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The Impact of Financial Engineering on Accounting Information Reliability: A Field Study

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Abstract: The purpose of the current research is to reveal the impact of Financial Engineering by (Transaction Structuring, Risk Management, and Innovative Finance) on Accounting Information Reliability by (Use of Information, Characteristics of Information, and Compatibility of Information) among a sample of commercial banks listed on the Iraq Stock Exchange, and for the purpose of addressing the research problem, which stipulated (What is the impact of Financial Engineering on Accounting Information Reliability at the concerned commercial banks in the Iraq Stock Exchange?) The research relied on the descriptive analytical approach by adopting the questionnaire tool to collect the necessary data to measure the level of availability of these variables, and as a result (200) questionnaire was distributed, and (179) questionnaire was retrieved, by (162) questionnaire valid for analysis, which means that (17) questionnaire damaged and not valid for analysis and this shows that the response rate reached (0.81), and to analyze the results were adopted two packages are (SPSS&AMOS). V.29) to analyze the results that the research seeks to provide, and accordingly the research came out with several results, foremost of which was the existence of a correlation and a significant impact between Financial Engineering and Accounting Information Reliability, and this in turn led the commercial banks concerned to adopt the mechanisms on which Financial Engineering is based from Transaction Structuring, Risk Management, and Innovative Finance to improve Accounting Information Reliability, and as a result, the research made several recommendations represented in the need for commercial banks to develop their internal capabilities with The

relationship with the evaluation of Financial Engineering indicators, which gives it a great focus on identifying the risks inherent in affecting its internal performance, which improves Accounting Information Reliability.

Keywords: Financial Engineering, Reliability of Accounting Information, Commercial Banks.

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Introduction

In the current business environment, companies, especially banks, face a major challenge in their ability to control the vast amounts of data they deal with on a daily basis (Popelo et al., 2021:190). As data grows and diversifies, companies are faced with the choice of either ignoring it or processing it to benefit from it, so storing, managing and using this data efficiently is a real challenge. The optimal use of this data provides accurate and reliable information, and enhances the understanding of the individuals and entities that make up this data within the company. This helps managers to make sound and accurate decisions, and increases their chances of achieving competitive success in various fields (Al-Rida,2024:3), which means that accounting information has become of great importance and more useful in the cases of rationalization of decision, so the possibility of benefiting decision makers and the level of quality of accounting information depends on the basic characteristics of accounting information (Gardi et al.,2021:2135; Radzi et al.,2024:163), among which reliability is one of the most important pillars of institutions and increases the confidence of customers and investors. In order to obtain reliable information useful in making timely decisions, it was necessary to design an engineering financial system that serves to provide a reliable picture of the financial and economic reality of the organization, as good accounting information systems are one of the requirements for providing management and other parties with information for business analysis and decision-making (Shahnaz & Maryam, 2022:a)

As Financial Engineering is one of the important and influential tools on the innovation of financial and banking institutions for various forms of financial, financing and service methods related to the financial sectors, as Financial Engineering plays an important role in consolidating innovative roles and achieving best practices that result in improvement in finding appropriate solutions to economic and institutional problems that hinder stimulating economic development and achieving profitability (Hassan, 2024:169). Nowadays, there are other trends to achieve the desired level of Use of Information, Characteristics of Information, and Compatibility of Information through Accounting Information Reliability, which is an important global trend that contributes to stimulating financial services to include many categories from many sectors of society, whether individuals or institutions (Elhag et al., 2024:7520).

Part One: Research Methodology

First: Research Problem

Companies and banks in particular suffer from the lack of the necessary capabilities to absorb and develop administrative capabilities that develop their internal capabilities related to their competitive position, which required the collection of large and accurate information and data in order to analyze and interpret competition in the target markets, but this information and data requires an accurate and reliable understanding in order to invest them in making decisions related to these banks, Thus, the issue of making a particular decision means a gradual or radical change in the structure and work of the bank, which means that the issue of change represents a cornerstone in every bank, and an inevitable element in building the stages of banking and

accounting activity, and this process and its success are closely related to keeping pace with events and technical developments that represent the basis link to keep pace with the target markets, so Financial Engineering represents a vital and effective point for developing the ability to innovate and raise the desire to develop, improve, upgrade and align the performance of banks by improving Accounting Information Reliability, and from this point of view, the research problem has been formulated in an important question stipulated (What is the impact of Financial Engineering on Accounting Information Reliability at the commercial banks concerned in the Iraq Stock Exchange?), To address this question, it is necessary to stand on several important sub-questions:

1. Do the banks concerned have a sufficient level of financial engineering implementation?
2. What is the extent of accounting information reliability that the banks concerned use?
3. What techniques do the banks concerned use to implement financial engineering to improve accounting information reliability?
4. What is the nature and type of relationship between financial engineering and accounting information reliability at the banks concerned?

Second: The Importance of Research

The importance of research lies in the investment of Financial Engineering to support Accounting Information Reliability, especially in light of the developments and transformations suffered by the business environment, which prompted commercial banks to adopt different tools in order to obtain useful and sufficient information and at high speed in order to control the largest possible amount of accounting information, and the importance of research is highlighted in:

1. Emphasizing the reliability of financial and accounting statements because of their key role in investing financial engineering techniques to develop the capabilities of internal banks.
2. Ensure the effective application of financial and accounting information systems within the concerned banks in order to help them build their activities and achieve their objectives.
3. Directing commercial banks to attract the correct information by matching it with reality and then using it in making decisions related to raising the efficiency and effectiveness of banks.
4. Emphasizing the investment of Financial Engineering technologies because of their great role in building the capabilities of banks to control the largest possible amount of big data in order to increase and diversify decision-making alternatives that depend on Accounting Information Reliability.

Third: The Objectives of Research

The research starts from an important point focused on determining the impact of Financial Engineering on Accounting Information Reliability at the commercial banks concerned in the Iraq Stock Exchange, and to achieve this goal it is necessary to build several sub-goals to reach the main goal, which are as follows:

1. Measuring the level of ownership of the concerned banks of the appropriate mechanisms for the application of Financial Engineering to them.
2. Determine the extent of Accounting Information Reliability that the concerned banks deal with.
3. Identify the techniques adopted by the concerned banks in the application of Financial Engineering in order to improve Accounting Information Reliability.
4. A statement of the nature and type of relationship between Financial Engineering and Accounting Information Reliability at the concerned banks.

Fourth: Hypothetical Outline and Hypothesis Development

The hypothesis scheme represents the basis through which the main hypotheses that test the strength of the relationship between the variables can be identified and then determine the objectives through which the research seeks to address the problem that he developed, and therefore Figure (1), illustrates the hypothetical scheme of the research according to the following variables:

Independent variable: It includes Financial Engineering, and this variable was measured through three dimensions (Transaction Structuring, Risk Management, and Innovative Finance).

Dependent variable: It is represented in Accounting Information Reliability, and this variable was measured through three dimensions (Use of Information, Characteristics of Information, and Compatibility of Information).

