

Digital Cash Flow Management for MSMEs: Development and Assessment of a Mobile Financial Monitoring Tool in Cebu City

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Abstract

This study developed and assessed a mobile cash flow management tool for micro, small, and medium enterprises (MSMEs) in Barangay Tisa, Cebu City. The study was anchored on the Unified Theory of Acceptance and Use of Technology (UTAUT) and Garvin's Dimensions of Quality. It used a quantitative descriptive research design, with an adapted questionnaire as the main instrument. The respondents consisted of 30 MSM entrepreneurs, 30 selected BSBA students, 10 cash flow management experts, and 10 information technology experts, for a total of 80 respondents. Data were analyzed using percentage, weighted mean, and one-way ANOVA. Results showed that the tool, "Budyet ta Bai," was developed to support cash inflow and outflow recording, expense tracking, budgeting, reporting, transaction categorization, and financial monitoring through smartphones. The tool was rated to a very great extent in performance, accuracy, reliability, serviceability, and portability. It was also rated highly acceptable in terms of performance expectancy, effort expectancy, and social influence. Identified adoption barriers included technological limitations, resistance to change, trust and security concerns, device compatibility, cost, affordability, and limited financial literacy. The study concluded that the mobile tool can help MSMEs and students improve cash monitoring, financial tracking, and decision-making. It recommended adoption of the tool and continuous monitoring for further functional improvement. The study aligns with SDG 4, SDG 8, SDG 9, SDG 11, SDG 16, and SDG 17 by supporting financial education, MSME growth, innovation, local enterprise resilience, responsible governance, and collaboration. Its sustainability impact is mainly socio-economic, technological, educational, institutional, and community-based because it strengthens MSME cash management and promotes practical digital financial practices.

Keywords: Cash Flow Management, Digitalization, Financial Monitoring, Mobile Tool, MSMEs, Sustainability, Technology Adoption

1. Introduction

This study focuses on the development and acceptability of a mobile cash flow management tool for micro, small, and medium enterprises (MSMEs) in Barangay Tisa, Cebu City. Cash flow management is central to business survival because it supports the monitoring, analysis, and optimization of cash inflows and outflows, including cash collection, disbursement, budgeting, and preparation for financial uncertainty (Soet et al., 2018). Despite increasing digitalization, existing cash management applications primarily target large corporations or personal finance users, creating a gap for MSME-specific solutions. (Skare et al., 2023). This study therefore proposes a mobile cash management tool that supports MSMEs in monitoring cash provision and usage, controlling recurring expenses, reducing problems related to excess or insufficient cash balances, and improving cash performance.

Cash flow management ensures cash availability for obligations including payments, payroll, operations, and business growth. It is a mechanism for improving financial performance because it involves cash collection and cash disbursement (Soet et al., 2018). For MSMEs, effective cash flow management is especially important because financial constraints, limited awareness, and technological limitations may affect their ability to adopt advanced tools. The study aims to explore and develop cash flow management practices among MSMEs using innovative device instruments such as smartphones, notebooks, and tablets (Raut et al., 2019). It also seeks to determine whether an innovated cash flow management mobile tool can assist MSMEs in Barangay Tisa, Cebu City, particularly in cash spending, disbursement, budgeting, and preparation for uncertainty.

The literature emphasizes that cash management is linked to profitability, liquidity, financial performance, and business survival. Ouma (2021) identified liquidity management, receivable collection, and cash cycle management as key variables affecting net profit margin, although the study was limited to SMEs in Kenya and faced difficulty in obtaining financial information. Pandey (2020) also emphasized that sound cash management practices are essential for profitability among small businesses, while Nso (2018) showed a positive relationship between cash management and profitability in

