

The Effectiveness of Using Value Chain Technology and its Impact on Improving the Quality of Accounting Information Applied to a sample in government and private banks

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Abstract: This research addresses the effectiveness of using the value chain technique and its impact on improving the quality of accounting information in institutions. The quality of accounting information is a major influencing factor in strategic decision-making, as accurate and reliable information contributes to enhancing the overall performance of the institution. The research provides an analysis of how to improve the flow of information through the application of the value chain, enabling institutions to identify and enhance value-adding activities. The research also demonstrates the importance of this technique in increasing transparency and building trust among stakeholders. Finally, the research offers strategic recommendations for institutions on how to maximize the benefits of the value chain technique to improve the quality of accounting information and achieve better financial performance.

Key words: effectiveness, value chain, information quality, accounting.



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Introduction:

The quality of accounting information is one of the fundamental factors that influence decision-making in institutions, as accurate and reliable information contributes to guiding business strategies and enhancing performance efficiency. In this context, the value chain technique emerges as an effective tool for analysing and improving the flow of information within institutions. This technique aims to identify activities that add value to the products or services offered, allowing organisations to improve specific aspects that affect the quality of accounting information. Understanding the impact of the value chain on information quality can contribute to achieving better financial results and increasing shareholder satisfaction.

➤ The importance of research

1. Improving managerial decisions: High-quality accounting information is considered a fundamental pillar for making sound strategic decisions within the organisation.

2. Increasing transparency: The use of value chain technology allows organisations to achieve greater transparency in presenting financial information, thereby enhancing trust between shareholders and customers.
 3. Achieving operational efficiency through activity analysis and performance enhancement
 4. The focus on innovation using the value chain
 5. Guiding accounting policies: The research findings may contribute to the development and implementation of more efficient accounting policies based on a comprehensive understanding of information management techniques.
- Research objectives
1. Analysing the effectiveness of the value chain: Studying how the application of value chain technology affects the quality of accounting information within organisations.
 2. Identifying improvement practices: Investigating activities that can be improved in the value chain to enhance the quality of financial information.
 3. Evaluating Institutional Performance: Measuring the relationship between the quality of accounting information and the success of the financial performance of institutions.
 4. Providing strategic recommendations: Developing a set of recommendations that help organisations enhance information management using value chain technology.
 5. Exploring challenges: Analysing the challenges faced by organisations when implementing value chain technology and how to overcome them to maximise the benefits of improving accounting information.

Chapter One

Theoretical framework

The value chain is considered one of the important new ideas in management and is also one of the main concepts in strategic cost management as a modern approach to management accounting. Given its significance, we will study it starting with its definition, presenting its general model, and analysing it in the following points:

Definition of Value Chain Technology It can be said that this concept represents a connected set of value creation activities, as it is a method for understanding activities that extend to include basic raw materials and even the final consumer. (Abdel Aal and El-Sawafiri, 2002, page 91), where the value chain is defined as the method or approach or analysis that requires studying all institutional activities, whether internal or external, in a manner based on organisation and arrangement according to the organisational structure, which relies on selecting and utilising competent resources in a way that benefits the institution. (Youssef, 2009, p. 4) Michael Porter provided a general model of the value chain, which shows the margin achieved by the organisation, representing the difference between the revenue generated from activities and the cost of performing these activities, along with a list of nine basic operations: five "primary" (inbound logistics, operations, outbound logistics, marketing and sales, services) and four support activities (procurement, technology development, human resource management, firm infrastructure) (BOUQUIN, 2011, p. 209).

Porter attempts to answer the question: What are the value-generating activities through the value chain? And thus, he considers that the latter are the activities that have a direct relationship with the production of the product up to the stage of its delivery to the customer and the subsequent services. These activities are classified as primary activities. As for the supporting activities, as their name indicates, they are the activities that support and assist the primary activities; otherwise, the latter would lose their effectiveness. (Kafnouch, 2007, page 80) It can also be

defined as the sequential and successive activities in business organisations through which value is added to the products offered to customers, whether they are goods or services. The value chain is an effective tool for the optimal use of limited resources and includes all activities from the point of obtaining supplies from suppliers to the final use of the product by the customer and its disposal. In other words, it is a series of functions that add value to the customer through the products they receive. (Horngren et al, 2012, 28)) Any industrial institution must deal with suppliers, distributors, and customers, so the value system will consist of the value chain for each of them. The value chain generally refers to business functions according to the added benefits to the products or services in the organisation and in each of its activities. The effective management of these activities heavily relies on the quality of information that integrates the institutions involved in the value chain. Therefore, in order for the institution to draw its plan based on competitive advantage—cost reduction—it is necessary to analyse the value chain into activities. The importance of this analysis stems from the fact that activities are the main cause of costs. Thus, understanding the nature and cause of the activity is the critical stage for cost reduction. (Ali, 2008, page 177)

