

THE IMPACT OF APPLYING FINANCIAL TECHNOLOGY ON IMPROVING MODERN MANAGEMENT ACCOUNTING METHODS

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Abstract

The aim of the research is to examine the connection between the independent variables, blockchain and cloud computing, and the dependent variable, modern management accounting methods in Jordanian commercial banks. With a descriptive analytical research technique, the study population involved the employees of departments of financial management, accounting, cost management, and information technology in commercial banks in Jordan. The data were analyzed through SPSS with a valid questionnaire being collected to include 169 individuals and to ascertain the effect of blockchain and cloud computing on the trend of employing modern management accounting tools, namely, target costing, activity-based costing (ABC), and the balanced scorecard (BSC). The findings reveal statistically significant positive values of the effects of both blockchain and cloud computing on the enhancement of these techniques, with the former one being a bit more influential. The results of these studies point to the necessity of implementing financial technology into management accounting processes in order to make them more accurate, transparent, and efficient in terms of making decisions.

Keywords: Financial Technology, Blockchain, Cloud Computing, Modern Management Accounting, Target Costing, Activity-Based Costing (ABC), Balanced Scorecard (BSC), and Jordanian Commercial Banks.

INTRODUCTION

In the context of the financial industry's rapid digital transformation, financial technology has become a major driving force behind the evolution of accounting and financial procedures. This is made possible by cutting-edge technologies such as cloud computing and blockchain, which offer benefits in terms of security, transparency, and processing speed. By implementing contemporary management accounting techniques like target costing, activity-based costing, and the balanced scorecard, businesses aim to enhance their performance.

The purpose of this study is to investigate how financial technology—represented by cloud computing and blockchain—can be applied to advance these techniques and strengthen their support for decision-making, operational efficiency, and gaining a long-term competitive edge.

The following FinTech tools are now being used in the accounting industry:

- 1) Blockchain: Blockchain is a key technology that promotes openness, accuracy, and lessens accounting record tampering, improving management accounting's capacity to make wise judgments and keep operating expenses low (Kanaparathi, 2024).

- 2) Cloud computing: Cloud computing greatly improves data processing capabilities by providing unmatched flexibility, security, and scalability. Cloud computing is being used by banks more and more to solve their problems economically and effectively, and possibly to change their business plans.

In light of accelerating digital transformations, financial technology has become a crucial factor in developing accounting and financial management systems. Despite the development of modern management accounting tools, the degree to which organizations benefit from them remains uneven. Hence, this study explores the following questions:

“Does the application of financial technology (Blockchain, Cloud computing) improve modern management accounting methods in organizations?”

Study objectives

- 1) Measuring the impact of blockchain on the application of modern management accounting methods.
- 2) Measuring the impact of cloud computing on improving the efficiency of management accounting methods.
- 3) Identifying the relationship between financial technology and the application of methods such as target costing, activity-based costing (ABC), and the balanced scorecard (BSC).

LITERATURE REVIEW

Modern management accounting systems, such as these, are supported and developed using blockchain and cloud computing technology. The attainment of an organization's strategic goals is supported by the Balanced Scorecard (BSC), which offers precise and up-to-date data that facilitates effective monitoring of key performance indicators (Kaplan & Norton, 1996). By offering comprehensive data that facilitates more precise activity analysis, activity-based costing, or ABC, helps to enhance cost allocation (Cooper & Kaplan, 1991).

Cloud computing and blockchain are two of the most notable technological advancements that have enhanced contemporary management accounting techniques. These technologies offer real-time, reliable data that speeds up reporting, lowers accounting errors, and improves cost allocation (Tapscott & Tapscott, 2016; Armbrust et al., 2010; Yermack, 2017).

This helps firms make more precise and efficient decisions by improving the efficacy of accounting methods like strategic cost planning, activity-based costing, and the balanced scorecard (BSC) (Kaplan & Norton, 1996; Cooper & Kaplan, 1991).

The Technology Acceptance Model (TAM) serves as the theoretical basis for this work. Fred Davis first presented the Technology Acceptance Model (TAM) in 1987. It describes how consumers assess and embrace new technology.

According to TAM, two main elements influence how people use technology (Qasaimeh & Jaradeh, 2022; Al-Naimi et al., 2023; Al-Own et al., 2023):

- Perceived usefulness: This is the extent to which people think a technology will improve their ability to do their jobs or satisfy their requirements.
- Perceived ease of use: This is the extent to which people think utilizing the technology would be simple and uncomplicated.

According to TAM, people are more inclined to accept a technology if they believe it will benefit their business or requirements and that it is simple to use (Azhar et al., 2023).