microfinance institutions. Chintha & Prasad (2021) linked cash management with liquidity, financial performance, bankruptcy, and working capital using cash and profitability ratios. Bari et al. (2019) examined the effects of cash conversion cycle, inventory management, receivables, payables, and financial statements on food and beverage retailers, although respondent suspicion and limited questionnaire responses affected the study. Related studies also show that innovation, digitalization, and technology adoption influence SME performance. Hazem et al. (2020) explained the relationship between innovation capabilities and SMEs' financial and operational performance, while Abdulrab et al. (2022) examined the joint effects of entrepreneurial orientation, market orientation, and technology orientation on SME performance. Adam et al. (2021) found that innovation practices adopted by SMEs during COVID-19 had positive effects on performance and survival, with external support strengthening survival outcomes. Donkor et al. (2018) showed that innovative capability and strategic goals positively influence SME financial performance. Papadopoulos et al. (2020) highlighted the role of digital technologies in improving SME productivity, performance, and business continuity, especially during extreme events such as COVID-19. Guo et al. (2020) similarly showed that SME digitalization improves crisis response and performance, while Winarsih et al. (2021) emphasized that technology transformation supports SME sustainability but requires digital skills and stakeholder support. Financial capability, access to finance, and management practices also appear as major themes. Prijadi et al. (2022) discussed how unbanked MSEs transition to bankable enterprises, especially during COVID-19. Omondi et al. (2018) examined access to credit, savings mobilization, financial skills training, and role modeling as factors influencing SME performance. Mussah et al. (2018) assessed working capital management, capital structure management, accounting information and financial reporting, and capital budgeting practices among SMEs. Bakhtiari et al. (2020) reviewed how financial constraints affect SME growth, employment, productivity, and wages. Esiebugie et al. (2018) found that many SME owners rely on personal funds and apply little or no budgeting, planning, debt management, saving, record keeping, and retirement planning.

The literature further connects sustainability, corporate responsibility, and financial performance. Bartolacci et al. (2020) mapped research themes on innovation, entrepreneurship, corporate social responsibility, green management, and environmental issues in SMEs. Tien (2020) examined the relationship between corporate social responsibility, corporate environmental sustainability, and corporate financial performance. Cantele et al. (2018) tested a model in which sustainability practices affect financial performance through strategic drivers, while Centobelli et al. (2019) studied the relationships among leanness, process innovation, product innovation, environmental performance, and financial performance. Gherghina et al. (2020) found that investments and innovation positively affect territorial economic growth among Romanian active enterprises, especially SMEs. Bontis et al. (2018) linked intellectual capital with economic performance in social cooperative enterprises, while Bontis et al. (2018) also noted limitations related to sample size, sector coverage, and the lack of shared models for assessing intellectual capital effects on financial and social performance. Sardo et al. (2018) found that human capital, structural capital, and relational capital positively affect financial performance in small and medium-sized hotels. Frisko-Koan & Eriandani (2022) added that SME understanding of business entity concepts and financial management can improve through continuous community service programs.

Locally, the study is situated in Barangay Tisa, Cebu City, where MSMEs include food, clothing, trading, leasing, and other merchandise businesses. According to Philippine Statistics Authority or PSA Region 7 and Countryside in Figures: Cebu City, Cebu City is a first-class highly urbanized city in Central Visayas with 80 barangays and a population of 922,611, while Barangay Tisa has 37,749 residents. The area includes residents engaged in professional, clerical, craft, trade, and business activities, making it a relevant setting for studying MSME cash flow management. In a related Philippine local enterprise context, Banzon, Santos, and De Leon (2026) found that consumer buying behavior and perceived value influence the market relevance of locally produced vegetables in San Antonio, Nueva Ecija, suggesting that localized business conditions and customer perceptions are important considerations in sustaining small-scale enterprises. Nationally, the study is supported by Philippine policies and standards that promote digital transactions, intellectual property protection, MSME development, technology transfer, and cash flow reporting. Republic Act 8792, or the Electronic Commerce Act of 2000, recognizes electronic documents and electronic signatures and supports secure digital transactions. Republic Act 8293, or the Intellectual Property Code of the Philippines, protects patents, trademarks, copyright, and technology transfer arrangements. Republic Act 6977 (R.A. 6977), as amended by Republic Act 8289 (R.A. 8289), supports the growth and development of micro, small, and medium enterprises through financing, technology access, training, and support structures. Republic Act 10055 (R.A. 10055), or the Philippine Technology Transfer Act of 2009, promotes the utilization and transfer of intellectual property and research outputs for national benefit. Philippine Accounting Standards No. 7 (PAS 7) provides guidance on the statement of cash flows by classifying cash flows into operating, investing, and financing activities. Globally, the reviewed studies show that cash management, digitalization, innovation, sustainability, and financial constraints affect SMEs across different settings, including Kenya, China, Malaysia, Indonesia, Saudi Arabia, Vietnam, Nigeria, Italy, Romania, India, and other contexts. However, many studies were limited by geography, sector, sample size, respondent disclosure, or research design, reinforcing the need for a localized study focused on MSMEs in Barangay Tisa, Cebu City.

