# Electronic Financial Management and Its Impact on the Effectiveness of Financial Operations

# الادارة المالية الالكترونية وأثرها في فاعلية العمليات المالية


**Mohanad Ali mohsin** **Hassan Abdul Kaareem Arheema** **Wabila Mahdi Saleh**

مهند علي محسن حسن عبد الكريم أرحيمة وابلة مهدي صلاح

muhanad.mam112@gmail.com

**College of Administration and Digital Economy Al-Karkh University of Science**



**تاريخ تقديم البحث : 2025/09/27**

**تاريخ قبول النشر : 2025/11/25**



## ABSTRACT

This study aimed to describe electronic financial management, its components, and to identify its significance in institutional operational processes. It further sought to analyze the impact of electronic financial management on the Effectiveness of financial operations. The research adopted a descriptive-analytical methodology. Statistical analyses revealed a statistically significant positive impact of the study variables on financial Effectiveness. The correlation coefficient (R) across all dimensions indicated positive effects ranging from moderate to strong. The study recommends promoting automation and digital transformation in financial institutions, as analysis confirmed a positive impact on financial Effectiveness — underscoring the critical role of digital technology in enhancing financial performance.



Keywords**: Financial Management , Electronic Financial Management , Effectiveness of Financial Operations.**



**الملخص :**

هدفت هذه الدراسة إلى وصف الإدارة المالية الإلكترونية ومكوناتها، والتعرّف على أهميتها في العمليات التشغيلية المؤسسية. كما سعت إلى تحليل أثر الإدارة المالية الإلكترونية في فاعلية العمليات المالية. وقد اعتمد البحث المنهج الوصفي التحليلي. وأظهرت التحليلات الإحصائية وجود أثر إيجابي ذو دلالة إحصائية لمتغيرات الدراسة على الفاعلية المالية. كما بيّنت معاملات الارتباط (R) عبر جميع الأبعاد وجود تأثيرات إيجابية تتراوح بين المتوسطة والقوية. وتوصي الدراسة بضرورة تعزيز الأتمتة والتحول الرقمي في المؤسسات المالية، إذ أكّد التحليل وجود أثر إيجابي على الفاعلية المالية، مما يبرز الدور الحيوي للتكنولوجيا الرقمية في تحسين الأداء المالي .



الكلمات المفتاحية: الإدارة المالية , الإدارة المالية الإلكترونية , فاعلية العمليات المالية.


## INTRODUCTION

By the end of the 20th century, electronic financial management began to emerge, signaling a profound transformation in how money and financial transactions are managed. As technology advanced, tools and software were developed to support payment, accounting, financing, and investment processes. Yet, a fundamental question remained: What are the primary forces shaping modern financial management? With the ongoing digital revolution, understanding the financial implications of integrating modern tools and technologies into financing, investment, and operational decision-making has become imperative. In essence, technological evolution has radically reshaped financial management — but it has also raised critical questions regarding its impact on financial and investment operations.

I. SIGNIFICANCE OF THE STUDY

The importance of this study lies in the following:

- Impact Assessment: To evaluate the actual impact of electronic financial management, highlighting the technologies implemented and enabling data and information analysis.
- Benefit Clarification: To identify achievable benefits such as cost reduction, improved decision-making accuracy, and accelerated decision-making speed.
- Challenge Identification: To shed light on challenges faced in implementing electronic financial management, including cybersecurity threats, development costs, and resistance to change.
- Practical Recommendations: To offer actionable advice to institutions and companies seeking to maximize the benefits of electronic financial management across sectors, while mitigating associated risks.

## II. RESEARCH OBJECTIVES

This study aims to:

- Describe electronic financial management, its elements, and its operational importance to institutions.
- Analyze the impact of electronic financial management on financial Effectiveness .
- Identify key factors and indicators influencing successful implementation (e.g., institution size, nature of work, available technological resources), with comparative analysis across institutions.

## III. RESEARCH PROBLEM

Despite the growing importance of electronic financial management in today's business world, its actual impact on financial Effectiveness remains debated. This study seeks to answer the following questions:

**Main Research Question:**

1. What is the role of electronic financial management in enhancing financial Effectiveness?

**Sub-Questions:**

1. What is the role of automation and digital transformation in financial Effectiveness?
2. What is the role of financial analytics and intelligence in financial Effectiveness?
3. What is the role of security and privacy in financial Effectiveness?

## IV. RESEARCH HYPOTHESES

**Main Hypothesis:**

There is a statistically significant role of electronic financial management in enhancing financial Effectiveness.

