

Evaluation of Mobile Applications for Personal Finance Management Using the MARS Scale

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Abstract

This study evaluates personal finance management apps using the Mobile App Rating Scale. Four apps were analyzed: Wallet and Money Manager from App Store, Money Tracker and My Budget Book Pro from Google Play. Each was evaluated for engagement, functionality, aesthetics, information quality, subjective evaluation and specific features. Results showed the highest ratings for visual aspects and lower scores for functionality. Money Manager received the highest overall rating, particularly in functionality and subjective evaluation. In contrast, My Budget Book Pro achieved the weakest results, especially in information quality and application specificity. The study highlights areas for improvement and serves as a guide for consumers in selecting solutions for financial management.

Keywords: mobile apps; Mobile App Rating Scale; financial management

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1. Introduction

The mobile app market has grown exponentially in recent years. Personal finance apps are becoming increasingly popular, offering users greater control over their budgets by allowing them to track and plan their expenses. People spend more time on their phones, and everyday activities have become increasingly intertwined with mobile devices. This has led to a significant increase in attention to usability, performance, and overall user experience. Recent research shows that the sheer number of apps available is driving demand for evaluation methods that go beyond subjective app store ratings or user reviews [1, 2].

Traditional user reviews often fail to reflect the actual quality, safety, or effectiveness of an app. To address this, various comprehensive mobile app evaluation tools have been developed. One of the most popular is the Mobile App Rating Scale (MARS), which provides a structured approach to app evaluation [2–4]. MARS has become one of the most widely used tools due to its high levels of internal consistency and interrater reliability [4, 5], which provides a solid foundation for further research.

The aim of this paper is to explore the quality of personal finance applications using a structured evaluation approach based on the MARS framework and to identify key areas for improvement. The main categories of the scale are engagement, functionality, aesthetics, and information quality. They determine the quality of apps from both a technical and user experience perspective [2, 3]. The study addresses the following hypotheses:

- **H1:** There is a positive correlation between the overall application quality scores obtained during the study using the MARS scale and the average ratings of applications in the app store.
- **H2:** The average scores for the ‘Engagement’ dimension of the MARS scale are lower than the average scores for the ‘Functionality’ dimension for personal finance management apps.

Given that the application of the MARS model in the field of personal finance is a relatively new development, this study is exploratory and descriptive in nature. It is designed as a preliminary study focusing on the analysis of a selected sample, with the aim of identifying initial trends and assessing the applicability of the method in this new field.

2. Literature review

Since its inception, the MARS scale has been widely adopted across various industries and has undergone several adaptations for specific areas. Although the MARS was originally developed as a tool for assessing health-related applications [2], its flexible structure has allowed researchers to modify and expand it for use in a variety of fields.

The MARS method has been used in a wide range of mobile app research. The predominant application area is health apps. Studies have been conducted on pain management apps, including back pain and chronic pain [6, 7] also weight management and diet [8, 9]. Apps related to chronic diseases such as human immunodeficiency virus/acquired immunodeficiency syndrome, epilepsy and inflammatory bowel disease [10–12] and more specialized health areas, such as apps for patients with polycystic ovary syndrome and dentistry [11, 13], have also been studied using the MARS method. Considering the scope of research in which MARS is used, it is a repeatable method recognized in many fields.

Studies based on the MARS scale use a similar methodological approach. Authors typically search mobile app stores and then assess the quality of selected tools using MARS with the help of experts [6, 7, 13]. Some studies also show discrepancies between user ratings in app stores and expert ratings obtained using the MARS scale [14, 15]. These ratings show that MARS is a robust tool for assessing app quality, but it can be enriched with additional analysis methods. Analyzing app functionality

or classifying behavior change techniques is an additional method of assessing the MARS scale, which has been used to consider app quality from a broader perspective [8, 11]. Only a few studies address the actual health effects and long-term use of apps [12, 16].

