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PAY SURE: A USER-CENTERED MOBILE APPLICATION FOR ENHANCING FINANCIAL MANAGEMENT OF WOMEN'S DEVELOPMENT GROUPS IN SOUTHERN THAILAND

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Abstract

This research aimed to develop and evaluate PAY SURE, a user-centered mobile application for financial management among women's development groups in Yala province, Southern Thailand. These groups are vital for local economic development but often face challenges in financial literacy and access to appropriate digital tools. Employing a Research and Development (R&D) approach, the study utilized the ADDIE model for systematic development and User-Centered Design (UCD) principles to ensure accessibility for users with limited digital literacy. PAY SURE offers intuitive functions for recording investments, expenses, income, and generating financial reports. Evaluation, based on ISO/IEC 25010, TAM, and SUS frameworks, and in-depth interviews, revealed high levels of application performance and user satisfaction. Participants praised its user-friendliness and effectiveness in financial tracking and debt management. This study highlights the success of UCD and iterative development for digital financial inclusion, providing a transferable model for similar community initiatives across Asia. The findings offer valuable insights to help policymakers enhance financial literacy and foster economic resilience among grassroots women's groups through localized digital tools.

Keywords: Mobile Application, Financial Management, User-Centered Design, Women's Development, Digital Financial Inclusion

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Introduction

Currently, grassroots economic development serves as a critical mechanism for fostering social stability and reducing inequality, particularly in Thailand's Southern Border Provinces, which are characterized by diverse cultures and lifestyles. A key entity driving the grassroots economy is the "Women's Development Groups," community organizations formed by local women under the patronage of the Ministry of Social Development and Human Security. These groups aim to encourage women's participation in local economic, social, and environmental development through occupational activities, savings, and community resource management. These groups play a significant role in job creation, income generation, and strengthening the grassroots economy (The Secretariat of the House of Representatives, 2021). Empowering women in these communities is thus a crucial approach to sustainable local development, encompassing resource management, vocational training, and improving the quality of life for families and the community.

Despite the prominent role of these women's groups in community development and livelihood creation, their internal financial management often faces several limitations. Most women's groups face difficulties with systematic bookkeeping, financial data analysis, and structured debt-repayment planning. This hampers their ability to assess financial liquidity or plan long-term business operations effectively. Furthermore, many Women's Development Groups borrow funds from the Women's Development Fund under the Ministry of Social Development and Human Security to create livelihoods and improve their quality of life. Although these are zero-interest loans, a lack of sound accounting practices and appropriate debt repayment planning can jeopardize the group's long-term economic sustainability (Pankeaw, 2024).

In the digital era, integrating technology into financial management has become a crucial tool for enhancing the operational efficiency of community enterprises and Women's Development Groups. The use of mobile applications for bookkeeping and financial data analysis enables accurate recording, tracking, and evaluation of income and expenses, which is vital for long-term debt repayment planning and liquidity management within these groups. Furthermore, leveraging analytical data from digital accounting systems can facilitate more systematic debt repayment planning (Singtanasarn et al., 2024), thereby increasing on-time repayment rates. This study aligns with the trend in Thailand toward promoting the adoption of digital technology by Women's Development Groups for systematic bookkeeping and debt planning, enabling them to assess their financial capacity and allocate resources efficiently. Therefore, developing a mobile application tailored to the context of women's groups in Yala province is not merely an accounting tool but also a critical mechanism for strengthening community economic stability in the long run.

While numerous financial and accounting mobile applications, including income-expense trackers, small-business accounting apps, and personal debt-management tools, are currently available, most are designed for general users or entrepreneurs with a certain level of digital literacy and accounting knowledge. These existing applications primarily focus on recording financial data and often lack integrated tools for analyzing debt-repayment capacity tailored to the specific context of community-based occupational groups. Within the context of Women's Development Groups in Yala province, these users face limitations in digital literacy and accounting experience, and have a distinct cultural background compared to typical users. Furthermore, there is a clear lack of research on developing financial applications specifically for these groups, particularly those that integrate bookkeeping with debt-repayment capacity analysis. This study, therefore, aims to address the research gap by developing the "PAY SURE" application. This digital tool is designed with a community-centric approach, featuring a user-friendly, uncomplicated interface and integrating core accounting principles with debt-repayment capacity analysis. Its objective is to tangibly strengthen the financial capacity and economic sustainability of Women's Development Groups in Yala province.