For the purposes of this research, we first address the field of value chain analysis and then the subject of this analysis. The field of value chain analysis touches on two main elements: the industry value chain analysis and the internal value chain analysis of the organisation. This chain refers to various groups of activities to create value, starting from the basic raw materials to the point of disposal of the final product by the end consumers. This figure illustrates the various institutions involved in different parts of the chain. Understanding the industrial value chain is important for comprehending the strategically significant activities. Analysing the value chain into its strategically important activities is essential to ensure the successful implementation of cost leadership and product differentiation strategies. It has become important to identify the complex and interrelated connections between activities, whether within or outside the organisation. (Nour, Al-Sawafiri, and Shahata, 2002/2003, pages 23-24)

The main benefit of identifying separate activities in the industry's value chain lies in directing the research subject institution to focus on activities performed by competitors in different ways, as these activities represent fertile ground for cost reduction if the institution's internal value chain is analysed and recognised, and then improved to become a centre of strength compared to other institutions operating in the same industry. (Ali, 2008, p. 178)

Justifications and motivations for adopting the value chain analysis approach

Value chain analysis is important in the era of rapid globalisation for the following reasons: (Kaplinsky, Morris, 2014)

With the increasing division of labour and the global expansion of production, competitiveness has become increasingly important, as value chain analysis plays a key role in understanding the need and scope for competitiveness by analysing and identifying core competencies that may require the organisation to outsource those functions when it does not possess distinctive competencies. Where planning the flow of inputs - goods and services in the production chain allows each organisation to determine the behaviour of those who play an important role in its success, in some cases where the organisation does not absorb much or most of the value, its efforts for promotion and achieving efficiency will have little impact.

Efficiency in production is a necessary condition for successfully penetrating global markets, where the importance of value chain analysis lies in its ability to understand the advantages and disadvantages of companies specialised in production, find the necessary solutions to avoid flaws, and offer competitive products both locally and internationally, amidst competition among producers to provide the best quality products at the lowest price.

Maximising the benefits of globalisation The importance of value chain analysis is that it helps explain the distribution of gains for those participating in the global economy, making it easier to identify policies that can be implemented to enable individual producers and countries to increase their share of these gains, which became a major concern at the beginning of the millennium and have attracted the attention of a wide range of parties.

➤ **Internal value chain**

The internal value chain is considered a set of activities that add value to the product or service offered by the economic institution (Abdul Latif, 2014, page 43).

- **Research and development:** This refers to the collection and experimentation of ideas for new products, services, or processes;
- **Design:** It refers to the detailed and engineering planning of new products, services, or processes.
- **Production:** It refers to the process of physically transforming ideas and designs into reality in the form of tangible products or services provided to customers;
- **Marketing:** It refers to addressing (communicating with) individuals or groups for the purpose of:
 - Informing them about the characteristics of the new products and services offered by the institution;
 - Encouraging them to purchase these products or services.
- **Distribution:** This refers to the mechanism by which products or services will be delivered through various distribution channels;
- **Customer service:** These are the additional services provided by the institution to the customer after the sale, such as warranty, repair, maintenance, and free calls to enquire about operation, etc. (Hussein, Advanced Managerial Accounting, 2002, pages 21-22)

• **The topic of value chain analysis**

The concept of the value chain is based on two main pillars:

- Identifying value-adding activities;
- Identifying costs that add value.

Value-adding activities and non-value-adding activities

The activities of the organisation are classified into two types:

- **Value-adding activities:** These are activities that, if eliminated, would reduce the long-term cost of the service provided to customers by the product. In other words, a value-adding activity is one that customers are willing to pay for. For example, the distribution of products is a value-adding activity, as well as the acquisition of materials and main manufacturing activities.
- **Non-value-adding activities:** These are activities that, if eliminated, would not result in a reduction in cost and may be unnecessary and can be dispensed with. (Al-Fadl, Noor, and Al-Rawi, 2007, p. 16)

Organisations try to identify and eliminate non-value-adding activities in their value chain. Value-adding activities increase the customer's preference for the product or service, while non-value-adding activities do not enhance the product's preference. Therefore, when an organisation consumes resources that do not add value, it can reduce its costs by eliminating the activity that

consumes these resources, without changing the product's preference. (Meggitt, Haka, Williams, & Peat, 2006, p. 980)

Quality of accounting information: Accounting information is characterised by quality if it possesses a set of attributes that, in turn, provide the necessary values and benefits for decision-making.