Studies based on the MARS scale indicate that the results are relatively objective. Aesthetics is one of the highest-rated categories in many studies [6-8, 13] thanks to the clarity and appearance of the interface. Engagement, on the other hand, usually receives average ratings [9, 15] due to the limited use of interaction and personalization mechanisms. In many studies, information quality emerges as the most consistent pattern in MARS-based analyses. Many studies [6, 13, 16, 17] confirm that this is one of the weakest components of the evaluated applications, one of the reasons being the lack of references to the reliability of scientific sources. Functionality, on the other hand, depends largely on the type of application. In most studies, it is rated very highly, especially in applications that perform clearly defined tasks, but its level varies significantly depending on the intended purpose of the application [6, 8, 12, 18].

The Mars scale has proven to be an effective tool for assessing the quality of various mobile applications. However, its application in the area of personal financial management is virtually nonexistent.

Finance apps have gained significant popularity between 2018 and 2025 [19]. Despite their rapid spread, research into the quality of these apps remains significantly less prevalent than for health-related apps. Most studies conducted on mobile applications in the finance category focus on usability and task performance, often relying on small user tests for evaluation [20]. A large number of studies also examine the behaviour of users who are given access to applications for comparing expenses, debt management applications [21, 22]. Some investigate the willingness and engagement of users of such applications [23], concluding that gamification significantly influences long-term use [24]. It has also been noted that during the COVID-19 pandemic, problems with remote customer service were identified, "such as the need for better adaptation to the requirements of making current settlements and payments, the inability to scan documents, and the lack of advice and ongoing contact with a consultant" [25].

Despite the fact that, in general, researchers pay attention to financial applications, none of them use a comprehensive quality assessment system. The only exception in the field of financial applications is the Fin-MARS scale, which is an adaptation of MARS. It has been thoroughly developed and validated to ensure reliable quality assessment when analyzing this type of application [26]. This shows that the MARS scale can also be applied to other areas.

The literature shows that there is a certain gap in research related to the comprehensive assessment of financial applications using an objective scale, which is MARS. The only adaptation of FinMARS can already be considered outdated.

3. Methodology

3.1. Research Objects

The process of selecting mobile apps for evaluation using the MARS scale was guided by established criteria. Four products were selected for analysis, which, at the time of the study, ranked highly in the "Finance" categories of the relevant app stores.

To ensure that the research findings were not limited to a single operating system, the sample was evenly distributed across the two most popular mobile platforms.

This distinction made it possible to assess the quality of Personal Finance Management (PFM) applications across different ecosystems.

The following are the four criteria used to select the applications:

- Availability: the selected apps must be free to download.
- Localisation: full support for the Polish language must be provided to ensure that all respondents can understand the interface correctly.
- High rating: apps must have a relatively high rating in the relevant app stores.
- Popularity: apps must be selected from the list of most downloaded apps, which confirms their demand.

The selected apps are presented in Table 1.

Table 1: Selected applications

Application	Platform	Application version
Money Manager, Expense Tracker	iOS	1.9.4
Wallet: Budget & Money Manager	iOS	5.2
My Budget Book Pro	Android	2.10.1
Money Tracker	Android	1.1.131

For the purpose of comparative analysis, the average user ratings from the Apple App Store and Google Play Store, as shown in Table 2, were recorded. This data was collected at the same time to ensure that the figures were consistent.

Table 2: User ratings of the applications in the App Store and Google Play

Application	Platform	Store Rating	Number of Reviews
Money Manager, Expense Tracker	iOS	4.90	6.8k
Wallet: Budget & Money Manager	iOS	4.40	1.1k
My Budget Book Pro	Android	4.90	1.9k
Money Tracker	Android	4.90	276k

3.2. Evaluation group and procedure

A research group of 10 people was formed to conduct the experiment. The participants are master's students from faculties related to computer science, aged between 22

and 24. This selection was based on the fact that students of IT-related subjects have a better understanding of how a user-friendly and intuitive interface should be organised.

The testing was carried out on mobile devices provided by us. This ensured a level playing field and eliminated the influence of differences in device performance on the final scores.