**Sub-Hypotheses:**

- There is a statistically significant role of automation and digital transformation in financial Effectiveness.
- There is a statistically significant role of financial analytics and intelligence in financial Effectiveness.
- There is a statistically significant role of security and privacy in financial Effectiveness.

## V. STUDY VARIABLES

The study examines the independent variable of Electronic Financial Management, which consists of key dimensions including automation and digital transformation that streamline processes, financial analytics and intelligence that support data-driven insights, and security and privacy that protect against risks. The dependent variable is Financial Effectiveness, encompassing profitability as a measure of profit generation, liquidity as the ability to meet short-term obligations, and operational effectiveness as the efficient utilization of resources

Independent Variable: *Electronic Financial Management*
→ Dimensions:

1. Automation & Digital Transformation
2. Financial Analytics & Intelligence
3. Security & Privacy

Dependent Variable: *Financial Effectiveness*
→ Dimensions:

1. Profitability
2. Liquidity
3. Operational Effectiveness

## VI. RESEARCH METHODOLOGY

The researcher employed the descriptive-analytical method, characterized by collecting and analyzing existing information to gain comprehensive theoretical and practical insights.

## VII. LITERATURE REVIEW

**1.** Ibrahim (2023)
Title: *The Role of Electronic Management in Improving the Quality of Financial Services for Economic Institutions*
Focused on Algeria's "E-Algeria 2013" initiative, highlighting objectives and mechanisms aimed at digitizing administration and improving citizen services. Findings: Institutions must abandon traditional methods and adopt ICT-based electronic management for speed, transparency, and objectivity in financial services.

**2.** Raziqa (2023)
Title: *The Reality of Transitioning to Electronic Human Resource Management in Algerian Public Administration: Case Study of the Ministry of Finance*
Evaluated adoption of electronic HRM for Effectiveness , speed, and transparency. Findings: Algerian public institutions are moving toward digitization, but face organizational, legal, technological, and human barriers requiring resolution.

**3.** Zaid (2024)
Title: *The Impact of Electronic Governance on Employee Performance: Field Study on Finance Office Staff in Taiz City*
Examined four dimensions of e-governance (planning, organizing, leading, controlling). Method: Descriptive-analytical; sample: 85 out of 114 employees. Findings: Significant positive impact on performance; recommended promoting e-governance culture.

**4.** Maryam (2024)
Title: *The Role of Abbreviated Management in Clarifying the Abbreviated Method*
Explored how technology contributes to effective modern financial investigation processes. Sample: 39 questionnaires. Findings: Emphasized financial oversight, data integrity, modern tools, and staff training for effective deployment.

# CHAPTER ONE: THEORETICAL FRAMEWORK

1.1. Electronic Financial Management

1.1.1. Concept and Evolution

The business world has undergone a massive digital transformation in recent decades, profoundly impacting all aspects of life — including financial management. This shift gave rise to Electronic Financial Management (EFM), defined as the use of digital technology to manage institutional financial operations (Ayed, 2016). EFM applies digital tools across all financial functions — from transaction recording to financial reporting.

Key Components of EFM:

- Electronic Accounting Systems
- Online Banking Transactions
- E-Commerce
- Electronic Investment Management
- Financial Data Analytics

Evolution of EFM (Djilali, 2015):

- 1st Generation: Basic bank account management systems.
- 2nd Generation: Integrated accounting systems.
- 3rd Generation: E-commerce and digital payments.
- 4th Generation: AI and machine learning in financial management (Ababa, 2022).

## 1.1.2. Importance of EFM

EFM plays a pivotal role in modern business by enhancing Effectiveness, effectiveness, and simplifying financial processes (Alimat, 2023):

- Accuracy & Effectiveness: Reduces human error, accelerates transaction processing.
- Control & Oversight: Provides comprehensive visibility for monitoring and analysis.
- Security: Employs strong encryption to protect financial data.
- Accessibility: Enables 24/7 access from any location.

Coverage Areas:

- Accounting
- Budgeting
- Payment Management
- Investment Management
- Inventory Management (Mustafa & Suleiman, 2020)

Challenges:

- Cybersecurity risks
- Implementation costs
- Need for skilled human resources (Othman, 2018)

1.1.3. Technologies of EFM and Their Financial Impact

EFM technologies revolutionize traditional financial management through Effectiveness and transparency.

Examples:

- Accounting Software: QuickBooks, Xero — automate transactions, reporting, sales, expenses.
- Online Banking: Enables transfers, bill payments.
- E-Wallets: PayPal, Apple Pay — facilitate online payments (A. Dr. Ahmed, 2023).