The following association is explained by the author based on this theoretical framework:

Blockchain application improves modern management accounting methods

Because every transaction is chronologically and sequentially recorded on the blockchain, it is possible to accurately track how costs and activities move across the value chain, supporting techniques like activity-based costing (ABC) (Yermack, 2017 ; Qasaimeh et al., 2022), The efficacy of strategic planning tools like the Balanced Scorecard (BSC) is increased by the precise and up-to-date data that blockchain technology provides for reporting systems (Coyne & McMickle, 2017 ; AlOmran & Al-Qassaymeh, 2023), By eliminating the requirement for a third party to validate transactions, blockchain improves accounting process efficiency while lowering oversight and internal audit expenses (Peters & Panayi, 2016).

Based on this theory, the author proposes the following hypothesis:

H1: There is a statistically significant impact of blockchain implementation on improving modern management accounting methods in Jordanian commercial banks.

Cloud computing application improves modern management accounting methods

Activity-based costing is supported by cloud computing, which improves the accuracy of cost allocation to goods and services by offering comprehensive, current data on activities and their related expenses. Additionally, it reduces errors and duplication by facilitating the sharing of this data between departments via a single platform (Sultan, 2011). Teams may work together in real time throughout the stages of product development thanks to cloud computing, which makes it easier to align planned and actual expenditures.

Additionally, it offers forecasting and analytic tools that assist in determining product costs based on market demand, which is the foundation of target costing (Marston et al., 2011). Monitoring both financial and non-financial performance metrics is essential to the balanced scorecard.

Through interactive dashboards, cloud computing offers quick access to key indicators, improving the capacity to continuously monitor and modify strategies and policies in response to real performance (Lombardi et al., 2020).

Based on this theory, the author proposes the following hypothesis:

H2: There is a statistically significant impact of cloud computing implementation on improving modern management accounting methods in Jordanian commercial banks.

Challenges of applying financial technology in modern management accounting

Financial technology innovations, such as blockchain and cloud computing, have the potential to enhance the effectiveness of contemporary management accounting techniques. However, several organizational and structural challenges must be addressed before they can be effectively adopted in regulatory settings, particularly in the banking industry of developing nations.

The most significant of these difficulties is the high upfront implementation costs, which can be attributed to system acquisition, human resource training, or the creation of digital infrastructure (Alnasser, 2023). A lack of understanding of return-on-investment metrics and the uncertainty of short-term returns are two more reasons why many firms are hesitant to invest in these technologies.

A significant barrier to the successful deployment of cloud or decentralized solutions at the infrastructure level is the limited technological capacity of certain small and medium-sized banks, such as inadequate connectivity to data networks or the lack of cybersecurity systems (Gomber et al., 2018; Sultan, 2011).

Studies suggest implementing incremental digital transformation plans, encouraging an innovative culture, and obtaining sustained institutional and organizational support as ways to overcome these obstacles (Coyne & McMickle, 2017).

Research Model

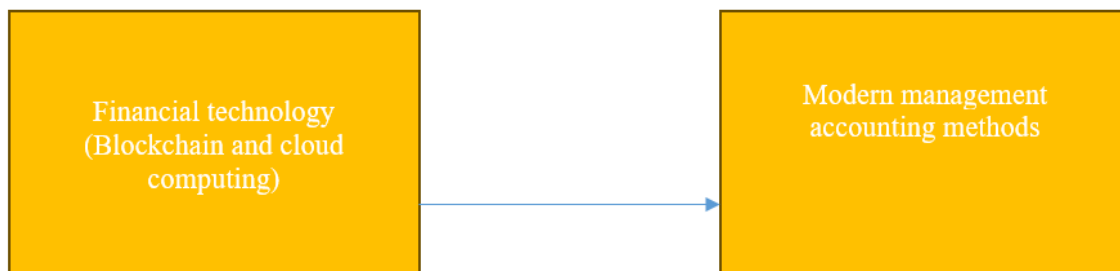


Figure (1): Research Model

METHODOLOGY

This paper aims to study the impact of applying financial technology in improving modern management accounting methods. In this study, statistical analysis was conducted using SPSS and included descriptive statistics (means, standard deviations, frequencies), reliability testing via Cronbach's Alpha, relationship analysis through Pearson's correlation coefficient, and hypothesis testing using simple and multiple linear regression.

The descriptive analytical methodology was used in this study because it is the most suitable for examining the connection between the use of financial technology, such as blockchain and cloud computing, and contemporary management accounting techniques. To achieve precise results, data were gathered from a sample of Jordanian commercial banks and statistically analyzed.