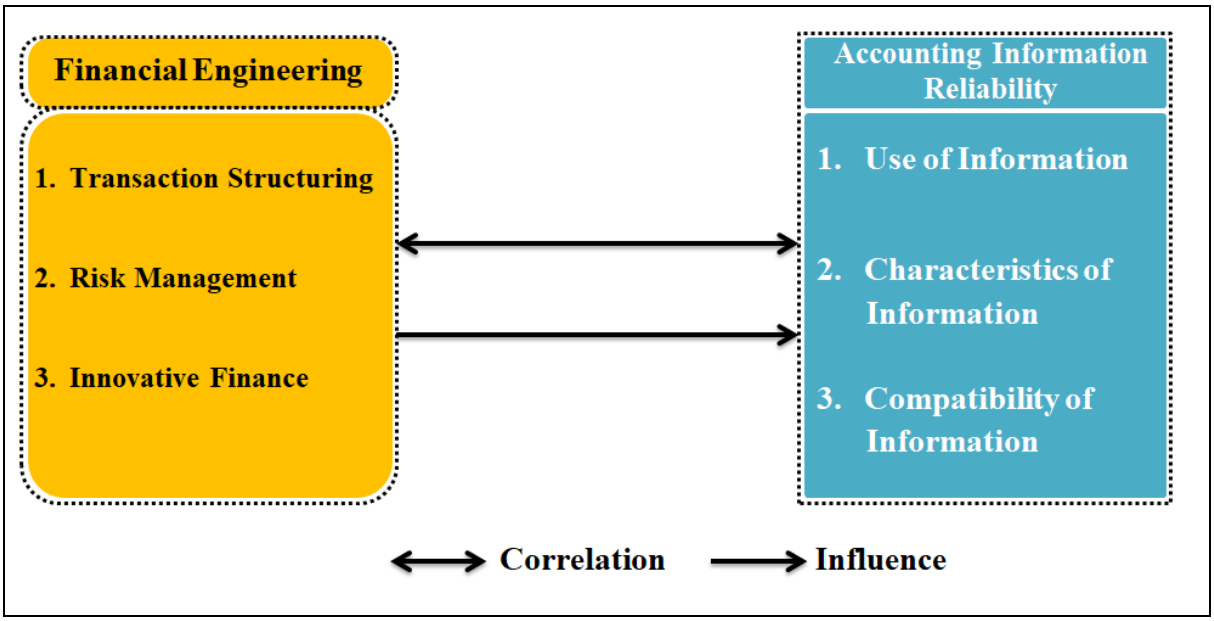

Figure (1): Research Hypothetical Outline

Source: Prepared by the Researchers

From the above, and based on Figure (1), two hypotheses can be developed:

H1: There is a significant correlation between financial engineering and the reliability of accounting information, from which the following emerges:

1. There is a significant correlation between the structure of transactions and Accounting Information Reliability in its dimensions (Use of Information, Characteristics of Information, and Compatibility of Information).
2. There is a significant correlation between Risk Management and Accounting Information Reliability in its dimensions (Use of Information, Characteristics of Information, and Compatibility of Information).
3. There is a significant correlation between Innovative Finance and Accounting Information Reliability in its dimensions (Use of Information, Characteristics of Information, and Compatibility of Information).

H2: There is a significant impact of financial engineering on the reliability of accounting information, from which the following emerges:

1. There is a significant impact of the transaction structure in Accounting Information Reliability in its dimensions (Use of Information, Characteristics of Information, and Compatibility of Information).
2. There is a significant impact of Risk Management in Accounting Information Reliability in its dimensions (Use of Information, Characteristics of Information, and Compatibility of Information).
3. There is a significant impact of creative finance in Accounting Information Reliability in its dimensions (Use of Information, Characteristics of Information, and Compatibility of Information).

Fifth: Research Sample

Representing the research community in the banking sector, the research sample included five banks in Diwaniya governorate, listed on the Iraq Securities Market, namely (Baghdad Investment Bank, Iraqi Union Bank, Dar Al Salam Bank, Gulf Bank, and Islamic World Bank). A total of (200) questionnaires were distributed, and (179) were retrieved, with (162) being valid for analysis. This means that (17) questionnaires were defective and not suitable for analysis, indicating that the response rate reached (0.81).

Part Two: The Theoretical Aspect

First: Financial Engineering

1. The Concept of Financial Engineering

Financial Engineering is an integral part of modern finance, as it provides advanced techniques and innovative solutions to address challenging issues (Awdh, 2024: 25). The concept of Financial Engineering focuses on innovation in effective and profitable financial methods, with the application and development of financial procedures in executing financial activities, in a more advanced and different way than before, thereby enhancing the efficiency and effectiveness of financial performance and its outcomes (Hassan, 2024: 172). Additionally, Financial Engineering represents a creative phenomenon of new product and operational development through the creation of new financial instruments that work to strengthen the role of shareholders and intermediaries in building new investment activities, which impacts the strategic thinking of emerging markets (Al_Khero et al., 2019: 36).