In order to achieve the best results under the surrounding conditions, it is necessary to provide high-quality accounting information regarding the activities of business organisations. The main objective of financial data is to present relevant information about the financial and operational aspects of business organisations to assist decision-makers in making important and sound financial decisions. Financial data capable of achieving this objective must be of good and effective quality. Therefore, the quality of accounting information means "the credibility of this information and the benefits it provides to users, free from distortion and deception, and prepared in light of a set of legal, regulatory, professional, and technical standards, which helps achieve the intended purpose of its use." (18, Hammad, 2005)

In order to achieve the quality of accounting information, the following standards must be met: (alsalim & amin, Youssef, 2018: 10)

1. **Legal standards:** Professional institutions in many countries around the world strive to establish standards for the quality of financial reports and adhere to them by enacting clear legislations and regulations to organise the work of these institutions and provide an effective organisational structure that regulates the aspects of the organization's performance according to legal requirements that obligate organisations to disclose their performance appropriately.
2. **Control Standards:** Control is viewed as one of the components of the management process that forms the foundation relied upon by both the board of directors and investors. The success of this component depends on the presence of effective control that defines the role of audit committees and financial and administrative control bodies in organising financial transactions, as well as the role of shareholders and related parties in applying governance rules through control bodies, where their policies and procedures are implemented effectively. It is clear that control standards play an important role in applying governance rules, as control standards focus on examining and evaluating compliance with policies and procedures that facilitate resource allocation to improve organisational efficiency and increase the confidence of financial data users.
3. **Technical standards:** The availability of technical standards leads to the development of the concept of information quality, which in turn is reflected in the quality of financial reports and increases the confidence of shareholders, investors, and stakeholders in the organisation, resulting in increased investment. Consequently, the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) have directed many standards that contribute to providing and monitoring the qualitative characteristics of the required financial accounting information. It has become clear that the existence of standards for controlling the quality of financial reports has a significant impact on developing and activating the role of governance regulators through the establishment of structures used to organise the administrative process, enacting laws regulating the work of organisations, ensuring shareholder rights, and clarifying the importance of oversight and the role of the external auditor. A control system that demonstrates the need for accountability is likely to increase investor confidence in the organization's management.

In other words, accounting and auditing are among the scientific and professional fields most affected by governance principles and procedures. Moreover, governance principles and procedures play a key role in the development of the accounting and auditing profession through the issuance of legislation and laws regulating auditing processes.

4. Professional standards: Professional accounting bodies and councils are concerned with establishing accounting standards and controls to regulate the performance of the accounting process, thereby highlighting the concept of managerial accountability from the owners to verify their investments. This, in turn, has led to the necessity of preparing financial reports that possess a good level of integrity and honesty, in line with the implementation of the accountability concept and the organisational governance approach that requires transparency and information disclosure, and supports the process of communication and cooperation between owners and management, leading to the success of the organisation. (alsalim & amin, 2016: 32)

Chapter Two

The practical aspect

Research methodology:

The research is based on the descriptive and analytical approach, as it is the most suitable method for the research objectives, questions, and hypotheses.

Research community:

The research community consists of all accountants, auditors, managers, and system experts in government and private banks in Iraq for the year 2024-2025 AD.

Research sample:

The research sample consisted of (70) accountants, auditors, managers, and system experts in government and private banks in Iraq for the year 2024-2025 AD. They were selected randomly. The following table shows the distribution of the sample according to the research variables:

Table (1) Distribution of the sample according to the variable of bank type

Variable	Categories	Count	Percentage
Type of bank	Governmental	33	47.1%
	Private	37	52.9%
	Total	70	100

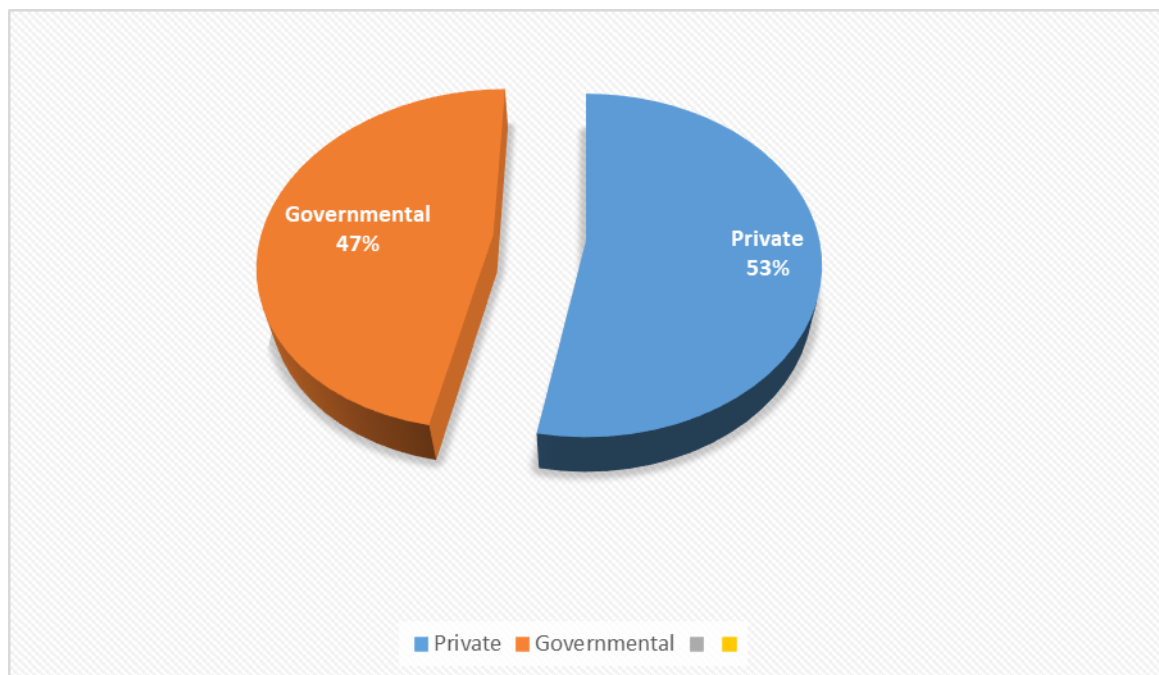


Figure (1) Distribution of the study sample according to the variable of bank type