Study Community and Sample

As the study concentrates exclusively on Jordanian commercial banks, there is a significant gap in the existing body of literature that preconditioned the development of valuable insights on the role of financial technology applications, especially blockchain and cloud computing, in terms of evaluating its role in the improvement of modern accounting management techniques.

The sample population or community is associated with financial management, accounting, cost management and information technology units. The opinions of these persons will become critical in assessing the importance of financial technology in refining processes like target costing, activity-based costing (ABC) and the balanced scorecard (BSC) as they directly engage in execution and management of accounting procedures and computerized systems.

In that sense, the researcher distributed 169 questionnaires to get a representative sample of the perceived impact of blockchain and cloud computing on current management accounting practices in the Jordanian banking industry. It was sent as an electronic survey on a secure online platform so that the information retrieved is intact and the respondents can easily get access to it. Stratified random sampling method was used to ensure that every targeted department had fair representation. One of them is to collaborate with the financial and IT departments of participating banks to maximise the responses and secure the creation of valid and high-quality data.

As much as a questionnaire assists in determining the roles of financial technology in improving management accounting, it mainly focuses on the individual self-reported estimates of the participants involved as opposed to the actual measurement of operational or financial performance.

This is subjective criteria; objective measures like a leakage time, stability levels, or cost savings could be left out that would help in solidifying the usefulness of these technologies. It may be advisable that in their future studies operational measure of performance or financial statement study should be incorporated into the survey results to give a more balanced analysis.

Of the administered questionnaires, it was possible to collect 169 valid data representing 100 percent response rate of the sampled data. As shown in Table (1), the demographics of the respondents indicate their academic qualifications, job titles, years of experience in the market and professional certifications respectively, thus illustrating the wealth of experience and knowledge amongst the population of the study.

Table (1): Demographic Characteristics of the Participants

Variable / Description	n=169	Percentage
Academic Qualification		
Bachelor's Degree	56	33.1%
Master's Degree	88	52.1%
PhD	25	14.8%
Job Role		
Financial Manager	45	26.6%
Accountant	52	30.8%
Cost Management Specialist	38	22.5%
IT Specialist	34	20.1%
Years of Experience		
Less than 5 years	34	20.1%
5 to 10 years	68	40.2%
More than 10 years	67	39.6%
Professional Certifications		
None	48	28.4%
One certificate	70	41.4%
More than one certificate	51	30.2%
Total	169	100%

Through Table (1), it is possible to note that more than half of the respondents (52.1%) have a master degree, followed by the bachelor degree (33.1%) and the PhD degree holders (14.8%). Such high educational attainment is a sign that the sample entrants have significant academic training in subjects similar to financial technology and accounting.

Jobs role distribution indicates that there is good representation of financial managers (26.6%), accountants (30.8%), cost management specialists (22.5%) and IT specialists (20.1%) and both financial and technical angles are sufficiently covered.

The distribution of years of professional experience is uniform as 40.2% of the respondents have between 5 and 10 years of experience and 39.6 percent have more than 10 years' experience, showing that most of them have a mature knowledge of not only operations of the bank but also of the process involved in digital transformation.

Lastly, professional certification data shows a balanced interest in ongoing professional growth where 41.4 percent is having at least one certificate and 30.2 percent having more than one certificate.

This is in addition to the fact that the high educational status, the diversity and the range of professional environments and good working background builds a robust background in analyzing the perceived and practical implications of blockchain and cloud computing on contemporary management accounting practices.

Data collection sources

The questionnaire was used as the main tool for data collection, and it was developed based on previous studies and approved theoretical models (Using a five-point Likert scale), and designed with three axes.

Axis	Number of paragraphs	Dimensions
Demographic data	4	Gender, Qualification, Experience, Department
Financial technology	8	Blockchain, Cloud Computing
Management accounting methods	12	Target costing, ABC, Balanced scorecard

In compiling the materials in respect to this study, the research was leaning in the direction of the impact of financial technology carefully avoiding blockchain and cloud computing in enhancing modern management accounting approach among the Jordanian commercial banks. The primary and secondary data was used.

The secondary sources of data were represented by the vast literature research of academic sources related to the subject of financial technology implementations, blockchain systems, cloud computing models, and their application to the contemporary management accounting methods as target costing method, activity-based costing method (ABC), and the balanced scorecard (BSC).

Peer-reviewed journal articles, industry reports, conference proceedings, and authoritative texts that present both the theoretical background and the practical implementation of these technologies were part of the sources of this paper. The critical theoretical framework developed in the course of the review was based on the Technology Acceptance Model (TAM), which acted as the conceptual basis of the research and helped model the research tool.

