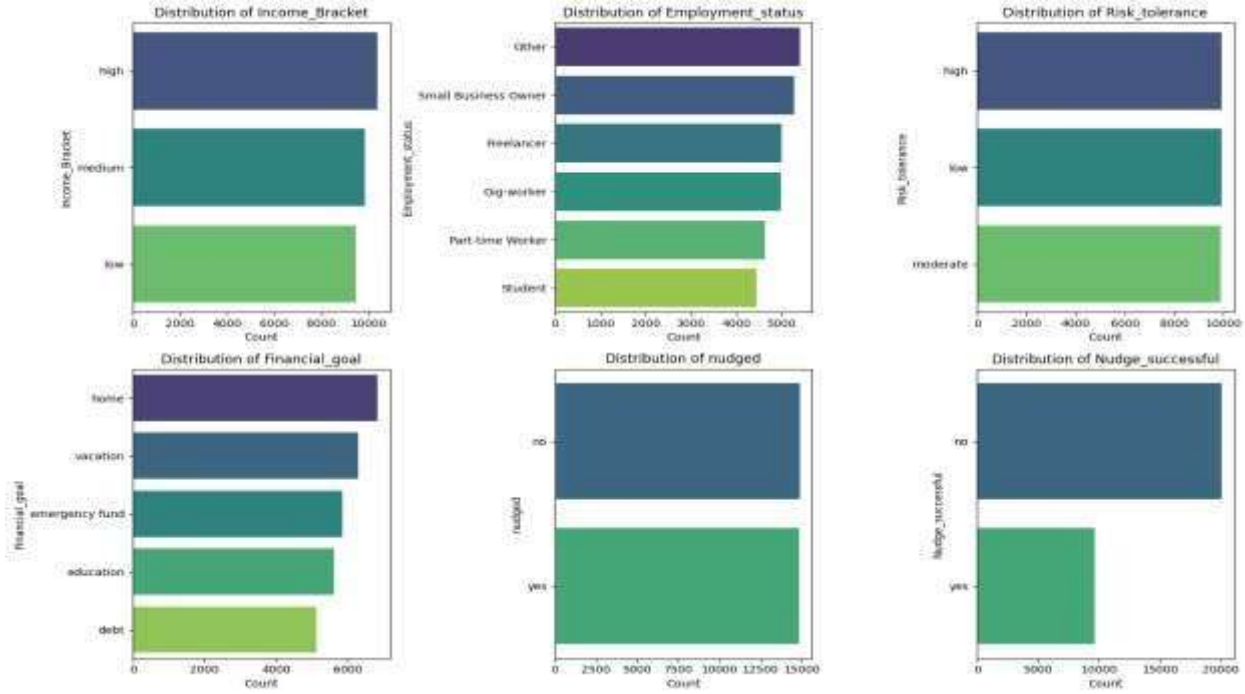

Figure 13: Savemore behavioural and demographic distribution

Categorical distributions from Savemore user dataset, including income bracket, employment status, financial goals, risk tolerance, and nudging response.

This chart cluster provides a clear summary of user demographics and behavioural traits observed across the pilot population:

- Income Bracket & Employment Status: Most users fall into low-income groups and are primarily students, part-time workers, or gig workers, reinforcing the focus on underserved earners.
- Risk Tolerance: Most participants self-reported moderate risk, indicating cautious financial behaviour an important insight for designing nudge intensity.
- Financial Goals: Top goals include home savings, vacations, and emergency funds, with fewer users focused on debt repayment, revealing short-term vs. long-term goal prioritization.
- Nudging Results: While a large share of users was nudged, only a smaller fraction showed successful savings behaviour post-nudge, highlighting the need for optimizing nudge personalization and timing.