Research tool:

The questionnaire was used as a tool to collect information and data related to this research, as it suits the nature, objectives, and methodology of the study. The questionnaire was prepared after reviewing the literature and previous studies related to the research topic. Based on these sources, the questionnaire was constructed according to the following steps:

➤ The initial version of the questionnaire:

The initial form of the questionnaire consisted of a data form that included the research variable (type of bank) and the questionnaire items, which numbered (20) items distributed within two axes:

- The first axis: Value chain technology, which includes 10 items.
- The second axis: The quality of accounting information, which includes 10 items.
- **Verification of the questionnaire's validity:**

We verified the validity of the questionnaire using two methods:

A-Content validity:

The initial version of the questionnaire, consisting of (20) items, was reviewed by a group of judges, who were asked to provide their opinions and suggest necessary comments through:

- Linguistic formulation of the items.
- The extent of the appropriateness between the items and the content of the research subject.
- The extent of their relevance to the survey axes.

The esteemed reviewers expressed their opinions, and the wording of some items was linguistically revised.

B-Structural Validity:

The validity underlying the construction of the specific questionnaire was verified by studying its internal consistency and calculating the correlation coefficients between the scores for each item of the questionnaire and the score of its corresponding axis in the questionnaire. This was done after applying it to a pilot sample consisting of 30 accountants, auditors, managers, and system experts who are outside the main research sample.

Table (2) Data on the scores of the first axis item (Value Chain Technology) with the total score of the axis

Paragraph	Correlation Coefficient	Paragraph	Correlation Coefficient
1	0.746	6	0.810
2	0.821	7	0.764
3	0.398	8	0.663
4	0.639	9	0.824
5	0.761	10	0.559

It appears from the above that the correlation coefficients of the item scores with the scores of their counterparts in the respective axes were all statistically significant at the (0.01 or 0.05) level, with the values of these coefficients ranging between (0.398-0.824).

Table (3) Correlation coefficients of the second axis item scores (Quality of Accounting Information) with the overall axis score

Paragraph	Correlation Coefficient	Paragraph	Correlation Coefficient
1	*0.374	6	0.817
2	0.715	7	0.789
3	0.587	8	0.749
4	0.736	9	0.820
5	0.724	10	0.803

It appears from the above that the coefficients related to the correlation of scores in the items with the scores of their counterparts in the relevant axes were all statistically significant at the (0.01 or 0.05) level, and the values of these coefficients ranged between (0.374-0.820). Therefore, the questionnaire is characterised by good indicators of its structural validity.

➤ **Verification of the questionnaire's reliability:**

The reliability of the questionnaire was verified by calculating the internal consistency reliability using Cronbach's alpha:

The internal consistency reliability for each axis in the questionnaire as a whole was calculated using Cronbach's alpha. The following table shows the internal consistency coefficients using the (Cronbach's alpha) coefficient:

Table (4) Values of the Internal Consistency Reliability Coefficient for the Questionnaire

Axis	Number of items	Cronbach's alpha value
Axis 1: Value Chain Technology	10	0.893
Axis 2: Quality of Accounting Information	10	0.902

It is evident from the previous table that the reliability coefficient values using Cronbach's alpha have reached (0.893) for both axes (0.902).

Therefore, the questionnaire is characterised by a high degree of reliability. Therefore, the questionnaire is characterised by high validity and reliability indicators, and thus the questionnaire is ready to be applied to the main research sample due to the availability of high indicators of its validity and reliability.

➤ **The final version of the questionnaire:**

The final version of the questionnaire consisted of a data form that included the research variables (type of bank, number of years of experience) and the questionnaire items, totalling (20) items distributed as follows:

Table (5) The final form of the questionnaire's axes and items

Axis	Number of items
Axis 1: Value Chain Technology	10
Axis 2: Quality of Accounting Information	10

➤ **Survey correction:**

The responses on the questionnaire were determined according to the Likert scale, with the following scores corresponding to (5, 4, 3, 2, 1) respectively.

Research procedures:

I followed the following procedures to complete the research:

- Returning to the research literature from theoretical references and previous studies related to the research topic.
- Defining the research community and its sample consisting of (70) accountants, auditors, managers, and system experts in government and private banks in Iraq for the year 2024-2025.
- Preparing the research tool.
- Presentation of the questionnaire.
- Implementing the survey
- Applying the questionnaire to the main sample of the research.
- Extracting the results using appropriate statistical methods.
- Writing recommendations and suggestions in light of the research findings.