As Financial Engineering represents intellectual processes for innovating and designing new financial instruments characterized by creativity to diversify funding sources, its purpose is to find solutions for the problems faced by financial institutions, and to manage risks in a way that reduces or completely avoids them through prediction, measurement, interpretation, and analysis using quantitative methods, mathematical methods, and statistical modeling to achieve desired objectives at the lowest cost and highest return (Al-Nour et al., 2024:631). And (Abdul Samad & Sanaa, 2024:414) view Financial Engineering as utilizing financial products, such as financial derivatives, to obtain the optimal composition and mix of return and risk. On a broad scale, it involves applying innovation and fintech to solve financial problems and exploit financial opportunities. It is used on a narrow scale to express financial risk management.

Define (Mohamed & Mustafa, 2024:14) Financial Engineering as the use of financial instruments such as derivatives to achieve the desired portfolio of returns and risks. More broadly, it is the application of financial technology to solve financial problems and exploit financial opportunities. It is sometimes narrowly used to refer to financial risk management. On the other hand, it is

defined as a set of financial, accounting, and legal techniques available to financial management to enhance the value of ownership assets, achieve dividend sustainability, and reduce risks.

Financial Engineering represents the profession that uses tools to enhance corporate capabilities in managing financial matters, leading to maximizing returns and outputs, while finding appropriate solutions for various financing, investment, and risk processes (Carmona, 2020:3). The concept of Financial Engineering focuses on aspects of designing, implementing, and developing financial processes and tools, as well as innovating new ones. It involves directing newly created tools and products to serve the goals the organization seeks to achieve, and adapting existing tools in different ways to solve problems that hinder the performance of financial, banking, and investment operations, thereby enhancing investment capabilities and revitalizing financial markets (Hassan, 2024:172).

And from what has been mentioned, it can be said that Financial Engineering refers to the extent to which the market is able to design, develop, and implement innovative financial tools and strategies to provide financial solutions to the problems at hand.

2. The Importance of Financial Engineering

Financial Engineering is one of the important aspects in enhancing the financial performance of institutions and finding solutions to the problems associated with all dimensions of financial management, financing, and financial investments. It highlights the importance of Financial Engineering as it is considered a crucial tool for finding appropriate solutions to financial and economic problems that hinder the successful sustainability of financial and financing performance (Singla & Luby, 2020: 858). The importance of Financial Engineering can be identified as follows:

a) Focus on the creative development of financial products and processes.

b) Providing solutions to financial problems, especially in relation to risk management.

c) Providing a suitable investment environment to maximize returns and offer transparency and a clear image to stakeholders dealing with companies (Abdul Samad & Sanaa, 2024: 415).

d) Design an appropriate capital structure to reduce financing costs while maintaining the enhancement of company value.

e) Assist in building and developing innovative financial products, which enables the company to meet the requirements of investors and companies it deals with (Agustian et al.,2023:80).

f) Improve the efficiency of the financial markets it operates in by focusing on increasing liquidity and providing clear and transparent information (Dashkevich et al.,2024:245).

g) Provide suitable solutions for complex financial problems by guiding companies to reconsider debt structuring and evaluate assets.

h) Supporting tools for improving and enhancing economic growth through effective risk management, creating new opportunities and horizons for work (Tuychievich & Bakhritdinovich, 2024: 42).

3. Indicators for Measuring Financial Engineering

Financial engineering can be measured through three indicators:

a) **Transaction Structuring**: The use of Financial Engineering contributes to improving the transparency of banks by enhancing the quality of accounting information. With the advancement of technology, Transaction Structuring has become necessary to keep up with modern developments and achieve integration with the digital transformation and Financial

Engineering tools, aiming to improve the quality of accounting information (Shannan, 2024: 20).

b) **Risk Management**: The risk management related to Financial Engineering focuses on identifying, measuring, and assessing risks associated with the company's financial instruments and activities through identifying risks (market, credit, operational, and legal) with the aim of protecting and ensuring the company's financial stability (Chizoba et al., 2024: 2).

c) **Innovative Finance**: Financial Engineering is concerned with using Innovative Finance methods to support the company's developmental projects, whether large or complex, by channeling them towards the use of advanced technological tools that provide the appropriate financing for developing the company's internal capabilities (Singireddy et al., 2024: 110).