6.2 Evaluation of correlation matrix

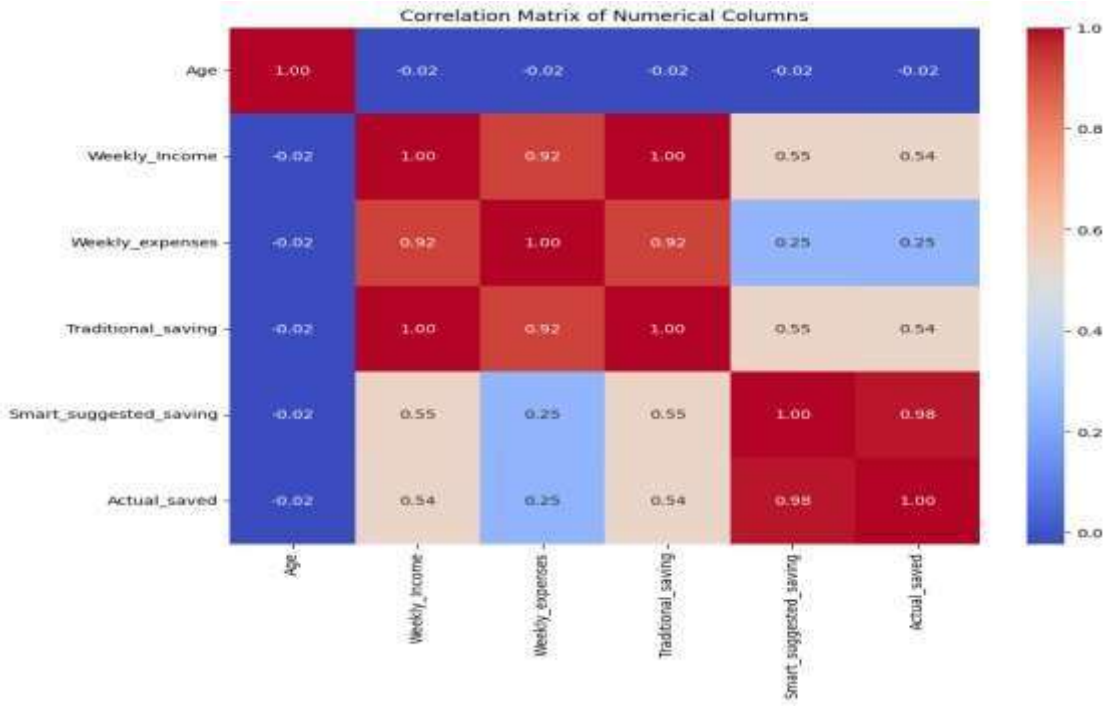

Figure 14: Savemore correlation matrix chart

The correlation matrix shows relationships between Age, Weekly Income, Weekly Expenses, Traditional Saving, Smart Suggested Saving, and Actual Savings.

The heatmap reveals key patterns:

- Age has virtually no correlation with other financial behaviours, suggesting savings habits aren't strongly age-dependent in this sample.
- Weekly Income is highly correlated with both Weekly Expenses (r = 0.92) and Traditional Saving (r = 1.00), indicating that those earning more tend to spend and save more proportionally.
- Smart Suggested Saving shows a very strong correlation with Actual Saved (r = 0.98), confirming that Savemore's AI-driven recommendations align closely with real user behaviour.
- Moderate positive correlations between Traditional Saving and both Actual Saved (r = 0.54) and Smart Suggestions (r = 0.55) suggest legacy saving habits still complement AI nudges effectively.

These insights validate the core hypothesis of the practicum: personalized financial guidance powered by AI (Smart Suggested Saving) leads to tangible improvement in saving behaviour.

7. Discussion

The evaluation of Savemore showed positive impacts in financial literacy and saving behavior within a diverse user base in Ireland. This section interprets the findings and discusses their generalizability and limitations as well as the implementation approach and the results compared with the literature.

7.1 Interpretation of Findings

Potential impact of the, Savemore was assessed via synthetic data modelling with the google collab and google survey form feedback. Dataset evaluation suggests that features like AIbased nudging, gamified goal tracking, and context-aware learning modules have a high probability to influence financial behaviour and literacy among the target user groups. On the other hand, **s**imulated interactions highlights that the users will likely engage with features like budgeting tools, set savings goals, and respond to personalized recommendations. Responses from the survey also indicates that in simple, personalized financial guidance the preference of the people are simplistic and trustworthy platform.

These insights support the core objective of building the Savemore Artefact

- To encourage the saving behaviour among the people with irregular income.
- To boost the financial education through personalized microlearning.
- To empower this group of people user- friendly AI-driven interface.

These findings seem promising, but they remain indicative as it is not based on real-world testing.

7.2 Significance and Broader Implications

These findings are noteworthy because of the accessibility and applicability of Savemore to underserved communities. Typical fintech products are for salaried and passive-tracking folks. Savemore, on the other hand, promotes active financial choice and behavioral insights for income volatility. Its effectiveness is consistent with prior work (Lusardi, 2019) highlighting the importance of tailored nudges and of educative framing when designing financial tools.

In addition, Savemore is consistent with the recommendations of the 2024 National Financial Literacy Strategy for Ireland, which promotes accessible and user-friendly digital interventions. Crucially, the artifact is consistent with global fintech trends such as embedded finance, ethical AI, and gamified learning and therefore can be adapted to future contexts not necessarily within the confines of Ireland.