Impact on Financial Operations:

- Increased speed and Effectiveness
- Enhanced accuracy
- Real-time data access
- Improved interdepartmental collaboration (Othman, 2018)
-

**1.1.4. Dimensions of EFM**

**1.** Automation & Digital Transformation

The backbone of digital finance. Replaces manual, error-prone tasks with intelligent systems for recording income/expenses, report generation, budgeting, and payment management. Reduces errors, saves time, optimizes resources.

**2.** Security & Privacy

Critical in the digital age. Protects against cyber threats through encryption, multi-layered security systems, staff training, and regulatory compliance (Ayed, 2016).

1.2. Financial Effectiveness

1.2.1. Indicators of Financial Effectiveness

Financial performance indicators evaluate an organization's fiscal health, identify strengths/weaknesses, track progress, and support investment decisions (Tali, 2017).

Functions:

- Performance tracking (short & long term)
- Benchmarking against competitors
- Supporting managerial & investment decisions
- Identifying improvement areas

**1.2.2. Types of Financial Effectiveness Indicators**

1. Profitability Ratios
- Net Profit Margin
- Return on Investment (ROI)
2. Liquidity Ratios
- Current Ratio
- Quick Ratio
3. Leverage Ratios
- Debt-to-Equity Ratio
- Interest Coverage Ratio
4. Operational Effectiveness Ratios
- Inventory Turnover
- Cash Conversion Cycle
- Fixed Asset Turnover (Al-Zaydaneen, 2022)

1.2.3. Challenges to Financial Effectiveness

Organizations face multiple internal and external challenges (Al-Zaydaneen, 2022):

1. Rapid Technological Change
- System complexity
- Cybersecurity threats
- Continuous upgrade costs
2. Big Data & Analytics
- Massive data volumes (Jaim & Ahmed, 2023)
- Need for specialized analytical tools & skills
3. Financial Fraud
- Increasingly sophisticated fraud methods
- Potential for massive financial losses (Al-Wafi, 2015)

1.2.4. Enhancing Financial Effectiveness via EFM

EFM is now a cornerstone of institutional Effectiveness, offering tools to automate processes and improve decision-making (Al-Zaydaneen, 2022).

How EFM Enhances Effectiveness:

1. Process Automation

- Automatic, accurate transaction recording
- Faster, real-time financial reporting
- Automated payment management

2. Improved Accuracy

- Reduced human error
- Higher data reliability → better decisions (Jaim & Ahmed, 2023)

1.2.5. Dimensions of Financial Effectiveness (Al-Zaydaneen, 2022)

1. Profitability
   Measures sustainable profit generation (e.g., gross/net profit margin, ROI).
2. Liquidity
   Ability to meet short-term obligations (e.g., current & quick ratios).
3. Operational Effectiveness Measures resource utilization effectiveness (e.g., inventory turnover, cash conversion cycle, fixed asset turnover) (A. Dr. Ahmed, 2023).

**CHAPTER TWO: FIELD STUDY**

This research contributes significantly to the application of statistical testing in scientific studies. It begins with frequency and descriptive statistics to understand data distribution, followed by hypothesis testing to validate assumptions and ensure reliable, accurate conclusions.

I. FREQUENCY DISTRIBUTION

Table 1: Demographic Frequencies

| | | | | |
|---|---|---|---|---|
| Male | 120 | 75.0 | 75.0 | 75.0 |
| Female | 40 | 25.0 | 25.0 | 100.0 |
| Total | 160 | 100 | 100 | |
| 20-35 years | 101 | 63.1 | 63.1 | 63.1 |
| 36-45 years | 56 | 35.0 | 35.0 | 98.1 |
| 46+ years | 3 | 1.9 | 1.9 | 100.0 |
| Total | 160 | 100 | 100 | |
| Diploma | 18 | 11.3 | 11.3 | 11.3 |
| Bachelor | 32 | 20.0 | 20.0 | 31.3 |
| Master | 110 | 68.8 | 68.8 | 100.0 |
| Total | 160 | 100 | 100 | |
| ≤5 years | 72 | 45.0 | 45.0 | 45.0 |
| 6-10 years | 32 | 20.0 | 20.0 | 65.0 |
| 11-15 years | 28 | 17.5 | 17.5 | 82.5 |
| 16+ years | 28 | 17.5 | 17.5 | 100.0 |
| Total | 160 | 100 | 100 | |

Interpretation:

- Majority male (75%), aged 20-35 (63.1%), holding Master's degrees (68.8%).
- 45% have ≤5 years of service.
- Sample reflects diversity with dominance in key categories.