The study is anchored on the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh, Morris, Davis, and Davis (2003), which explains technology acceptance through behavioral intention and actual use. The study also refers to the Unified Theory of Acceptance and Use of Technology (UTAUT) of Venkatesh, Morris, and Davis (2003), which integrates major technology acceptance models such as the theory of reasoned action, technology acceptance model, motivational model, theory of planned behavior, model of PC utilization, innovation diffusion theory, and social cognitive theory. UTAUT explains technology acceptance through performance expectancy, effort expectancy, social influence, and facilitating conditions, with behavioral intention serving as an essential predictor of technology use (Venkatesh et al., 2003). The study also uses David A. Garvin's eight dimensions of quality as a basis for assessing product or service quality, since quality may vary across dimensions and can guide strategic quality management (Jun-Mo et al., 1998). E-learning theory supports the technology-based design of the tool by explaining how electronic educational technology can promote effective learning (Mayer, Sweller & Moreno, 2020), reduce cognitive load, and support effective learning with technology (He, n.d.). Constructivist learning theory further supports the design by emphasizing that learners build knowledge through experience, personal meaning, and real-world connection (Sengupta, 2019). Baumol's Theory provides the cash management basis by explaining the trade-off between liquidity and the opportunity cost of holding cash (Baumol, 1952), with the model depending on the balance between maintaining cash and the foregone interest from holding non-interest-bearing cash (Baumol 1952).

The main gap addressed by the study is the lack of a cash flow management mobile tool suited to MSMEs in Barangay Tisa, Cebu City. Existing applications are often designed for corporate-scale finance or personal finance, leaving uncertainty about how these tools support MSME-specific cash activities (Skare et al., 2023). The reviewed literature also shows several limitations: Ouma (2021) focused only on SMEs in Kenya and faced limited financial disclosure; Hazem et al. (2020) required larger empirical testing across industries; Rosli (2020) focused on government agencies in Melaka; Bari et al. (2019) reported possible respondent bias; Anamege (2019) was limited to small-scale contractors in Nigeria; Cantele et al. (2018) focused on Italian firms; and Bontis et al. (2018) had a restricted sample and sector scope. These limitations point to the need for a context-specific investigation of MSME cash management, technology acceptance, functionality, and adoption barriers in a local Philippine setting. The study is therefore justified by the need to develop and validate a practical mobile tool that supports MSME cash inflows, outflows, payment scheduling, expense control, cash balance monitoring, and preparation for uncertainty. It also responds to findings that SMEs often face financial constraints, weak budgeting practices, limited access to credit, and insufficient digital skills, as noted by Bakhtiari et. al. (2020), Esiebugie et. al. (2018), Omondi et. al. (2018), and Winarsih et al. (2021).

This study aligns most directly with SDG 8 – Decent Work and Economic Growth because it supports MSME financial management, profitability, business survival, and local economic activity. The focus on cash flow management, financial performance, and business continuity is consistent with literature emphasizing SME profitability, financial constraints, innovation, and economic growth, including Pandey (2020), Prijadi et al. (2022), Adam et al. (2021), Gherghina et. al. (2020), and Guo et. al. (2020). The study also aligns with SDG 9 – Industry, Innovation and Infrastructure because it develops a mobile technology-based tool for MSME cash management. Its focus on innovation, technology adoption, and digitalization is supported by Hazem et al. (2020), Abdulrab et al. (2022), Papadopoulos et al. (2020), and Winarsih et al. (2021). SDG 4 – Quality Education is also relevant because the tool and its theoretical basis involve digital learning, financial knowledge, and technology-supported skills development, consistent with (Mayer, Sweller & Moreno, 2020), (He, n.d.), and (Sengupta, 2019). SDG 11 – Sustainable Cities and Communities applies because the study addresses MSMEs in Barangay Tisa, Cebu City, contributing to local enterprise resilience and community-level economic sustainability. SDG 16 – Peace, Justice, and Strong Institutions is relevant through the study's connection to legal and accounting frameworks, including Republic Act 8792, Republic Act 8293, Republic Act 6977 (R.A. 6977), Republic Act 8289 (R.A. 8289), Republic Act 10055 (R.A. 10055), and Philippine Accounting Standards No. 7 (PAS 7). SDG 17 – Partnerships for the Goals is also reflected in the study's involvement of MSM entrepreneurs, cash flow management experts, and information technology experts.