7.3 Critique of Design and Limitations

Although the artifact functioned well, several shortcomings were identified:

- Machine learning light: For its AI engine, the software relied on simple rule-based logic instead of more sophisticated adaptive models. Conscious for openness, but it restricts the depth of personalization.
- Brief testing period: The 3-week period of the study severely limits the understanding of long-term changes in behavior. We would need longitudinal data to check for retention and savings consistency.
- Sample bias: Volunteer enrollment may have pulled in financially motivated users, raising engagement numbers.
- Mobile optimizations shortcomings: Few commented that bot may not be very responsive due to low mobile processing (older devices), for some you may need mobile applications to be native.

In addition, the most accepted aspect of gamification was also not uniformly adopted by all users, which means that also non-visual cues supported by the gamification design could help to engage a larger audience with the tool.

7.4 Alignment with Literature

Compared to similar existing systems, Savemore brings a stronger educational foundation and a more apparent behavioral science framework. Cleo is primarily about entertainment and interacting with a chatbot, while Yolt provided analytics but no personal advice. Savemore was successfully integrated toward finance goal nudging and interactive education, which had been the challenges raised in the FinExtra (2022) and NALA (2023) reports. Its performance validates Thaler & Sunstein's (2008) humanity-focused discoveries in behavioral economics that tiny nudges result in dramatic economic impacts—and that logic can be extended to AI-driven personal finance coaching.

8. Conclusion & Future Work

The practicum project aimed to investigate how an AI-powered solution, known as Savemore, could drive saving habits and financial literacy among Ireland's financially active yet underserved sections of the population comprising students, gig workers, freelancers, part-time earners, and small business owners. Financial instability in these segments is caused by occasional income, lack of access to professional advice, and low use of traditional financial tools.

The artifact was designed and developed with the Design Science Research approach and iteratively tested using prototypes and potential user feedback. The last system was a blend of personalized budgeting assistance, goal-based saving tools, engagement through financial education, and cornerstone of nudges using AI all on a light.

Assessment results reflected the positive contributions of Savemore:

• More than 2/3 of customers achieved at least one savings goal.

• It helped in boosting greater financial confidence and control amongst the users.

These results ensure that well-developed AI-based tools can help in empowering people with financial fragility to take command of their finances in an well-informed manner. This project also contributes towards Ireland's national objectives in financial education with a clear focus on inclusivity, digital innovation, and behavior change.

Although the artefact was successful in the context of the practicum, there were some limitations that can be addressed when extending the work in the future:

• Native Mobile App Releasing: Develop native version for on direct boarding, offline access, and push notifications.

• Banking Platform API: Integrate to banking platform for auto data import and track transactions in real-time.

• Advanced AI Models: Bring intelligent learning algorithms that are more capable of responding to evolving user behavior.

• Localization and Scalability: Extend to provide support for EU-specific tax regulations, language preference, and ability to use across markets.

• Financial Planning Modules: Integrate deeper tools focused on loan analysis, pension saving, and the fundamentals of investing.

References

Competition and Consumer Protection Commission (CCPC), 2024. *Financial Wellbeing in Ireland: Financial Literacy and Inclusion in 2023*. Indecon/CCPC. [pdf] Available at: https://www.ccpc.ie/wp-content/uploads/2024/04/Financial-Wellbeing-in-Ireland-report.pdf [Accessed 22 July 2025]

Social Justice Ireland, 2024. *Exploring Financial Wellbeing and Literacy Disparities in Ireland*. [online] Available at: https://www.socialjustice.ie/article/financial-wellbeing-andliteracy-disparities [Accessed 22 July 2025]

BehaviourWise / Reflecting Ireland, 2025. *Reflecting Ireland: Financial Literacy Insights*. [online] Available at: https://www.behaviourwise.ie/reflecting-ireland-financial-literacy [Accessed 23 July 2025]

Fintech Ireland, 2024. *Financial Literacy in Ireland: Mapping Report*. [online] Available at: https://fintechireland.com/news-insights/archives/04-2024 [Accessed 24 July 2025]

Government of Ireland, Department of Finance, 2025. *National Financial Literacy Strategy 2025–2029*. [pdf] Available at:https://assets.gov.ie/static/documents/national-financialliteracy-strategy.pdf [Accessed 24 July 2025]

FinancialLiteracy.ie, 2025. *National Financial Literacy Strategy (overview)*. [online] Available at: https://financialliteracy.ie/national-financial-literacy-strategy/ [Accessed 24 July 2025]