II. RELIABILITY ANALYSIS (Cronbach's Alpha)

Table 2: Reliability Coefficients

| | | |
|---|---|---|
| Independent Variable: EFM | 15 | 0.951 |
| → Automation & Digital Transformation | 5 | 0.836 |
| → Security & Privacy | 5 | 0.813 |
| → Financial Analytics & Intelligence | 5 | 0.815 |
| Dependent Variable: Financial Effectiveness | 15 | 0.968 |
| → Profitability | 5 | 0.981 |
| → Liquidity | 5 | 0.913 |
| → Operational Effectiveness | 5 | 0.864 |

Interpretation:
All values > 0.8 — indicating high internal consistency and reliable measurement tools.

**III. HYPOTHESIS TESTING**

H1: Automation & Digital Transformation → Financial Effectiveness

Table 3

| R | R Square | df | F | B | t | Sig. |
|---|---|---|---|---|---|---|
| 0.338 | 0.118 | 159 | 20.078 | 0.223 | 0.468 | 0.000 |

Findings:

- Moderate positive correlation (R=0.338)
- Explains 11.8% of variance ($R^2$)
- Highly significant (Sig. < 0.001) → Strong support for H1

H2: Financial Analytics & Intelligence → Financial Effectiveness

Table 4

| R | R Square | df | F | B | t | Sig. |
|---|---|---|---|---|---|---|
| 0.328 | 0.108 | 159 | 19.078 | 0.203 | 4.368 | 0.000 |

Findings:

- Moderate correlation (R=0.328)
- Explains 10.8% of variance
- Statistically significant (Sig. < 0.001)
  → Strong support for H2

H3: Security & Privacy → Financial Effectiveness

Table 5

| R | R Square | df | F | B | t | Sig. |
|---|---|---|---|---|---|---|
| 0.614 | 0.377 | 159 | 95.652 | 0.406 | 9.780 | 0.000 |

Findings:

- Strong positive correlation (R=0.614)
- Explains 37.7% of variance — highest impact

- Extremely significant (F=95.652, Sig. < 0.001) → Strongest support for H3

**RESULTS SUMMARY**

1. All study variables show statistically significant positive impact on financial Effectiveness, with correlation strengths ranging from moderate to strong.
2. Variance explained:

- Automation & Digital Transformation: 11.8%
- Financial Analytics: 10.8%
- Security & Privacy: 37.7% ← Most influential

3. All Sig. values = 0.000 → High statistical significance.
4. Security & Privacy dimension shows the highest B and t values → Priority factor for financial Effectiveness strategies.

**RECOMMENDATIONS**

1. Promote Automation & Digital Transformation in financial institutions — proven to enhance Effectiveness and performance.
2. Invest Heavily in Financial Analytics & Intelligence to enable data-driven decision-making and operational optimization.
3. Prioritize Security & Privacy — the most impactful dimension. Institutions must invest in cybersecurity infrastructure and compliance.
4. Encourage Adoption of Modern EFM Technologies — integrating automation, analytics, and security yields transformative improvements in financial Effectiveness.

**REFERENCES**


1. A. Dr. Ahmed, A. M., et al. (2023). *Electronic management as an entry point for developing sports activities...* Helwan University.
2. Ababa, Ali, et al. (2022). *Electronic administration and its impact on university services...* Journal of Economic Development.
3. Abu Mustafa & Suleiman (2020). *Factors affecting XBRL application...* Journal of Research in Finance.
4. Alimat, D., et al. (2023). *The modifying role of management support...* Arab Journal of Management.
5. Al-Qarni & Ayed (2016). *Organizational culture and EFM implementation...* PhD Dissertation.
6. Al-Wafi, R. (2015). *Electronic governance in local communities...* PhD Thesis, Bouira University.
7. Djilali, B. (2015). *Electronic management in Algerian institutions.* University of Algiers.
8. Jaim, H. S., & Ahmed, K. A. (2023). *Requirements for implementing EFM in Yemen...* Journal of Educational Sciences.
9. Ibrahim, B. (2023). *Role of EFM in improving financial services...* Abdelhafid Boussouf University.
10. Maryam, Y. (2024). *Role of abbreviated management...* Abdelhafid Boussouf University.
11. Othman, M. M. I. (2018). *Impact of AIS on e-commerce security...* Journal of Economic Sciences.
12. Raziqa, Y. (2023). *Shift to e-HRM in Algerian public sector...* Journal of Management Studies.
13. Al-Zaydaneen, S. S. A. (2022). *Requirements for EFM implementation...* Journal of Educational Sciences.
14. Tali, M., et al. (Thesis). *Obstacles to administrative management...* University of Ouargla.
15. Zaid, J. A. A. (2024). *Impact of EFM on employee performance...* Taiz Finance Office Study.