To ensure that participants did not simply browse the interface aimlessly, but instead simulated everyday use of the applications, interaction scenarios were developed that could be carried out in each of the four applications under examination. This allowed for a more objective evaluation of the products. The scenarios comprised eight operations:

1. Create your own expense category.
2. Create an account in a different currency.
3. Create a new account called "Research" in zlotys (PLN).
4. Add a new income entry of 250.25 PLN to the "Research" account.
5. Add a new expense entry of 101.99 PLN to the "Research" account.
6. Check the expense charts for the current month.
7. Check the current balance in the calendar.
8. Edit the amount of the last expense.

After completing the scenarios, the respondent filled in the MARS questionnaire for the given application. The procedure was repeated for each application.

3.3. The MARS scale

The Mobile App Rating Scale was used to assess the quality of the selected apps. It is a questionnaire consisting of 23 questions, divided into five categories:

1. Engagement: assesses how much the app encourages the user to use it.
2. Functionality: assesses how user-friendly, stable and effective the app works.
3. Aesthetics: assesses the visual aspect of the app.
4. Information: assesses how reliable, useful and clear the information provided is.
5. Application subjective quality assesses how much the user liked or disliked the application overall.

Each question is rated by the respondent on a 5-point Likert scale (from 1 – "Strongly disagree" to 5 – "Strongly agree"). Some questions in the "Information" section may be marked as "not applicable" if no data is available. An arithmetic mean is calculated for each category. The final application quality score is calculated as the arithmetic mean of the scores for the first four categories, namely: "Engagement", "Functionality", "Aesthetics" and "Information". The "Application subjective quality" is analysed separately.

4. Results

Table 3 presents the average results for each MARS subscale for the analyzed applications.

Table 3: Mean (standard deviation) application scores for individual MARS subscales

Mars Dimension	Money Manager	Wallet	Money Tracker	My Budget Book Pro
Engagement (SD)	3.62 (0.76)	3.34 (0.77)	3.48 (0.59)	3.38 (1.21)
Functionality (SD)	4.13 (0.80)	3.50 (0.85)	3.95 (0.66)	3.73 (1.14)
Aesthetics (SD)	3.80 (0.90)	4.03 (0.76)	4.03 (0.62)	3.53 (1.07)
Information quality (SD)	3.90 (0.70)	3.52 (0.74)	3.87 (0.83)	3.37 (1.20)
Subjective quality (SD)	2.75 (1.15)	2.70 (1.25)	2.50 (0.69)	2.60 (1.26)
Application specificity (SD)	3.43 (1.10)	3.38 (1.33)	3.62 (1.12)	3.10 (1.57)

The MARS metrics revealed key qualitative differences among the apps studied. In terms of user engagement, the scores were similar across the apps. The lowest score was recorded for the Wallet app (3.34), while the highest was for Money Manager (3.62).

The functionality dimension showed greater variation. The Money Manager app received the highest score (4.13). In contrast, the Wallet app had the lowest score among those tested (3.50).

The aesthetics dimension turned out to be one of the better-rated areas. The Money Tracker and Wallet apps achieved identical and, at the same time, the highest scores (4.03). A noticeable difference was evident in the case of the My Budget Book Pro app (3.53).

In terms of information quality, the results remained at a moderate level, with the Money Manager app achieving the highest score in this category (3.90). In contrast, My Budget Book Pro received the lowest score (3.37).

The lowest-rated subscale of the Mars scale among the apps surveyed was subjective quality. The results ranged from 2.50 to 2.75.

Regarding the app specification dimension showed moderate variation. Money Tracker received the highest score (3.62), while My Budget Book Pro received the lowest (3.10).