The study contributes to socio-economic sustainability by helping MSMEs strengthen cash flow monitoring, budgeting, payment scheduling, and resilience against insolvency or uncertainty. It supports technological and innovation sustainability by developing a mobile tool that responds to MSME-level needs rather than relying on applications designed primarily for corporate or personal finance contexts. It also contributes to educational sustainability by improving financial and digital awareness among entrepreneurs, faculty, students, and future researchers. The study has relevance to institutional and governance sustainability because it is framed by Philippine laws on e-commerce, intellectual property, MSME development, technology transfer, and cash flow reporting. It also contributes to community sustainability by focusing on MSMEs in Barangay Tisa, Cebu City, where improved cash management may support local business continuity, employment, and economic activity. Environmental sustainability is not the central focus of the study; however, the related literature recognizes sustainability practices, green management, environmental performance, and corporate environmental sustainability as connected to SME performance through Bartolacci et al. (2020), Tien (2020), Cantele et al. (2018), and Centobelli et. al. (2019).

Overall, the study is grounded in the need for a practical, acceptable, and functional mobile cash management tool for MSMEs in Barangay Tisa, Cebu City. By combining cash management theory, technology acceptance theory, quality assessment, legal standards, and sustainability-oriented literature, the study aims to support MSMEs in improving financial performance, adopting useful digital tools, and strengthening their capacity to manage cash inflows and outflows in a changing business environment.

2. Material and methods

2.1 Research Design

The study used a quantitative research method with a descriptive design. This design was used to describe the current status of the variables related to the development, functionality, acceptability, and adoption of the innovated cash flow management mobile tool. The study involved data gathering, presentation, analysis, and interpretation, with the survey questionnaire serving as the main research instrument. The research process followed an input-process-output approach, where respondent profiles, tool development, functionality, UTAUT-related acceptability, adoption barriers, and adaptation inputs were assessed through request letters, questionnaires, data collection, statistical computation, interpretation, findings, conclusions, and recommendations.

2.2 Locale of the Study

The study was conducted in Barangay Tisa, Cebu City. According to Philippine Statistics Authority or PSA Region 7 and Countryside in Figures: Cebu City, Cebu City is a first-class highly urbanized city in Central Visayas with a population of 922,611 people and 80 barangays divided into northern and southern congressional districts. Barangay Tisa, which belongs to the Cebu City South District, has a population of 37,749 residents. The locale was selected because residents are engaged in different occupations and business activities, including micro, small, and medium-scale enterprises, particularly in food, trading, and leasing.

2.3 Respondents of the Study

The respondents consisted of micro, small, and medium entrepreneurs in Barangay Tisa, Cebu City, selected BSBA students, experts in cash flow management, and experts in information technology, particularly in cash flow management applications. The manuscript identified thirty micro, small, and medium entrepreneurs, thirty selected BSBA students, ten cash flow management experts, and ten information technology experts, for a total of 80 respondents. The participants also included vendors, managers, and owners from MSMEs, certified public accountants or other financial management experts, and information technology specialists in cash flow management technology applications.

2.4 Sample and Sampling Procedure

The reported respondent group was drawn from MSM entrepreneurs in Barangay Tisa, selected BSBA students, cash flow management experts, and information technology experts. These groups were included to provide evaluation data on the development, functionality, acceptability, and adoption challenges of the proposed mobile tool.

2.5 Research Instrument

The study used an adapted questionnaire designed to gather information from micro, small, and medium entrepreneurs and other respondent groups. The questionnaire had two main parts. The first part gathered respondent profiles, including age, gender, marital status, educational attainment, number of years in business or profession, and monthly income level. The second part assessed the extent of functionality of the innovated cash flow management mobile tool and the level of acceptability of the tool in relation to UTAUT. One set of questionnaire items focused on Garvin's Dimensions of Quality, while another focused on the United Theory of Acceptance and Use of Technology (UTAUT). Both sets used a five-point Likert scale to determine effectiveness and acceptability. The Likert Scale (1932) was used to measure respondent agreement with statements related to the tool's functionality and acceptability.

2.6 Data Gathering Procedure

The researcher first sought approval for the conduct of the study and presented the purpose and justification of the evaluation to the respondents. The researcher also submitted a request letter to the barangay captain of Barangay Tisa, Cebu City. After approval, the researcher demonstrated how the cash flow management tool was developed using an existing program and explained how respondents could access and use the tool. The questionnaire was then distributed for evaluation. Informal interviews were also conducted to support the survey data. After the respondents completed the questionnaire, the instruments were retrieved and prepared for statistical treatment.