Given the aforementioned background and challenges, developing a mobile application to analyze bookkeeping and debt-repayment capacity for Women's Development Groups in Yala province, particularly the Ibroheng Batik Women's Group, will significantly improve their financial management. The primary objective of this research is to develop an efficient mobile digital tool that integrates accounting principles and financial analysis to assess the debt-repayment capacity of Women's Development Groups in Yala Province. Concurrently, it aims to evaluate the application's quality in terms of its operational efficiency and user satisfaction. Beyond enhancing efficiency in bookkeeping and debt planning, this application will foster financial discipline and strengthen women's capacity for economic management in the community, ultimately contributing to sustainable economic stability and self-reliance.

Literature Review

The development of digital tools on mobile devices has gained significant importance in the current digital era, as smartphones have become primary tools for communication and personal data management. Consequently, the design and development of mobile applications must prioritize User Experience (UX) and Usability to effectively meet the needs of target users (Weichbroth, 2024). Furthermore, human-centered design principles, combined with development approaches that facilitate system improvement based on user feedback, such as the Agile methodology, which emphasizes flexibility and continuous system refinement from user input, are also applied in application development. This ensures that functions and system architecture continuously align with real-world usage contexts (López et al., 2023). This approach is particularly suitable for user groups with limited digital literacy, such as community-based women's development groups. Lu et al. (2025) confirm that a design that directly considers user experience impacts users' technology acceptance, especially for those with limited digital skills. Many recent developments in digital tools have adopted the ADDIE Model, a systematic development process comprising five phases: Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model is well-suited for mobile application development projects as it aids in analyzing user requirements and designing content that systematically aligns with real-world usage contexts, especially for user groups with limited technological backgrounds (Samsudin et al., 2021). Therefore, the development of mobile applications for women's groups in communities should combine the systematic ADDIE model with User-Centered Design (UCD) principles, a critical framework for digital application development. UCD aims to involve users from requirements analysis, prototype design, and refinement based on real user feedback, ensuring the system aligns with the target group's context and limitations. Farasalsabila et al. (2023) and Dananjaya et al. (2024) state that applying UCD principles in application development makes the user interface more intuitive. It facilitates a better user experience, leading to higher perceived system convenience and suitability and increased user satisfaction.

Bookkeeping and debt-repayment capacity analysis are fundamental to establishing financial discipline and systematic debt planning, particularly for households or small occupational groups that often lack access to efficient, easily accessible financial tools. Jumady et al. (2024) state that financial literacy and the consistent recording of income and expenses are crucial for reducing debt burdens and enhancing household economic stability, as they enable users to understand their income and expenditure structures clearly. Concepts related to household financial management bookkeeping can draw on Ajzen's (1991) Theory of Planned Behavior (TPB), which posits that an individual's financial behavior depends on their attitude, subjective norms, and perceived behavioral control. Encouraging continuous bookkeeping behavior among women's groups in the community is thus part of fostering positive attitudes towards financial management and disciplined debt repayment. Concurrently, evaluating debt repayment capacity involves analyzing the relationship between income and debt using

financial indicators such as the Debt-to-Income Ratio (DTI) (Liu, 2025). This aligns with the Personal Financial Planning Theory, which posits that debt management is a vital component of the financial planning cycle. Individuals must systematically analyze their financial status, from assessing income, expenses, assets, and liabilities, to understand their capacity to bear financial obligations at various life stages (Black et al., 2002). When bookkeeping and debt-repayment capacity assessment systems are continuous and accurate, the application of digital technology significantly enhances the efficiency and accessibility of financial data management. This includes using mobile applications to record expenses, calculate net income, and forecast future debt repayment capacity (Holton & Holton, 2025). French et al. (2021) found that using smartphone financial applications helps foster financial planning behaviors and significantly reduces the risk of loan defaults. Therefore, integrating theoretical concepts with technology in application development is crucial to strengthening the financial capabilities of women's development groups, enabling them to manage their accounts and plan sustainable debt repayments systematically.