Chapter Three

Discussion of the results

Question 1: What is the effectiveness of using the value chain technique from the perspective of accountants, auditors, managers, and system experts in government and private banks in Iraq?

To answer this question, the arithmetic means, standard deviations, agreement levels, and rankings of the sample members' responses regarding the first axis (the effectiveness of using the value chain technique) in the questionnaire were calculated. To determine the level of agreement, the length of the five-point Likert scale cells was first determined by calculating the range of values ($5 - 1 = 4$) and then dividing the range by the highest value on the scale, resulting in a cell length of ($4 \div 5 = 0.80$). This value was then added to the lowest value on the scale (which is 1) to determine the upper limit for each cell. Thus, the lengths of the scale cells were determined as follows:

Table (6) Length of Likert scale cells and their corresponding agreement levels

Degree of agreement	values
Very low	1-1.79
Low	1.80-2.59
Medium	2.60-3.39
High	3.40-4.19
Very high	4.20-5

Table (7) shows the means, standard deviations, and the degree of agreement on the first axis (the effectiveness of using the value chain technique) from the questionnaire.

	Item	Mean	Standard Deviation	Approval Rating	Rank
1	The bank relies on value chain analysis to evaluate internal activities	4.31	0.553	9	Very high
2	The value chain contributes to improving the efficiency of internal operations.	4.40	0.493	5	Very high
3	The value chain is used to identify	4.31	0.468	8	Very

	activities that add value to customers.				high
4	The bank relies on accurate accounting data in analysing the value chain	4.59	0.496	1	Very high
5	The outputs of the value chain are linked to management accounting systems.	4.21	0.413	10	Very high
6	The bank applies technological tools to support the value chain.	4.44	0.500	2	Very high
7	The cost of activities within the value chain is analysed periodically.	4.41	0.625	4	Very high
8	The value chain provides information that helps in making strategic decisions.	4.40	0.600	6	Very high
9	There is sufficient awareness among employees about the importance of value chain activities	4.36	0.723	7	Very high
10	There is administrative support for implementing value chain technology activities in the company.	4.43	0.714	3	Very high
	Axis 1: Effectiveness of Using Value Chain Technology	4.39	0.270		Very high

From the above, the approval rating for the first axis (the effectiveness of using value chain technology) was very high with an average of (4.39), meaning **that the effectiveness of using value chain technology from the perspective of accountants, auditors, managers, and system experts in public and private banks in Iraq was very high.** Item 4 (the bank relies on accurate accounting data in value chain analysis) ranked first with a very high approval rating and an average of (4.59), while item 5 (the outputs of the value chain are linked to management accounting systems) ranked last with a very high approval rating and an average of (4.21).

The effectiveness of using value chain technology in Iraqi banks, both public and private, reflects a growing awareness of the importance of improving operational efficiency and achieving a sustainable competitive advantage. Evaluation results from accountants, auditors, managers, and systems experts showed that this technology delivers tangible benefits, which explains its very high level of effectiveness. Relying on accurate accounting data in value chain analysis appears to be a pivotal element in supporting decision-making, with this item topping the evaluation with an average score of 4.59, indicating a high awareness of the importance of data accuracy in enhancing the chain's effectiveness. Conversely, despite the critical importance of linking value chain outputs to management accounting systems, this aspect received the lowest relative rating (4.21), indicating a slight gap in integration between accounting and management analysis. This may be due to technical challenges or a lack of coordination between banking system units, but the overall high rating indicates a shared awareness of the importance of this technology in improving banking performance and developing analysis and planning tools.

The second question: What is the level of quality of accounting information from the perspective of accountants, auditors, managers, and system experts in government and private banks in Iraq?

To answer this question, the arithmetic means, standard deviations, and agreement levels were calculated. The ranking of the sample members' responses to the second axis (Quality of Accounting Information) from the questionnaire is as follows:

Table (8) shows the means, standard deviations, and agreement levels for the second axis (Quality of Accounting Information) from the questionnaire.

	Item	Mean	Standard Deviation	Approval Rating	Rank
1	The accounting information provided by the bank is accurate and reliable.	4.17	.932	9	high
2	Accounting information is provided in a timely manner..	4.31	.910	5	Very high
3	There is integration between value chain information and accounting	3.84	.927	10	
4	Accounting information is comparable across different time periods, which supports its quality.	4.40	.730	2	Very high
5	Accounting information is used in making strategic decisions. By using value chain techniques	4.34	.759	4	Very high
6	Accounting information systems support the process of analysing financial performance.	4.26	.774	7	Very high
7	Accounting information reflects the actual reality of financial performance	4.46	.582	1	Very high
8	Accounting information is characterised by clarity and ease of understanding.	4.21	.740	8	Very high
9	The quality of accounting information is reviewed periodically.	4.27	.658	6	Very high
10	Accounting information contributes to reducing accounting risks	4.39	.666	3	Very high
10		4.36	.483		Very high
	Axis 2: Quality of Accounting Information				Very high

From the above, we find that the degree of agreement on the second axis (the quality of accounting information) was very high with a mean of (4.36), **meaning that the level of quality of accounting information, from the perspective of accountants, auditors, managers, and system experts in public and private banks in Iraq, was very high.** Item 7 (accounting information reflects the actual reality of financial performance) ranked first with a very high degree of agreement and a mean of (4.46), while item 3 (there is integration between value chain information and accounting) ranked last with a high degree of agreement and a mean of (3.84).