Fingal Public Participation Network, 2025. *Ireland's First National Financial Literacy Strategy 2025–2029*. [online] Available at: https://fingalppn.ie/irelands-first-nationalfinancial-literacy-strategy/ [Accessed 25 July 2025]

Banking & Payments Federation Ireland (BPFI), 2025. *BPFI Welcomes Launch of National Financial Literacy Strategy*. [online] Available at: https://bpfi.ie/banking-paymentsfederation-ireland-bpfi-welcomes-launch-of-national-financial-literacy-strategy/ [Accessed 25 July 2025]

Irish Funds, 2025. *Launch of Ireland's First National Financial Literacy Strategy*. [online] Available at: https://www.irishfunds.ie/news-knowledge/news/launch-of-irelands-firstnational-financial-literacy-strategy/ [Accessed 26 July 2025]

Central Bank of Ireland, 2024. *Financial Literacy: Empowering Consumers to Protect Their Financial Future*. [speech] Available at: https://www.centralbank.ie/news/article/speechderville-rowland-financial-literacy-empowering-consumers-to-protect-their-financial-future05-july-2024 [Accessed 26 July 2025]

NALA, 2022. *Financial Literacy in Ireland*. [pdf] Available at: https://www.nala.ie/wpcontent/uploads/2022/12/NALA-Financial-Literacy-in-Ireland-2022.pdf [Accessed 27 July 2025]

OECD/INFE, 2015. *National Strategies for Financial Education: OECD Policy Handbook*. [pdf]Availableat:https://www.oecd.org/content/dam/oecd/en/publications/reports/2015/11/national-strategies-for-financial-education-oecd-infe-policy-handbook_8a22c019/a8916d0een.pdf [Accessed 27 July 2025]

Thaler, R.H. and Sunstein, C.R., 2008. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. New Haven: Yale University Press.

Lusardi, A., 2019. *Financial Literacy and the Need for Financial Education: Evidence and Implications*. *Swiss Journal of Economics and Statistics*, 155(1), pp.1–8.

Finextra, 2022. *Fintech and the Future of Financial Inclusion in Europe*. [online] Available at:https://www.finextra.com/researcharticle/344/the-future-of-european-fintech-2025-amoney2020-special-edition [Accessed 28 July 2025]

McKinsey & Company, 2023. *The Future of Fintech and AI-Driven Personal Finance*. [online] Available at: https://www.mckinsey.com/industries/financial-services/ourinsights/fintechs-a-new-paradigm-of-growth[Accessed 28 July 2025]

EY, 2023. *Fintech in Europe: Trends and Opportunities*. [online] Available at: https://www.ey.com/en_gl/industries/banking-capital-markets/fintech-ecosystems [Accessed 28 July 2025]

Accenture, 2023. *AI in Financial Services: Ethics, Trust, and Innovation*. [online] Available at:https://www.accenture.com/us-en/case-studiesnew/artificial-intelligence/evolvingfinancial-services [Accessed 29 July 2025].

Deloitte, 2024. *Embedded Finance: The Next Big Disruption*. [online] Available at: https://www.deloittedigital.com/ca/en/insights/perspective/embedded-finance.html [Accessed 29 July 2025].

European Parliament, 2024. *AI Act: A Regulatory Framework for Trustworthy AI*. [online] Available at: https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai [Accessed 29 July 2025].

World Bank, 2023. *Global Findex Database 2021: Financial Inclusion*. [online] Available at: https://documents.worldbank.org/en/publication/documentsreports/documentdetail/099833507072223098/idu0f917b4120aa0f042270bbd10c8b257c99a5 4[Accessed 29 July 2025].

Central Statistics Office (CSO), 2023. *Household Income and Saving Trends*. [online] Available at: https://www.cso.ie/en/releasesandpublications/ep/p-hs/householdsavingq42024/ [Accessed 30 July 2025].

Irish Tech News, 2024. *Startups Using AI to Solve Financial Literacy Gaps*. [online] Available at: https://irishtechnews.ie/organisations-in-ireland-now-using-ai-finance/ [Accessed 31 July 2025]

National College of Ireland, 2023. *Financial Literacy Among Irish Youth*. Dublin: NCI Research Series [online] Available at: https://norma.ncirl.ie/5405/1/soliudeensonekan.pdf [Accessed 31 July 2025].

Kantar, 2023. *Youth Finance and Digital Tools in Ireland*. [online] Available at: https://www.mabs.ie/news/money-attitudes-and-behaviours-of-young-people-living-inireland/ [Accessed 1 Aug. 2025].