Evaluating system performance and user satisfaction is crucial in information technology development, as it provides a comprehensive assessment of quality and user experience. The ISO/IEC 25010 standard defines eight software product quality characteristics, which are a key framework for evaluating newly developed applications. These include Functional Suitability, Performance Efficiency, Compatibility, Usability, Reliability, Security, Maintainability, and Portability. Debnath et al. (2021) indicate that this standard can be adapted to the system's specific characteristics. In this research, five software characteristics are used: Functional Suitability, Performance Efficiency, Usability, Reliability, and Security. Furthermore, Pislac-ngam et al. (2024) suggest that user satisfaction evaluation should consider both Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), based on frameworks like the System Usability Scale (SUS) (Brooke, 1996) and the Technology Acceptance Model (TAM) (Davis, 1989). In this study, TAM is used to explain user acceptance of the PAY SURE application, focusing on Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), which are critical factors influencing the intention to continue using the application. Concurrently, SUS is employed as a practical tool to evaluate real user experience. Both concepts are integrated, with TAM explaining users' behavioral mechanisms and SUS reflecting the empirical quality of the system's usability.

Based on the literature review, this research systematically integrates relevant theories and frameworks. The ADDIE model serves as the structural framework for defining the analysis, design, development, implementation, and evaluation phases of the PAY SURE application. This ensures a systematic development process and enables continuous improvement based on real user feedback, aligning with the context of women's development groups in the community. Concurrently, the Theory of Planned Behavior (TPB) and the Technology Acceptance Model (TAM) are used as frameworks to explain user behavior and technology acceptance, particularly regarding perceived usefulness and ease of use, which influence intentions to continue using the technology. The System Usability Scale (SUS) and the ISO/IEC 25010 standard are used to evaluate the system's quality and user experience empirically. Furthermore, concepts from Personal Financial Planning Theory are referenced to underscore the importance of systematic analysis of income, expenditure, assets, and liabilities. This aligns with the core functions of the PAY SURE application, which focuses on basic bookkeeping and debt capacity tracking rather than comprehensive financial planning. The integration of these concepts ensures that the development and evaluation of the PAY SURE application are consistent with both theoretical and practical perspectives, effectively addressing the real-world usage context of women's development groups in the community.

Research Conceptual Framework

Input Factors	Operational Process	Output
• Context and characteristics of women's development groups in Yala province • Needs and challenges in bookkeeping and debt repayment planning • Financial data of women's groups (income, expenses, investments, and debts) • Technology for developing mobile-based digital tools • Theoretical and conceptual frameworks: - ADDIE Development Model - Technology Acceptance Model (TAM) - System Usability Scale (SUS) - ISO/IEC 25010 Software Quality Model	• Development of the PAY SURE application based on the ADDIE model: - Analysis - Design - Development - Implementation - Evaluation • User-centered application design and refinement (UCD) • Experimental implementation with Ibroheng Batik Women's Group, Yala province • Expanded implementation with other women's development groups in Yala province • Evaluation of application performance and user acceptance	• PAY SURE application for bookkeeping and debt repayment capacity analysis • Application user manual • Results of application performance evaluation based on ISO/IEC 25010 • Results of user satisfaction and technology acceptance evaluation based on TAM and SUS • Guidelines for applying digital tools to enhance financial management capacity of women's development groups

Figure 1 Research Conceptual Framework

Research Methodology

Population and Sample

This research adopted a Research and Development (R&D) approach, using a sequential mixed-methods design (the sequential use of qualitative and quantitative data) to support application development and usage evaluation. Quantitative data were used to assess the application's performance and facilitate its expansion, with a focus on evaluating user performance and satisfaction. Concurrently, qualitative data were used to capture user experiences, identify problems, and gather suggestions, which informed the application's refinement. The population comprised 75 Women's Development Groups in Yala province that received revolving funds in the fiscal year 2024 (Yala Provincial Community Development Office, 2024).

For the pilot phase, a purposive sample was selected: the Ibroheng Batik Women's Group in Krong Pinang sub-district, Krong Pinang district, Yala province, involving 20 participants. For qualitative data collection, the researchers conducted in-depth interviews with 12 members of the pilot group to gather recommendations for improving the PAY SURE application. The number of qualitative data providers was determined by the principle of data saturation, with data collection ceasing when recurring themes emerged and no new significant information was found. Subsequently, the researchers expanded the application's use to 9 additional Women's Development Groups in Yala province, bringing the total to 90 participants. These groups were selected based on similar occupational activities and operational contexts to evaluate the application's performance and user satisfaction, and to reflect its broader suitability for community-level implementation.

Research Instruments

1) PAY SURE Application: The PAY SURE application's core functions include: 1) investment recording, 2) expense recording, 3) income recording, and 4) financial reporting. This application was developed by applying the ADDIE model, comprising five stages: 1) Analysis, 2) Design, 3) Development, 4) Implementation, and 5) Evaluation.