The high quality of accounting information in Iraqi banks, as perceived by accountants, auditors, managers, and systems experts, reflects a marked improvement in the accuracy and reliability of the data used to support financial and administrative activities. The item "Accounting information reflects the actual financial performance" received the highest rating, with an average score of 4.46. This indicates that accounting data has become an accurate reflection of the bank's performance, enhancing decision-makers' confidence in them. This reflects clear efforts to develop accounting and control systems to ensure that figures are consistent with practical reality. On the other hand, the item "There is integration between value chain information and accounting" showed the lowest average score (3.84), indicating that this integration still needs

further development, despite achieving a high level of agreement. There are likely technical or organizational gaps that limit the full integration of value data and accounting analysis, which may hinder the optimal use of information. Nevertheless, the overall high rating confirms the presence of a robust information infrastructure that enables banks to achieve a high level of efficiency in performance and planning.

Presentation of the research hypotheses results, discussion, and interpretation:
The first hypothesis: There is no statistically significant effect of using the value chain technique on the quality of accounting information from the perspective of accountants, auditors, managers, and system experts in public and private banks in Iraq.
 The researcher used simple linear regression analysis to test this hypothesis, as this hypothesis examines the effect of the independent variable (value chain technique) on the dependent variable (quality of accounting information). The results were as follows:

Table (9) Correlation coefficient and coefficient of determination of the impact of using value chain technology on the quality of accounting information

Model	Correlation Coefficient	Coefficient of Determination	Adjusted Coefficient of Determination	Standard Error of Estimate
1	0.714	0.509	0.502	0.341

From the above, we find that the correlation coefficient between the independent variable (Value Chain Technique) and the dependent variable (Quality of Accounting Information) is (0.714), indicating a strong direct correlation between them. Additionally, the coefficient of determination is (0.509), meaning that the independent variable (Value Chain Technique) explains approximately (50.9%) of the changes occurring in the dependent variable (Quality of Accounting Information). The following table shows the results of the ANOVA test for the simple linear regression model as follows:

Table (10) Results of the ANOVA for the simple linear regression model to study the effect of using value chain technology on the quality of accounting information

Model		Unstandardized Coefficients		Standardized Coefficients	T-Value	P-Value
		B-Value	Standard Error	Beta Value		
1	Constant	1.234	0.667		2.851	0.025
	Using Value Chain Technique	1.274	0.152	0.714	8.400	0.000

So, there is a statistically significant effect of using the value chain technique on the quality of accounting information, as the significance levels related to it were less than 0.05. The relationship between the two variables can be explained by the following equation:
Quality of accounting information = 1.234 + 1.274 × use of value chain technique
 It is evident from the previous equation that whenever the use of the value chain technique changes by one unit, the quality of accounting information will change by (2.508) in the same direction.

Based on the above, we reject the null hypothesis and accept the alternative hypothesis, which states that there is a statistically significant effect of using the value chain technique

on the quality of accounting information from the perspective of accountants, auditors, managers, and system experts in public and private banks in Iraq.

Thus, it has been shown that there is a statistically significant effect of using value chain technology on the quality of accounting information, indicating that the application of this technology effectively contributes to improving the quality of information relied upon by banks in their financial and administrative decisions. This effect reflects a close relationship between value chain analysis and the provision of more accurate and transparent accounting information, which helps in improving control and performance evaluation. From the perspective of accountants, auditors, managers, and system experts, the use of the value chain contributes to enhancing the integration between various accounting processes and provides a comprehensive view of each activity's contribution to value creation. It also helps reduce information gaps and achieve harmony between the outputs of different systems. This positive impact enhances banks' ability to engage in strategic planning and make financial decisions based on reliable data. The introduction of this technology is likely to have led to the development of data collection and analysis systems, which directly reflected on the quality of information. The presence of statistical significance underscores the importance of expanding the application of this technology to improve informational efficiency in the Iraqi banking environment.

Second Hypothesis: There are no statistically significant differences between the average scores of sample members regarding the use of value chain technology from the perspective of accountants, auditors, managers, and systems experts in public and private banks in Iraq, depending on the bank type variable (public, private).

To answer this question, the researcher used an independent samples t-test to examine the significance of the differences between the average scores of sample members on the first axis (value chain technology) of the questionnaire, depending on the bank type variable. The results were as shown in the following table.