Second: Accounting Information Reliability

1. The Concept of Accounting Information Reliability

Accounting Information Reliability refers to the amount of information published in financial reports that is free from errors and bias during a specific period, and a truthful representation of economic events and operations. It represents the reliability property in accounting and financial information, which is an urgent necessity for individuals who do not have enough time and expertise to evaluate the contents of financial reports and select useful information for them (Al-Shuwairf et al., 2021:49). The Financial Accounting Standards Board defines Accounting Information Reliability as "the quality of information that ensures that the information is free from error and bias and is presented truthfully what should be presented and provided reasonably, and consequently, the objective of information reliability is to provide financial information free from errors to enable partners to adapt to the environmental changes they operate in, as well as to accurately reflect the transaction or event they aim to achieve (Shahnaz & Maryam, 2022:31).

Accounting Information Reliability refers to the truthful representation of accounting information that can be relied upon if it is comprehensive, impartial, verifiable, free from bias, and free from material error (Al-Rida, 2024:7). Muhajir & Al-Khair (2024:23) state that Accounting Information Reliability is the degree of objectivity it contains, which allows its users to reach the same results. The meaning of objectivity in accounting information includes minimizing bias, and bias may not only result from unsuitable accounting rules and their selection and application, but also from the people who apply these rules.

Reliability of information also means that the measurement and disclosure methods chosen to extract and present the results are appropriate for the circumstances surrounding them, and that the application of these methods is such that others - independent of those who applied them initially - can reuse them to verify those results. The information presented reflects the substance of the events involved without significant distortion, and is free from bias as it is truthful information that can be relied upon. If accounting information is reliable, it increases its usefulness (Hisham & Walid, 2022:44).

And based on the foregoing, it can be said that Accounting Information Reliability represents a summary of accurate, verifiable, predictable, and unbiased information free from accounting bias and manipulation that the decision-maker uses to read the targeted work environment and assess potential risks with the aim of improving the company's efficiency and effectiveness.

2. The Importance of Accounting Information Reliability

The importance of Accounting Information Reliability is highlighted by its significant role in:

a) Aligning with the information that will affect the decision-maker's behavior and enable them to make effective decisions.

b) Improving a company's ability to predict events by assisting the decision-maker with the Use of Information to achieve expected outcomes in the future.

c) Investing the right place and time by focusing on changes in environmental conditions, making it a fundamental pillar in the success of managers in making successful accounting decisions (Amira, 2022: 21).

d) Directing the company towards making informed investment decisions based on reliable information and anticipating future profits by focusing on risk assessment and efficiently allocating necessary financial and human resources (Atabaeva,2024:308).

e) Focusing on the periodic and continuous evaluation of the company's performance regarding the use of its resources to achieve its future goals and the goals of its investors and shareholders.

f) Gaining the trust of lenders and investors through the company's commitment to fulfilling its obligations to them, which leads to gaining customer satisfaction, which directly reflects on their internal trust in the company (Haguma Mushigo,2021:593).

3. Indicators for Measuring the Use of Accounting Information Reliability

Accounting Information Reliability can be measured through three indicators:

a) **Use of Information**: Represents the extent to which decision-makers rely on accounting information in their economic and investment decisions to assess the company's financial performance and derive the best assessment of potential risks, which in turn depends on reading stock prices and evaluating target markets (Li et al., 2024: 596).

b) **Characteristics of Information**: Accounting information is characterized by reliability and can be relied upon when it includes representation and truthfulness in expression, showing a correspondence between accounting information and the phenomena being reported. Additionally, it allows for verification of a high degree of agreement among accounting measurers who use the same measurement methods and reach the same results, as well as neutrality in providing truthful accounting information without bias and not affecting the process of obtaining information to serve one user over another (Muhajir & Al-Khair, 2024: 24).

c) **Compatibility of Information**: Represents the description of economic events in a way that is consistent and compatible with the described event, meaning it correctly portrays the economic event without errors or bias (Al-Farsi & Abdul-Rahman, 2023: 216).