2) Application Usage Performance Evaluation Form: This instrument was used to measure the operational performance of the PAY SURE application in terms of functional accuracy, functional suitability, and overall system efficiency. It referenced the ISO/IEC 25010 software quality standard, covering five dimensions: functional suitability, performance efficiency, usability, reliability, and security. A 5-point Likert scale was utilized. Three experts in information technology and accounting validated the questionnaire for content validity, yielding an IOC (Index of Item Objective Congruence) value between 0.67 and 1.00, which is within the acceptable range (≥ 0.5) (Yaghmaie, 2003). The reliability of this evaluation form was assessed using Cronbach's alpha, resulting in a coefficient of 0.88, indicating good reliability (≥ 0.70) (Nunnally, 1978).

3) User Satisfaction Evaluation Form for the Application: This instrument measured users' opinions regarding the PAY SURE application, drawing concepts from the System Usability Scale (SUS) and the Technology Acceptance Model (TAM). It covered four main aspects: Perceived Ease of Use (PEOU), Perceived Usefulness (PU), System Usability Scale (SUS), and overall satisfaction. A 5-point Likert scale was employed. Three experts validated the questionnaire for content validity, yielding IOC values between 0.67 and 1.00, which are within the acceptable range (≥ 0.5) (Yaghmaie, 2003). The reliability of this evaluation form was assessed using Cronbach's alpha, resulting in a coefficient of 0.91, indicating very good reliability (≥ 0.70) (Nunnally, 1978).

Data Collection and Data Analysis

The developed PAY SURE application was deployed for real-world use by the Ibroheng Batik Women's Group in Krong Pinang sub-district, Krong Pinang district, Yala province. Users were instructed to test the application by recording financial data based on their group's actual activities. Subsequently, data were collected using the application usage performance and user satisfaction evaluation forms. The application's implementation was then expanded to 9 other Women's Development Groups in Yala province, bringing the total to 90 participants.

For quantitative research, data were analyzed using basic descriptive statistics, including mean ($\bar{x}$) and standard deviation (S.D.). For qualitative research, content analysis was employed to categorize data into themes/issues according to the research objectives. Descriptive statistics were used for quantitative data because the research aimed to evaluate the application's usage performance and user satisfaction across different development stages, rather than to compare causal differences between experimental and expanded groups.

Research Result

PAY SURE Application Development Results

The development of the PAY SURE application revealed that it primarily comprises four main functions: 1) investment recording, 2) expense recording, 3) income recording, and 4) financial reporting (as shown in Figures 2-5).

1) Investment Recording Function: Used for recording assets or project investments.



Figure 2 Screenshots of the Investment Recording Function

2) Expense Recording Function: Used for recording project expenses.



Figure 3 Screenshots of the Expense Recording Function

3) Income Recording Function: Used for recording project income.

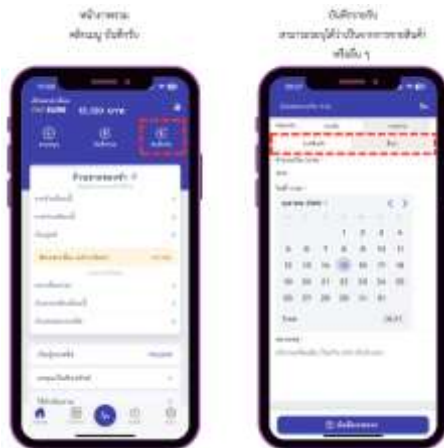


Figure 4 Screenshots of the Income Recording Function

4) Financial Reporting Function: Used for viewing integrated financial reports, including or excluding asset depreciation.



Figure 5 Screenshots of the Financial Reporting Function

Evaluation of Performance and User Satisfaction with PAY SURE by the Experimental Group

The experimental group's evaluation of the PAY SURE application's performance and user satisfaction showed an overall mean score in the very good range (Tables 1 and 2). These results reflect user evaluations from real-world usage during the testing phase. Quantitative findings are presented as mean and standard deviation to support further refinement and development of the application.

In-depth Interview Results with the Experimental Group after Using the PAY SURE Application

Results from post-usage in-depth interviews with the experimental group were analyzed using qualitative content analysis. The researchers monitored data saturation during the interviews by continuously reviewing transcribed notes and summarizing key points. Data collection ceased once recurring themes emerged, and no new information aligned with the research objectives was found. Data were then categorized by research objective to reflect user experiences, problems, and suggestions.