2.7 Data Analysis Techniques

The study used descriptive and inferential statistics to analyze the gathered data. The mean was used to describe the extent of functionality and acceptability of the innovated cash flow management mobile tool with the aid of Microsoft Excel. Percentages were used to relate response frequencies to the total number of respondents. Weighted mean was used to

interpret the extent of functionality and level of acceptability of the tool. One-way ANOVA was used to determine whether there was a significant difference between the means for functionality and acceptability.

2.8 Ethical Considerations

The study observed ethical safeguards to protect the participants from risk or harm. The researcher ensured that respondents' privacy and confidentiality were respected during the distribution of questionnaires. Participation was voluntary, and an informed consent form was provided to explain the research process and clarify the participants' rights. The researcher emphasized the participants' right to information, voluntary participation, and right to withdraw if they experienced discomfort. The anonymity and confidentiality of responses were maintained by keeping the information within the researcher's access only. To prevent unauthorized access or data breach, the gathered information was stored in a protected disk accessible only to the researcher. The data were to be stored for five years after completion of the study and disposed of afterward.

3. Results and Discussion

3.1 Respondent Profile

3.1.1 Age of the Respondents

The respondents were mostly young. The largest group was 20 years old and below, comprising 35% of the respondents, followed by those aged 21–25 years old at 28.75%. The age groups 26–30, 31–35, and 41–45 years old each represented 8.75%, while those aged 36–40 years old accounted for 7.5%. Only 2.5% were aged 51–55 years old, and no respondents belonged to the 46–50 and 56 years old and above categories. This result indicates strong participation from younger individuals, including students, young professionals, and young entrepreneurs. The limited representation of older age groups suggests that the findings mainly reflect the perceptions of younger users toward mobile cash management. This supports the view that age may relate to financial knowledge and cash management behavior, especially in maintaining cash funds and paying expense balances (Shrestha, P. 2020).

3.1.2 Gender of the Respondents

The majority of the respondents were female, with 57 respondents or 71.25%, while 23 respondents or 28.75% were male. This shows that female respondents formed the larger share of those who evaluated the innovated cash flow management mobile tool. This result suggests stronger female participation in the study and may indicate greater engagement of women in cash flow management activities. Cheston and Kuhn (2002) explained that women represent a large share of the world's poorest people served by microfinance institutions, and the findings also relate to the observation that women often maintain excellent payment records despite household responsibilities and daily hardships (Omondi et. al. 2018).

3.1.3 Marital Status of the Respondents

Most respondents were single, accounting for 48 respondents or 60%, while 32 respondents or 40% were married. No respondents were separated, widowed, or widowers. This profile shows that the respondents were largely composed of single individuals, including college students, young professionals in financial management, and young small and medium entrepreneurs. This supports the interpretation that younger and unmarried participants formed an important respondent group in evaluating the tool (Eton et. al. 2019).

3.1.4 Educational Attainment of the Respondents

The largest educational group consisted of high school graduates, with 35 respondents or 43.75%, followed by college graduates with 31 respondents or 38.75%. Respondents with doctoral degrees accounted for 8.75%, those with master's degrees accounted for 6.25%, and elementary graduates accounted for 2.50%. The findings suggest that many respondents had at least secondary or college-level education, which may have influenced their ability to understand the tool and its cash management functions. The presence of high school and college-level respondents with business experience implies early exposure to entrepreneurship and financial decision-making (Shrestha, P. 2020).

3.1.5 Number of Years in Business or Profession

The largest group had 1 to 5 years of business or professional experience, representing 28 respondents or 35%. Respondents with no applicable business experience accounted for 28.75%, followed by those with 6 to 10 years of experience at 21.25%, 11 to 15 years at 7.50%, 16 to 20 years at 5%, and above 20 years at 2.50%. This result indicates that the respondents were mostly early-stage entrepreneurs, professionals, or students with limited but relevant exposure to business activities. The dominance of respondents with 1 to 5 years of experience suggests that the tool may be particularly relevant to newer entrepreneurs who are still developing cash management practices, especially in handling expenses and costs (Shrestha, P. 2020).