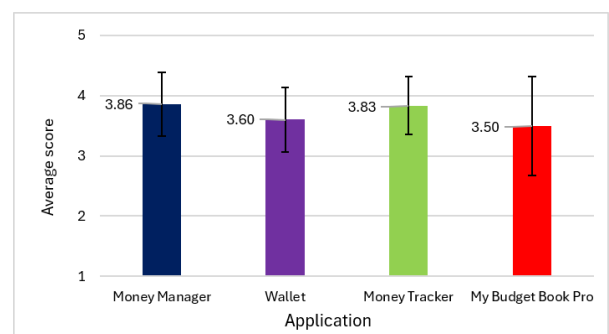


Figure 1: Overall average scores for each application

Figure 1 presents the overall average scores of the applications evaluated on the MARS scale. The overall

MARS scale results indicate that the highest-rated app among those surveyed was Money Manager (3.86), with Money Tracker achieving a similar score (3.83). The Wallet app received a slightly lower rating (3.60), while the lowest overall score was recorded for My Budget Book Pro (3.50). The differences between the apps are minor and fall within a range of 0.36 points, indicating a generally similar level of quality among the surveyed tools. The analysis included apps available on the Android platform and the iOS.

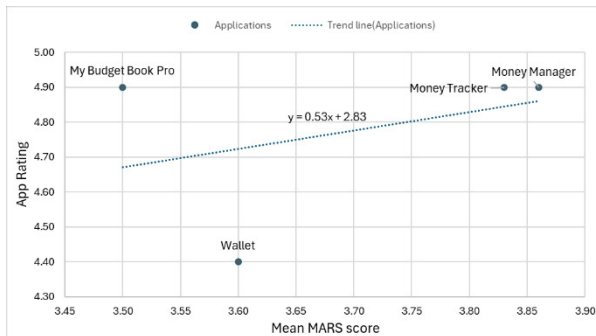


Figure 2: Relationship between MARS mean score and app store ratings

Figure 2 shows the relationship between average MARS scores and ratings in app stores. The plot indicates an upward trend line, suggesting a preliminary positive correlation between these variables. However, the results should be interpreted with caution due to the limited variability of app store ratings and the small sample size ($n = 4$).

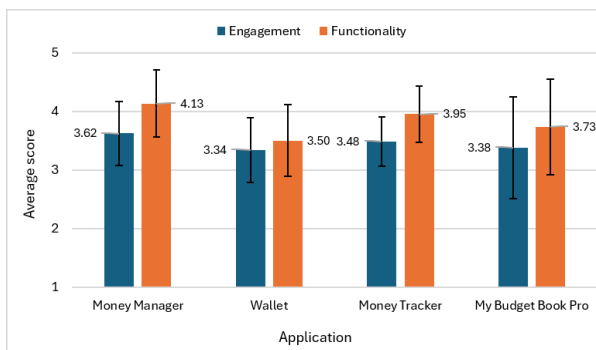


Figure 3: Comparison of MARS engagement and functionality scores

Figure 3 illustrates a comparison of the engagement and functionality dimensions of the MARS scale. The largest difference between these dimensions was observed for the Money Manager app (0.51), while the smallest difference was recorded for the Wallet app (0.16). Across all applications, scores for the engagement dimension were consistently lower than those for the functionality dimension.

5. Discussion

The research findings indicate that the personal finance management apps analyzed demonstrate a similar level of quality. The results analyzed on the MARS scale suggest comparable performance and usability of the apps for users.

In terms of engagement, the range of research results indicates a moderate level of user interaction and limited personalization options across all tools.

The functionality dimension scored higher across all apps, suggesting that developers prioritize technical performance and reliability. This may indicate that financial apps are designed primarily with performance and the fulfillment of user tasks in mind.

Consistently lower engagement scores compared to functionality scores may stem from specific design features of the applications. A focus on mechanical data entry via simple buttons or forms ensures high efficiency in carrying out basic tasks, but this leads to a decline in user engagement due to the monotonous nature of data entry. Many applications lack a 'digital envelope' system, i.e. the division of a budget into independent goals. This results in the absence of a psychological process of mental accounting and leads to negligible or zero interaction with the application. Another significant design flaw is the unintuitive categorisation of account types. Different account types are not visually distinguished, even though they correctly track financial resources [19].