The source of primary data comprised of a specially designed questionnaire targeted at gauging the influence that blockchain and cloud computing have in increasing the efficiency and effectiveness of the modern management accounting methods. The questionnaire was based on the prior theoretical frameworks and other empirical research to be valid and applicable to the situation in the banking industry.

The questionnaire survey was based on two sections:

- 1) Demographic Information Demographic Information Questions concerning the level of study of the participants, job title, years of experience in the workplace and professional certifications. This part brought some context on the professional background of participants, which made it possible to better understand their views.
- 2) Study Variables: Questions to answer this part were devised in order to gauge the perception of participants on the impact of blockchain and cloud computing on contemporary management accounting practices. The questions were focused on three main techniques that include target costing, activity-based costing (ABC), and the balanced scorecard (BSC). The items were 20 in number and were allocated along these dimensions to obtain particular insights as to how financial technology contributes to decision making, cost management and performance measure.

The five-point Likert scale was characterized as strongly agree (5), agree (4), neutral (3), disagree (2), strongly disagree (1) whereby, the opinions of the participants could be significantly assessed of each point.

Table (2): Levels of Relative Importance Based on Arithmetic Mean Scores

Relative Importance Level	Arithmetic Mean Limits
Low	1.00 to less than 2.33
Medium	2.33 to less than 3.66
High	3.66 to 5.00

This data collection approach ensured the integration of both conceptual insights from the literature and empirical evidence from industry professionals, creating a robust foundation for statistical analysis and hypothesis testing.

Study instrument reliability test

To measure the integrity of the study instrument, the instrument reliability measure was done to determine how consistent and coherent the responses on each item of the questionnaire were in terms of data integrity before subjecting the data to statistical analysis. This was carried out using Cronbachs Alpha Coefficient given that it is the most commonly known internal consistency measure.

The values of Cronbach Alpha are between 0 and 1, values exceeding 0.70 reflect reliability of the scale. The higher value means that the items represent in each axis are well related to each other and that they measure the targeted construct.

This was the case in the present study where the three axes of the questionnaire namely, demographic data, financial technology and management accounting methods were tested as separate. As Table (3) indicates, the results revealed that all the axes attained alpha values, which were above the recommended 0.70 stipulation, thus strengthening the idea that the questionnaire was extremely reliable.

Table (3): Cronbach's Alpha Coefficient Values for the Study Tool

No.	Axis / Dimension	Number of Items	Alpha Value
1	Demographic Data (<i>Gender, Qualification, Experience, Department</i>)	4	0.88
2	Financial Technology (<i>Blockchain, Cloud Computing</i>)	8	0.92
3	Management Accounting Methods (<i>Target Costing, ABC, Balanced Scorecard</i>)	12	0.91

The big alpha value of all the three axes make it clear that there was internal consistency of the questionnaire items and thus the analyses done in obtaining the correlation coefficient, regression, and hypothesis test in this study are valuable.

DATA ANALYSIS AND HYPOTHESIS TESTING

Description of Study Variables

Standard deviations and arithmetic averages were used to test perceived significance and adoption of the study variables namely: financial technology (including its two elements: blockchain and cloud computing), and modern management accounting methods in the framework of Jordanian commercial banks. This analysis was intended to determine the extent to which the respondents concurred on how such variables contributed to optimal accuracy, transparency, cost management, and efficiency of the decision making process of the operations of the banks. Table (4): Description of Study Variables.

Table (4): Description of Study Variables

No.	Variable / Dimension	Arithmetic Mean	Standard Deviation	Relative Importance
1	Financial Technology	3.953	0.621	High
2	Blockchain	3.960	0.615	High
3	Cloud Computing	3.945	0.628	High
4	Modern Management Accounting Methods	3.932	0.632	High

Table (4) results reveal that the concentration of respondents indicates that both the financial technology and the modern management accounting approaches are regarded as most imperative in improving the effectiveness of banking and decision making. In a given field of financial technology, blockchain had the largest mean value (3.960) with the lowest degree of standard deviation (0.615), indicating that there was a firm consensus on its ability to enhance transparency, integrity of data, and efficiency in operations. The next in line was cloud computing (mean = 3.945, SD = 0.628), which can be attributed to its popularity in terms of flexibility, scalability, and real-time availability of the accounting information.

Modern management accounting methods (mean = 3.932, SD = 0.632) slotted in the same, i.e., "High" importance range highlighting its centrality in the carrying out of strategic cost control, proper cost apportioning and the overall performance measurement that include target costing, activity-based costing (ABC) and the balanced scorecard (BSC). The findings allied reveal the fact that the combination of financial technology with contemporary approaches towards management accounting is considered as a key force facilitating the advancement of both operational and strategic performance in the Jordanian commercial banks.