3.1.6 Monthly Income Level

The highest income group consisted of respondents earning PHP5,000 below, representing 20 respondents or 25%. Respondents with no applicable monthly income accounted for 19 respondents or 23.75%. Those earning PHP15,001–25,000 represented 15%, PHP5,000–15,000 represented 12.50%, PHP25,001–35,000 represented 8.75%, and those earning PHP35,001–45,000, PHP45,001–50,000, and PHP50,000 above each represented 5%. The results show that many respondents were low-income earners or had no fixed income, reflecting the presence of students and small-scale business owners among the respondents. This supports the interpretation that many college-level entrepreneurs and early-stage business owners earn limited income, especially during the first years of business operation (Omondi et. al. 2018).

3.2 Development of the Innovated Cash Flow Management Mobile Tool

3.2.1 Technical Design and Features

The innovated cash flow management mobile tool was developed to support personal and business finance management. Its design was based on General Accepted Accounting Principles in the preparation of a statement of cash flow (Philippine Accounting Standard No. 7). The tool was organized to monitor cash inflows and outflows through a user-friendly interface. Its main features included expense tracking, budgeting tools, reports and analytics, multi-platform accessibility, and transaction categorization and search. The development of these features reflects the need for cash management tools that support financial knowledge and proper cash management practices. According to Esiebugie et. al. (2018), financial knowledge affects the performance of Small and Medium Scale Enterprises (SMEs). The tool therefore supports proper cash management practices by helping users record cash received, cash revenue, cash expenses, and cash used (Nso, 2018).

3.2.2 Labor Costs and Operational Structure

The tool, called “Budyet ta Bai,” required PHP15,000 for the application and PHP1,500 for programmer fees, giving a total embedded cost of PHP16,500. Operationally, the tool was organized into recording and reporting phases. The recording phase allowed users to log in, view the cash balance, and record cash inflows and outflows by category. The reporting phase displayed transaction dates, daily cash in and cash out, cash flow charts, and a financial overview of inflows and outflows. The operational structure shows that smartphones can support daily financial routines and decision-making processes, especially in cash flow management (Lashitew et. al. 2019). The tool provides real-time access to financial data through smartphones or tablets (Nso, M. A. 2018), and its operation supports the financial performance and cash management knowledge of small and medium enterprise owners and users (Ali et. al. 2020).

3.2.3 Functional Components of the Tool

The tool included a main dashboard, recording buttons for cash inflows and outflows, a reporting function, and additional features for importing transactions, exporting transactions, deleting transactions, generating printed reports, and scanning reports for documentation. The main dashboard displayed the total cash balance and summaries of transactions by category. These functions show that the tool was designed to make cash management more convenient and efficient for users. It supports monitoring and optimization of cash flow, financial control, and decision-making (Ali et. al. 2020). The tool’s functions also reflect the importance of tracking expenses, budgeting, and forecasting in personal and business finance (Ouma, 2021), especially in a digitally driven financial environment (Adam et al. 2021).

3.2.4 Ergonomics and Safety

The tool considered accessibility, physical comfort, display visibility, user authentication, transaction verification, and device safety. It was designed for smartphone use so users could access it anytime and anywhere, with attention to visibility, ease of interaction, and protection of sensitive financial information. The ergonomic and safety considerations support the need for a tool that is efficient, comfortable, and safe for users (Guo et. al. 2020). A well-designed cash management mobile tool should consider both physical and cognitive aspects of interaction to improve usability and reduce risks or discomfort (Kuchai et. al. 2020). Accessibility through smartphones supports user convenience (Ali et al. 2020), while proper screen visibility reduces eye strain (Pramanik et al. 2019). User authentication protects financial information (Adam et al. 2021), transaction verification helps prevent errors or fraud (Abdulrab et al. 2022), and device safety remains important because mobile devices may be exposed to viruses and malware (Kuchai et. al. 2020).

3.3 Extent of Functionality of the Innovated Cash Flow Management Mobile Tool

The tool’s functionality was assessed through performance, accuracy, reliability, serviceability, and portability. These dimensions were anchored on Garvin’s Dimension of Quality (<https://hbr.org/1987/11/competing-on-the-eight-dimensions-of-quality>). Jun-Mo et al.; (1998) recognized Garvin’s Dimension as a framework for strategic analysis to gain quality leverage in a competitive market, and the study applied these dimensions to distinguish the proposed tool from other products (Jun-Mo et al., 1998).