The results regarding aesthetics suggest that the visual design is generally well-refined, while the Money Tracker app may not fully align with its function and purpose.

Regarding information quality, the results indicate a moderate level of reliability and accuracy of the presented information, with some variations among the apps. This indicates that there is still room for improvement in terms of content quality.

The lowest scores recorded in the area of subjective quality indicate a limited overall level of user satisfaction, which may suggest that the apps do not fully meet their expectations.

With regard to the app-specific dimension, the results indicate that these tools vary in their effectiveness in promoting financial literacy.

The results confirm hypothesis H2, as the engagement score was consistently lower than the functionality score across all analyzed apps. This pattern suggests a discrepancy between user engagement and technical performance.

Hypothesis H1, however, was only partially confirmed. Although the observed trend suggests a positive relationship between MARS scale scores and app store ratings, this relationship should be interpreted with caution. The robustness of the correlation analysis is limited due to the small sample size ($n = 4$) and the limited variability of app store ratings. This may also be influenced by the fact that app store ratings are calculated using dynamic algorithms reflecting the current state of the app, rather than as an average of all ratings for a given app.

The study has several limitations regarding hypothesis H1. Despite these limitations, the study provides important insights into the strengths and weaknesses of personal finance management apps. In particular, the results indicate a need to place greater emphasis on improving user engagement and comfort despite well-developed functionality. Future research should include a larger

sample of applications to enable more robust statistical analysis.

6. Limitations and Future Studies

While this study provides valuable preliminary findings, a number of limitations should be acknowledged. Firstly, the conclusions relating to the testing of hypotheses are strictly limited by the small sample size ($n = 4$). Consequently, the results concerning the confirmation of hypotheses should be interpreted with extreme caution, as the limited number of applications does not allow for a reliable statistical test.

Secondly, the comparison of operating systems also has its limitations. The study did not evaluate applications that were exactly the same on both platforms. Instead, different applications were selected for Android and iOS. Consequently, the observed lack of significant differences between the platforms may have been influenced by the characteristics of the specific applications, rather than by the operating systems themselves.

Furthermore, the assessment was carried out on a very homogeneous sample of IT students, which introduces a potential sampling bias. This choice of participants can be justified by the fact that IT students have a better understanding of the technical aspects and act as the primary target users who actively use mobile tools to manage their personal finances. However, their advanced technical knowledge means that their expectations may differ significantly from those of the general public, which could potentially skew the findings.

To address these limitations, future studies building on this analysis should examine a broader and more varied sample of financial apps. Increasing the number of apps assessed will enable a more reliable statistical analysis of the observed trends, particularly regarding the correlation between app store ratings and MARS scale scores. Additionally, future research should cross-evaluate the same applications across both iOS and Android platforms to provide a direct and unbiased comparison between operating systems. Furthermore, future studies should involve a more varied and larger group of participants to better reflect different levels of financial literacy and user behaviour patterns.

7. Conclusions

Based on the data obtained, it can be concluded that all the apps under review were rated above average. This may indicate that the PFM app market is fairly well-developed and that there is competition within it. The Money Manager app (3.86) topped the overall rankings.

A certain trend was observed, suggesting that scores for the "Functionality" category are generally higher than those for the "Engagement". This suggests that developers may be focusing more on developing and improving the app's functional capabilities than on tools designed to boost engagement and user retention. However, given the limited sample size and the small number of apps analysed, these conclusions regarding the validation of the hypotheses should be interpreted with extreme caution and regarded as strictly preliminary rather than definitive.

The study did not reveal any significant differences between apps on different operating systems, such as Android and iOS. The quality of apps depends more on the developers than on the operating system. However, these findings are also limited as different applications were evaluated on each platform. Furthermore, the MARS methodology enabled a more in-depth analysis of the products and a more effective identification of their weaknesses.

It is also important to note the difference between objective ratings, which are above average, and "Subjective Quality", which is significantly lower. From this, we can conclude that even if an app is well-designed from a technical point of view, this does not guarantee that users will use it regularly or recommend it to others.

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