Table (12) Results of the t-test to examine the significance of the difference between the average scores of sample members on the first axis (value chain technology) of the questionnaire, depending on the bank type variable.

Bank Type	Number	Arithmetic Mean	Standard Deviation	T-Value	Degrees of Freedom	Percentage Value	Decision
Governmental	33	4.25	.194	4.352	68	0.000	Significant
Private	37	4.51	.276				

It is clear from the previous table that the T value was statistically significant, as the p-value was less than the default significance level of 0.05. Therefore, there are statistically significant differences between the mean scores of the sample members regarding the use of the value chain technique from the perspective of accountants, auditors, managers, and system experts in public and private banks in Iraq, according to the variable of bank type (public or private). The results showed that the differences were in favour of private banks.

It was found that there are statistically significant differences in the opinions of the sample members regarding the use of the value chain technique according to the type of bank, indicating that private banks rely on this technique to a greater extent compared to government banks. This reflects a difference in the levels of adoption and practical application of modern technologies, as private banks tend to adopt advanced managerial and technical tools to enhance their efficiency and increase their competitiveness. This disparity may be due to the flexibility of private banks and their quick response to technological changes, in addition to their pursuit of achieving the highest levels of operational and financial efficiency. In contrast, government banks may face

administrative or regulatory challenges that hinder the effective expansion of the value chain application, such as bureaucracy or weak investment in information technology. The differences in favour of private banks also reflect their preference for more integrated systems that link value and accounting, which improves the quality of information and supports decision-making. This statistical difference is an important indicator for decision-makers in government banks to adopt policies that support the use of this technology, enhancing their competitiveness in a changing banking environment.

The third hypothesis: There are no statistically significant differences between the average scores of the sample members regarding the quality of accounting information from the perspective of accountants, auditors, managers, and system experts in government and private banks in Iraq according to the variable of bank type (government, private).

To answer this question, the researcher used an independent samples t-test to study the significance of the differences between the mean scores of the sample members on the second axis (Quality of Accounting Information) from the questionnaire according to the variable of the type of bank. The results were as shown in the following table.

Table (13) Results of the T-test for the significance of the difference between the means of the sample members' scores on the second axis (Quality of Accounting Information) from the questionnaire according to the variable of bank type.

Bank Type	Number	Arithmetic Mean	Standard Deviation	T-Value	Degrees of Freedom	Percentage Value	Decision
Governmental	33	4.09	0.292	5.083	68	0.000	Significant
Private	37	4.59	0.498				

It is evident from the previous table that the t-value was statistically significant as the p-value was less than the default significance level of 0.05, meaning: there are statistically significant differences between the mean scores of the sample members regarding the quality of accounting information from the perspective of accountants, auditors, managers, and system experts in government and private banks in Iraq according to the variable of bank type (government, private). The differences were in favour of private banks.

Statistically significant differences in the evaluation of accounting information quality between public and private banks indicate that private banks provide higher quality accounting information. This is due to the use of more advanced and modern accounting systems in private banks, in addition to their focus on efficiency and speed in data processing. Private banks also strive to meet competitive market demands, which drives them to invest in precise and flexible information systems that support timely decision-making. In contrast, public banks may suffer from limitations in updating their systems or administrative constraints that affect the quality of available accounting information. This disparity also reflects a difference in the culture of institutional performance between the two types, as private banks place greater importance on effective oversight and accuracy in presenting financial performance. The advantages for private banks highlight the need for government banks to enhance their information infrastructure and develop the skills of their staff, which contributes to improving the quality of accounting information and achieving greater transparency and efficiency in financial performance.

Summary of the research results:

- The effectiveness of using value chain technology, from the perspective of accountants, auditors, managers, and system experts in public and private banks in Iraq, was very high.

- The value chain represents a set of interrelated activities aimed at achieving the organization's strategic goals by focusing on value-adding activities.
- The quality level of accounting information, from the perspective of accountants, auditors, managers, and system experts in government and private banks in Iraq, was very high.
- Value chain analysis helps reduce costs associated with non-value-adding activities, which in turn aids in producing low-cost, high-quality products simultaneously.
- There is a statistically significant effect of using the value chain technique on the quality of accounting information from the perspective of accountants, auditors, managers, and system experts in government and private banks in Iraq.
- There are statistically significant differences between the average scores of the sample members regarding the use of the value chain technique from the perspective of accountants, auditors, managers, and system experts in government and private banks in Iraq, according to the variable of bank type (government, private). The differences were in favor of private banks.
- There are statistically significant differences between the average scores of sample members regarding the quality of accounting information from the perspective of accountants, auditors, managers, and systems experts in government and private banks in Iraq, depending on the variable of bank type (government, private). The differences were in favor of private banks.