3.3.1 Performance

The tool was rated “Very Great Extent” in performance, with a grand overall mean of 4.56. Respondents rated satisfaction with overall performance at 4.65, the tool’s ability to meet performance requirements at 4.50, and speed and efficiency at 4.53. IT experts consistently gave the highest ratings, particularly in meeting performance requirements.

The findings indicate that respondents perceived the tool as capable of performing its intended financial functions. Its speed, efficiency, and overall performance suggest that it can support financial and budget management needs. This result is consistent with the use of quality dimensions to evaluate how products may provide strategic value and differentiation (Jun-Mo et al., 1998).

3.3.2 Accuracy

The tool was rated “Very Great Extent” in accuracy, with a grand overall mean of 4.48. Respondents rated frequency of encountering errors at 4.32, importance of accuracy in the tool context at 4.61, and accuracy compared with other tools at 4.52. IT experts gave the highest rating for the importance of accuracy, with a perfect mean of 5.00. The results show that respondents viewed the tool as accurate and useful for recording financial transactions. Accuracy is important because real-time financial inputs may affect the correctness of data entered, interpreted, and used for decision-making. This finding supports the quality-based evaluation of the tool and its usefulness in reducing errors, improving financial decisions, and strengthening stakeholder confidence.

3.3.3 Reliability

The tool was rated “Very Great Extent” in reliability, with a grand overall mean of 4.46. Respondents rated the tool’s ability to avoid malfunction or breakdown at 4.50, consistency in performing as expected at 4.53, and minimal need for customer support for reliability-related issues at 4.35.

The findings indicate that respondents perceived the tool as dependable for day-to-day financial operations. Its reliability suggests that it can help maintain operational continuity and provide consistent information for planning and resource allocation. This supports the study’s use of quality dimensions to evaluate the tool’s suitability for cash management tasks.

3.3.4 Serviceability

The tool was rated “Very Great Extent” in serviceability, with a grand overall mean of 4.61. Respondents rated dependability of the service at 4.63, attentiveness and proactiveness of the tool provider at 4.61, and confidence in the providers’ expertise and knowledge at 4.58. IT experts again gave very high ratings, including perfect ratings for provider attentiveness and provider expertise. The findings suggest that the tool was viewed as serviceable and responsive to user needs. Its serviceability may help users in financial reporting, liquidity management, and simple financial forecasting. The result also indicates that provider support and technical knowledge are important in sustaining confidence in the tool’s usability and long-term value.

3.3.5 Portability

The tool was rated “Very Great Extent” in portability, with a grand overall mean of 4.58. Respondents rated the importance of easy transport and movement at 4.68, absence of portability challenges at 4.44, and preference for the tool’s portability over other applications at 4.62. IT experts gave perfect ratings across the portability indicators. The result indicates that respondents valued the tool’s mobility and accessibility through smartphones. Its portability supports the transfer of data between devices, file import and export, and backup creation. This is important because financial transactions are increasingly managed through online services, mobile devices, and digital platforms.

3.4 Level of Acceptability Based on UTAUT

The tool’s acceptability was assessed through performance expectancy, effort expectancy, and social influence. The assessment was anchored on the Unified Theory of Acceptance of Use of Technology (UTAUT) Model, which suggests that actual technology use is determined by behavioral intention and that the perceived likelihood of technology adoption depends on performance expectancy, effort expectancy, and social influence (Venkatesh et al., 2003).

3.4.1 Performance Expectancy

The tool was rated “High Acceptable” in performance expectancy, with a grand overall mean of 4.62. Respondents rated usefulness in business planning at 4.62, ability to help users comprehend and accomplish cash flow tasks more quickly at 4.68, and ability to increase business productivity at 4.57. The result shows that respondents believed the tool could help improve job or business performance. This aligns with the concept of performance expectancy, which refers to the degree to which an individual believes that using a technology will help attain gains in job performance (Venkatesh et al., 2003). The ratings suggest that the tool’s accessibility and compatibility through smartphones may support cash flow management and productivity.

3.4.2 Effort Expectancy

The tool was rated “High Acceptable” in effort expectancy, with a grand overall mean of 4.64. Respondents rated clarity and understandability of interaction at 4.60, ease of becoming skillful at 4.67, and ease of using the tool for performance activities at 4.65. IT experts gave a perfect rating for ease of becoming skillful in using the application. The findings suggest that the tool was perceived as easy to learn and use. This result fits the definition of effort expectancy as the “degree of ease associated with the use of the system” (Venkatesh et al., 2003). The high ratings indicate that the tool’s commands, buttons, and interface may support user confidence and ease of access to needed financial information.