Issue 1: User Experience and Ease of Use of the Application: Interviews revealed that most participants had positive experiences using the PAY SURE application. They found the application's interface intuitive, the menus straightforward, and appropriate for users in the community with limited technological backgrounds. The User Interface (UI) was designed to be simple, enabling users to learn independently without prior accounting knowledge. One participant stated, "Initially, I thought it would be difficult to use, but once I tried it, the menus were very easy to understand. I remembered how to use it after just one try." This highlights that user experience-centric design (UX) reduces barriers to access to technology and promotes efficient acceptance among the target group.

Issue 2: Benefits of the Application for Bookkeeping and Debt Tracking: Most participants found the PAY SURE application highly beneficial for managing income and expenses and tracking debt. It helped them gain a clearer understanding of their financial status, allowing for more systematic tracking of balances, spending planning, and debt repayment strategies. One participant commented, "Before, I would just pay off my debts, but if I wanted to know the outstanding balance, I had to open a notebook. With this app, I can immediately see how much debt I have and how much is left." The interview results reflect that using technology to manage financial data enhances accuracy, reduces errors, and instills financial discipline in users' daily lives.

Issue 3: Obstacles and Limitations in Usage: However, some participants reported initial obstacles to use, particularly those with limited technological skills. They required an adjustment period. One participant mentioned, "Initially, I was a bit confused because I am not very familiar with using a phone, but with help from group friends, I started to get the hang of it." This suggests that such obstacles are more related to individual digital literacy than to flaws in system design and can be mitigated through continuous use and support from group members.

Issue 4: Suggestions for Application Improvement: Some participants suggested improving the application to better suit community users, particularly by adding explanations or step-by-step instructions. One participant noted, "If there were a few more example pictures or explanations, it would help new users understand faster." These suggestions reflect the need to develop the application to be adaptive to users with varying levels of digital literacy.

PAY SURE Application Expansion Results

Following the development and testing of the PAY SURE application with the experimental group, the researchers extended its use to other women's development groups in Yala province. The objective of this expansion was to demonstrate the application's suitability when deployed in groups with similar contexts and to assess user performance and satisfaction on a broader scale. The evaluation revealed that user performance and satisfaction with the PAY SURE application remained at a very good level (Tables 3 and 4).

Table 1 Evaluation of PAY SURE Application Performance by the Experimental Group

Evaluation Aspect	Mean	S.D.	Rating
1) Functional Suitability	4.57	0.47	Very Good
2) Performance Efficiency	4.63	0.46	Very Good
3) Usability	4.59	0.48	Very Good
4) Reliability	4.55	0.52	Very Good
5) Security	4.54	0.50	Very Good
Overall	4.58	0.49	Very Good

Table 2 Evaluation of User Satisfaction with PAY SURE by the Experimental Group

Evaluation Aspect	Mean	S.D.	Rating
1) Perceived Ease of Use (PEOU)	4.60	0.48	Very Good
2) Perceived Usefulness (PU)	4.66	0.45	Very Good
3) System Usability Scale (SUS)	4.55	0.51	Very Good
4) Overall Satisfaction	4.64	0.47	Very Good
Overall	4.61	0.48	Very Good

Table 3 Evaluation of PAY SURE Application Performance by the Expanded Group

Evaluation Aspect	Mean	S.D.	Rating
1) Functional Suitability	4.64	0.47	Very Good
2) Performance Efficiency	4.66	0.46	Very Good
3) Usability	4.67	0.45	Very Good
4) Reliability	4.61	0.49	Very Good
5) Security	4.59	0.50	Very Good
Overall	4.63	0.47	Very Good

Table 4 Evaluation of User Satisfaction with PAY SURE by the Expanded Group

Evaluation Aspect	Mean	S.D.	Rating
1) Perceived Ease of Use (PEOU)	4.63	0.45	Very Good
2) Perceived Usefulness (PU)	4.67	0.44	Very Good
3) System Usability Scale (SUS)	4.57	0.47	Very Good
4) Overall Satisfaction	4.60	0.46	Very Good
Overall	4.62	0.46	Very Good