Hypothesis Test Results

The formulation of hypotheses was done with an aim of testing how blockchain and cloud computing, which are some of the most important financial technology instruments, help in boosting contemporary management accounting practices in the Jordanian commercial banks. The two main hypotheses were submitted through the exercise of linear

regression, in order to establish the direction and magnitude, as well as correlating these associations statistically.

There were two main research hypotheses:

H1: There is a statistically significant impact of blockchain implementation on improving modern management accounting methods in Jordanian commercial banks.

H2: There is a statistically significant impact of cloud computing implementation on improving modern management accounting methods in Jordanian commercial banks.

Table (5): Relationship and Impact of Financial Technology on Modern Management Accounting Methods

Independent Variable	Coefficient (B)	Standard Error	Beta (β)	T-Statistic	Sig. T	VIF	Tolerance
Blockchain	0.287	0.041	0.284	7.000	0.000	4.190	0.273
Cloud Computing	0.276	0.043	0.271	6.419	0.000	3.950	0.252

Model Summary

- $R = 0.835$
- $R^2 = 0.697$
- $F = 189.742$
- **Sig. F = 0.000**

According to the findings in Table (5), it was found that blockchain and cloud computing result in a statistically significant positive impact on contemporary approaches to management accounting in Jordanian commercial banks. The T-statistic was found to be greatest in the case of Blockchain (7.000) with the coefficient (B) being 0.287, meaning that it had a considerable impact on enhancing accuracy of accounting, transparency, and cost-effectiveness of accounting. Cloud computing came right after with T-statistic of 6.419 and a coefficient (B) of 0.276, which show that cloud computing helped increase accessibility, scale abilities, and real-time integration of accounting information.

This predictive model showed that the regression model was robust, estimating the R-value of 0.835 and explaining 69.7 per cent of the variance in the modern management accounting methods ($R^2 = 0.697$). The F-statistic value 189.742 ($p = 0.000$) shows a great credibility of the model and existence of a strong influence of the two variables together.

The results justify the rejection of H0 and H0 of H1 and H2 to conclude that the choice of blockchain and cloud computing enhances the contemporary management accounting practices in the banking industry of Jordan to a great extent. The findings point out that a combination of financial technology and target costing, activity-based costing (ABC), and the balanced scorecard (BSC) systems supports the decision making, cost control and performance measurement strategies.

Practically, the findings indicate that investing in blockchain systems, to enhance the accuracy, security and transparency of the processes, as well as investing in cloud computing infrastructures to enhance flexibility, accessibility, and collaboration, should be among the priorities of Jordanian commercial banks.

CONCLUSION

The given research study discusses the role played by the financial technology, embodied by the blockchain and cloud computing, in enhancing the current management accounting procedures in the Jordanian commercial banks. The research reveals that in the banking industry, it is also important to embrace newer financial technology applications that can improve the precision, transparency and effectiveness of management accounting systems like the target costing, activity-based costing (ABC) and the balanced scorecard (BSC).

In view of the in-depth analysis that has been drawn, the following strategies will be used in instilling financial technology in management accounting practices in Jordanian commercial banks:

- The implementation of financial technology contributes to the increased efficiency of contemporary management accounting structures by a large margin, which proves that technological innovation should be integrated into accounting systems.
- Blockchain technology is also very important because it enhances transparency, security and traceability of data to make accounting information more reliable in making strategic decisions.
- By enhancing flexibility, access and collaboration of accounting processes, cloud computing facilitates the real-time sharing of data and allows strategic performance measurement and control of costs as well.
- The integration of financial technology and contemporary management accounting practice is a synergistic activity that enhances the strength of the operation, strategic planning and, long-term competitiveness.

Based on these findings it is recommended that the following best courses of action is suggested to ensure that the maximum benefit of financial technology is applied in management accounting:

- To manage the integrity of data, improve the transparency of the transaction, and minimise occurrence of accounting errors, it would be worth investing into sound blockchain infrastructures.
- Extend the capacity of the cloud computing system to enhance the relationship between several departments, access the accounting systems remotely, and facilitate advanced analysis that works to make decisions.

- Introduce continuous supervision of accounting and financial personnel to enhance their competence in the utilization of accounting tools which are technologically driven.
- Embed blockchain and cloud computing solutions and integrative ways of strategic management accounting streams to bring about continuity of enhanced operational and strategic performance.

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