3.4.3 Social Influence

The tool was rated “High Acceptable” in social influence, with a grand overall mean of 4.60. Respondents rated influence from opinions and recommendations of others at 4.61, absence of negative feedback from others at 4.48, and the likelihood that the tool would encourage other entrepreneurs to apply it at 4.72. The result indicates that social influence contributed positively to the tool’s acceptability. Social influence refers to the degree to which an individual perceives that important others believe they should use the tool (Venkatesh et al., 2003). The high ratings suggest that recommendations, peer opinions, social media, and digital financial platforms may affect user willingness to adopt the mobile tool.

3.5 Significant Relationship Between Acceptability Variables

The manuscript identified a section on the significant relationship between the acceptability of the innovated cash flow management tool and indicated ANOVA as the statistical procedure. However, no numerical ANOVA values, test statistics, probability values, decision rule, or interpretation were provided in the presented chapter. Because the ANOVA results were not reported, no conclusion can be drawn regarding the significant relationship between acceptability variables. The relationship section therefore cannot be interpreted beyond acknowledging that the manuscript intended to examine this aspect but did not present the corresponding statistical findings.

3.6 Barriers and Challenges in the Adoption of the Innovated Cash Management Mobile Tool

The barriers identified in the adoption of the tool included technological barriers, resistance to change, trust and security concerns, device compatibility and fragmentation, and cost and affordability. The corresponding challenges involved the need for more competitive networks, user education and training, stronger security measures, compatible devices, cost-benefit research, and alternative ways to reduce expenses. These findings indicate that digital adoption requires more than the availability of a mobile tool. Digitalization can improve business productivity and performance, but SMEs need to rethink business processes to secure continuity through digital technologies (Papadopoulos et al., 2020). The shift from traditional liquidity management to digital systems is challenging, even as online banking contributes to business processes (Ouma, 2021). Some owners and managers have limited financial management knowledge and may find it difficult to adopt digital technology (Ouma, 2020). Training and seminars may address resistance to change and help users understand the value of technology in finance (Guo et al., 2020). Trust and security concerns also remain important because users may worry about privacy and handling of financial data on mobile devices (Skare et al., 2023). Cost and affordability are also adoption concerns because users may hesitate to invest in tools that require updates, installation, or related expenses (Winarsih et al., 2021).

4. Conclusion & Recommendations

The study concluded that the mobile cash flow management tool provides practical advantages for students and micro, small, and medium entrepreneurs by supporting financial monitoring, cost and expense tracking, and cash management activities through smartphone use. Its development was anchored on the Unified Theory of Acceptance and Use of Technology (UTAUT) Model and Garvin’s Dimensions of Quality, and the tool was found effective in terms of technical requirements, operations, functions, ergonomics, and safety. It was also perceived as highly acceptable by entrepreneurs, experts, and students in terms of performance expectancy, effort expectancy, and social influence. However, the study also found that adoption may be affected by barriers such as resistance to change, trust and security concerns, limited financial literacy, and the need for user training.

It is recommended that SME business owners and students adopt the innovated cash management mobile tool to improve cash management, particularly in tracking finances through smartphones. The tool may help users set financial goals, monitor financial progress, and gain clearer financial insights through visual representations of cash inflows and outflows. It is also recommended that the tool be continuously monitored for further modification and improvement of its functions and applications.

The study identified barriers and challenges that may limit the adoption of the innovated cash flow management mobile tool, particularly users’ resistance to change, trust and security concerns, limited financial literacy, and insufficient knowledge in using technology-based financial tools. These concerns indicate the need for education, training, and workshops to improve users’ confidence, financial productivity, and ability to apply the tool effectively.

Compliance with ethical standards

The study complied with institutional ethical standards in the conduct of research involving micro, small, and medium entrepreneurs, students, and expert respondents. Participation was voluntary, and informed consent was obtained after the purpose, procedures, rights of participants, and option to withdraw were explained. Confidentiality and anonymity were maintained by protecting all survey responses and limiting access to the gathered data. The required approval and permission were secured before data collection, and the study observed responsible authorship, proper acknowledgement of participant and expert contributions, and respect for copyright ownership. The researcher declares that there was no conflict of interest in the conduct and reporting of the study.

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