Conclusion and Discussion

This research aimed to develop a mobile digital tool integrating accounting principles and financial analysis to support the assessment of debt repayment capacity for women's development groups in Yala province, as well as to evaluate the quality of the PAY SURE application in terms of its operational performance and user satisfaction within the actual community usage context. This study employed a Research and Development (R&D) approach, using a sequential mixed-methods design (the sequential use of qualitative and quantitative data) to support the application's development and evaluation. The results of developing the mobile digital tool (PAY SURE application) demonstrated that the ADDIE model-guided development process facilitated a structured approach to design and improvement. This ranged from analyzing the needs of women's groups in the community and designing functions consistent with real-world contexts to developing and testing prototypes, and to continuous implementation and evaluation. This process allowed for system refinement based on actual user feedback during the experimental phase before wider dissemination, reflecting the concept of iterative development informed by real-world testing and a user-centric approach, consistent with the suggestions of López et al. (2023) and Samsudin et al. (2021), who emphasize the importance of continuous testing, refinement, and user-centered design in digital system development.

From a design perspective, the PAY SURE application was developed under the User-Centered Design (UCD) concept, emphasizing a simple User Interface (UI), clear menu structures, and easy-to-understand language to suit users with limited digital literacy. Evaluation results and interview findings indicated that users could learn to use the application independently and perceived the system as not hindering the recording of financial data. This is consistent with the work of Farasalsabila et al. (2023) and Dananjaya et al. (2024), who showed that applying

UCD enhances ease of use and improves user experience, thereby increasing application satisfaction. However, this study only reflects users' perceived ease and suitability of use within their own context.

Regarding the evaluation of the PAY SURE application's operational performance against ISO/IEC 25010 standards, the overall mean score was very good. This indicates that the application is functionally suitable, stable, and secure for the target group's actual usage. These findings align with Hidellarachchi et al. (2023), who stated that systematic software design and testing enhance operational quality and reduce usage errors. Furthermore, evaluation under the ISO/IEC 25010 framework encompasses multi-dimensional software quality attributes, such as functional suitability, performance efficiency, usability, reliability, and security, which are crucial to user trust. This is consistent with Souza-Pereira et al. (2022), who indicated that software quality assessment using the ISO/IEC 25010 framework and real-world usage measurement can reflect user satisfaction and confidence in the system, and can demonstrate that the software meets user needs and expectations, which are vital factors for acceptance and practical implementation.

Regarding user satisfaction with the PAY SURE application, based on evaluations using the Technology Acceptance Model (TAM) and the System Usability Scale (SUS), overall user satisfaction, Perceived Usefulness (PU), and Perceived Ease of Use (PEOU) were at a very good level. This reflects that users perceive the application as genuinely useful for financial management and usable without prior accounting knowledge, consistent with Pislai-ngam et al. (2024), who emphasized that ease of use is a critical factor for technology acceptance among community-level users. Furthermore, a closer look within the TAM framework revealed that the simple User Interface (UI) design, uncluttered menu arrangement, and use of easily understandable language in the PAY SURE application played a significant role in enhancing Perceived Ease of Use (PEOU), which in turn influenced Perceived Usefulness (PU) for recording and tracking financial status. This aligns with Alam & Saputro (2022), who studied UI design within the TAM framework and found that elements of consistency and an appropriate screen layout led users of all ages to perceive the app as easy to use. This perception significantly impacted technology acceptance and usage intention. In the context of women's development groups with limited digital literacy, a user-friendly UI design is even more crucial to reducing barriers and supporting daily use. Moreover, when considering user satisfaction using the System Usability Scale (SUS), which measures users' overall perceived usability of a system or application in terms of ease, clarity, and confidence in use (Brooke, 1996), the PAY SURE application received very good scores. This indicates that users perceive the app as easy to use and not burdensome to learn, even within groups with limited technical backgrounds. These findings are consistent with Aditiya et al. (2025), who highlighted that user-centered UI/UX design can enhance usability and user satisfaction. In this research, the simplicity of the menu structure, the use of easy-to-understand language, and the alignment of the workflow with the actual financial activities of women's development groups enhanced perceived system usability. This aligns with the in-depth interview results, in which users reported that the application was easy to understand and use. However, SUS scores at a "very good" level should be interpreted as an indicator of users' perceived usability rather than conclusive evidence of the system's effectiveness on long-term behavioral or financial outcomes. Furthermore, within Ajzen's (1991) Theory of Planned Behavior (TPB) framework, the design characteristics of the PAY SURE application can be linked to key TPB components. The perceived ease of use and usefulness contributed to fostering positive attitudes towards bookkeeping and debt tracking. The usage context within women's development groups and community-based collaborative learning reinforced subjective norms, suggesting that such financial practices are expected. The system's simplicity and high SUS scores further enhanced users' perceived behavioral control, leading to a strong intention to continue using the

application for practical financial management. Herispon et al. (2022) found that these three factors significantly predicted household debt intention and behavior in Indonesia, demonstrating TPB's effectiveness in explaining individuals' financial intentions and behaviors. However, this research reflects results at the level of initial perception and intention, and cannot yet confirm long-term changes in actual financial behavior.