Research proposals and recommendations:

- The necessity of enhancing the integration between value chain technology and management accounting systems in government banks, through adopting modern technological solutions and developing the information infrastructure.
- Encouraging government banks to adopt the practices of private banks in using value chain technology, which contributes to improving the quality of accounting information and reducing the gap between the two sectors.
- Conduct specialized training programs to enhance the capabilities of accountants, auditors, and system experts in applying the value chain and integrating it with accounting systems to achieve higher efficiency.
- Supporting the digital transformation in government banks by allocating sufficient resources to update accounting systems and linking them to value-added analysis mechanisms.
- Promoting a culture of using accurate accounting information in strategic decision-making within bank management, especially in the public sector.
- Establish specialized units for value chain analysis within banks to ensure the optimal use of this technique in improving financial performance.
- Directing regulatory and banking authorities to establish unified standards for implementing the value chain and measuring its impact on the quality of accounting information.
- Encouraging applied research in government banks to analyze the obstacles to implementing the value chain and work to overcome them in cooperation with systems and accounting experts.
- Conducting periodic assessments of the performance of the accounting information system and the value chain to identify strengths and weaknesses and work to improve them.

Suggested Research:

- Analysis of the obstacles to implementing the value chain in Iraqi government banks and mechanisms for overcoming them.
 - The impact of digital transformation on the integration of value chain information and management accounting in Iraqi banks.
 - The effectiveness of accounting information systems in supporting value chain analysis in the Iraqi banking environment.
 - The role of the value chain in improving financial performance and strategic planning in banks: A field study in Iraq.
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Appendix (1)

Questionnaire on the effectiveness of using value chain technology and its impact on improving the quality of primary accounting information.

Dear Mr./Mrs.....

This Survey aims to identify the effectiveness of using value chain technology and its impact on improving the quality of accounting information. The questionnaire is based on five response options. You can express your opinion by selecting one of the following answers for each item:

Please note the following:

- You may not mark each paragraph with two check marks.
- Do not leave any paragraph unanswered.

Thank you for your cooperation.

Section One: Demographic Information

Number of Years of Experience: Less than 10 years 10 years or more

Sector: Government Private

Survey items

items	Alternatives				
	Disagree	Disagree	Neutral	Agree	Strongly Agree
Axis 1: Effective Use of Value Chain Technology					
1. My company relies on value chain analysis to evaluate internal activities.					
2. The value chain contributes to improving operational efficiency.					
3. The value chain is used to identify activities that add value to customers.					
4. The company relies on accurate accounting data in its value chain analysis.					

5. Value chain outputs are linked to management accounting systems.					
6. The company applies technological tools to support the value chain.					
7. The cost of activities within the value chain is analyzed periodically.					
8. The value chain provides information that helps in making strategic decisions.					
9. Employees are sufficiently aware of the importance of the value chain.					
10. There is administrative support for implementing value chain technology within the company					
Axis 2: Quality of Accounting Information					
1. The accounting information provided by the company is accurate and reliable.					
2. Accounting information is provided in a timely manner					
3. Accounting information is clear and easy to understand.					
4. Accounting information is comparable across time periods.					
5. Accounting information is used in making strategic decisions.					
6. Accounting information systems support the analysis of financial performance.					
7. Accounting information reflects the actual financial performance.					
8. There is integration between value chain information and accounting.					
9. The quality of accounting information is periodically reviewed.					
10. Accounting information contributes to reducing accounting risks.					

Appendix (2)

Questionnaire on the effectiveness of using value chain technology and its impact on improving the quality of accounting information in its final form

Dear Mr./Ms.....

This Survey aims to identify the effectiveness of using value chain technology and its impact on improving the quality of accounting information. The questionnaire is based on five response options. You can express your opinion by selecting one of the following answers for each item:

Please note the following:

- You may not mark two check marks per item.
- Do not leave any item unanswered.

Thank you for your cooperation.

Section One: Demographic Information

Bank Type: Government Private

Survey items

Item	Alternatives				
	Disagree	Disagree	Neutral	Agree	Strongly Agree
Axis 1: Value Chain Technology					
11. The bank relies on value chain analysis to evaluate internal activities					
12. The value chain contributes to improving operational efficiency.					
13. The value chain is used to identify activities that add value to customers.					
14. The bank relies on accurate accounting data in its value chain analysis					
15. Value chain outputs are linked to management accounting systems.					
16. The bank applies technological tools to support the value chain					
17. The cost of activities within the value chain is analyzed periodically.					
18. The cost of activities within the value chain is analyzed periodically.					
19. Employees are sufficiently aware of the importance of the value chain.					
20. Administrative support is available for implementing value chain technology within the company.					
Axis 2: Quality of Accounting Information					
1. The accounting information provided by the bank is accurate and reliable					
2. Accounting information is provided in a timely manner					
3. There is integration between value chain and accounting information.					
4. Accounting information is comparable across time periods.					
5. Accounting information is used in making strategic decisions.					
6. Accounting information systems support the analysis of financial performance.					
7. Accounting information reflects the					

actual financial performance.					
8.Accounting information is clear and easy to understand.					
9.The quality of accounting information is periodically reviewed.					
10.Accounting information contributes to reducing accounting risks.					

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