In terms of bookkeeping, the PAY SURE application's functions, focusing on recording income and expenses and tracking debt obligations, can be linked to the Personal Financial Planning Theory, which emphasizes the importance of systematically assessing one's financial status before making financial decisions (Black et al., 2002). Although the application does not yet cover comprehensive financial planning, the research results show that users gained a clearer overview of their income, expenses, and debts, which is a fundamental step in the financial planning process. The findings align with Wijana et al. (2021), who found that financial planning applications help users systematically assess their financial status, a crucial foundation for personal financial planning. This resonates with the role of PAY SURE's income/expense recording and debt repayment functions, indicating that digital tools can support financial discipline and awareness among low-income groups. Regarding the expansion of the PAY SURE application, the evaluation of its performance and user satisfaction within the expanded group was also very good, reflecting the application's suitability for deployment in women's development groups with similar community contexts. This outcome resulted from a continuous development process in which the researchers used evaluation data and suggestions from the experimental group to refine the application's functions, display, and structure before its wider implementation, ensuring better alignment with user needs and context. Furthermore, at a broader Asian and Southeast Asian level, this research reflects common issues found among women in various countries, such as limited access to formal financial services and digital literacy gaps, which are significant barriers to the adoption and use of digital financial tools in daily life (Aziz et al., 2022; Esquivias et al., 2021). The context of women's development groups in Yala province is characterized by unique cultural and linguistic aspects, as well as strong community networks that foster collaborative learning and experience sharing in using the application. This differs from some areas in Southeast or South Asia, where users often face limitations in group cohesion and social support, necessitating external support mechanisms for technology adoption. This comparison indicates that the design of digital tools should consider both regional commonalities and specific local contexts simultaneously.

In conclusion, the development of the PAY SURE application, following the Research and Development approach and the ADDIE model, coupled with user-centered design, resulted in a digital tool that users perceived as suitable for their real-world usage context. This suitability is reflected in both the system's quality, as measured by the ISO/IEC 25010 standards, and user satisfaction, as assessed by the TAM and SUS frameworks. The research findings demonstrate that the simplicity of the user interface and functions aligned with financial routines played a crucial role in technology acceptance, enhancing the intention to use, as predicted by the TPB framework, and fostering basic financial awareness consistent with personal financial planning concepts. However, the obtained results reflect user perceptions and experiences within the community context, rather than confirming a causal effect of the application on long-term financial outcomes. Given the model's transferability, the PAY SURE application development approach includes key elements applicable to other community development projects in Asian countries. These include: (1) an iterative development process based on the ADDIE model, using real user data; (2) UI design that reduces the learning curve and aligns with users' actual financial routines; (3) using perceived evaluation results from TAM and SUS as feedback to refine the system before expansion; and (4) integrating usage through women's groups or networks. This approach indicates that designing user-friendly and grassroots-centered digital

tools is a critical success factor for projects aimed at empowering women entrepreneurs in developing countries. From the research findings, policy recommendations can be synthesized for government agencies, NGOs, and regional development organizations in Asia: (1) promoting digital literacy and financial knowledge development programs tailored for grassroots women's groups; (2) supporting the development of digital financial tools that use simple language and align with local contexts; (3) linking technology usage with community networks or occupational groups to reinforce continuous use; and (4) investing in digital infrastructure to reduce access gaps. A significant limitation of this study is that it is a Research and Development project conducted in a single geographical context, using a specific sample of women's development groups in Yala province. The results are presented descriptively to reflect user perceptions and experiences, rather than to establish causal effects or to compare differences between groups. Therefore, future research should consider: (1) long-term follow-up to assess the continuity of bookkeeping and debt management behaviors according to the TPB framework; (2) expanding the study area to other provinces or countries in Asia to evaluate the model's generalizability and suitability; and (3) employing inferential statistics or comparative designs in appropriate contexts to strengthen empirical evidence.

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