Part Three: Practical Aspect

First: Description and Coding of Research Variables

This step aims to provide symbols that represent variables and paragraphs of the measurement tool, which helps the reader understand the results correctly and gives a clear view of the objectives the study seeks to uncover. Thus, Table (1) explains the coding and description of the study's variables.

Table (1) Coding and Description of Variables

Variables	Dimensions	NO.	Code		Source
Financial Engineering	Transaction Structuring	3	FETS	FIEN	Gill et al.,2024
	Risk Management	3	FERM		
	Innovative Finance	3	FEIF		
Accounting Information Reliability	Use of Information	7	ARUI	AIRE	Sharayri,2017
	Characteristics of Information	4	ARCH		
	Compatibility of Information	6	ARCO		

Second: Normal Distribution Test

The results in Table (2) indicate an analysis of the data related to research variables, where a statistical test was used to examine whether the data follow a normal distribution. This shows that the significance level is greater than 0.05, which means the data conform to a normal distribution. Accordingly, the null hypothesis was accepted, which states that the data drawn from the sample of the study follow a normal model, and the alternative hypothesis was rejected.

Table (2) Normal Distribution Test of Study Variables

NO.	Kol-Smia			Sig.			NO.	Kol-Smia			Sig.		
FETS1	0.327			0.144			ARUI1	0.404			0.175		
FETS2	0.340	0.233		0.185	0.160		ARUI2	0.415			0.153		
FETS3	0.351			0.157			ARUI3	0.382			0.179		
FERM1	0.391			0.105			ARUI4	0.357	0.133		0.185	0.086	
FERM2	0.304	0.217	0.142	0.132	0.145	0.073	ARUI5	0.370			0.191		
FERM3	0.437			0.113			ARUI6	0.444			0.188		
FEIF1	0.355			0.152			ARUI7	0.429			0.121		
FEIF2	0.396	0.240		0.150	0.135		ARCH1	0.255			0.198		
FEIF3	0.370			0.155			ARCH2	0.244			0.185		
							ARCH3	0.345	0.277	0.178	0.109	0.145	0.105
							ARCH4	0.241			0.141		
							ARCO1	0.279			0.185		
							ARCO2	0.246			0.197		
							ARCO3	0.324			0.111		
							ARCO4	0.253	0.246		0.176	0.129	
							ARCO5	0.296			0.104		
							ARCO6	0.328			0.125		

Third: Exploratory Factor Analysis Test

Exploratory factor analysis is one of the most important statistical tests that contributes to identifying the relationship between variables and latent factors. This analysis aims to discover the factors that explain the variables, and the statistical saturation value for the variables should not be less than 0.60 (Chan et al., 2007). The results in Table (3) show that the standardized saturation values for the research variables' paragraphs are acceptable, as the saturation value exceeded 0.60 at a significance level of less than 0.00001. Additionally, all paragraphs designed to measure the entrepreneurial tendency variable represent this variable and help explain it.

Table (3) Exploratory Factor Analysis Satency of Research Variable Factors

Component Matrix						
NO.	**FIEN**			**AIRE**		
FETS1	0.856					
FETS2	0.836					
FETS3	0.782					
FERM1		0.781				
FERM2		0.869				
FERM3		0.783				
FEIF1			0.791			
FEIF2			0.810			
FEIF3			0.865			
ARUI1				0.833		
ARUI2				0.799		
ARUI3				0.781		
ARUI4				0.790		
ARUI5				0.825		
ARUI6				0.897		
ARUI7				0.861		
ARCH1					0.808	
ARCH2					0.801	
ARCH3					0.870	
ARCH4					0.876	
ARCO1						0.875
ARCO2						0.817
ARCO3						0.775
ARCO4						0.850
ARCO5						0.815
ARCO6						0.853

Fourth: Analysis of the Reliability of the Measurement Tool

The results in Table (4) show that the factor stability coefficient as a measurement tool reached (0.878), which is distributed among the Financial Engineering variable, represented by three dimensions and practically (9) paragraphs, achieved stability (Cronbach's Alpha = 0.844). However, the stability of its dimensions ranged between the lowest value (0.853) for the Transaction Structuring dimension and the highest value (0.878) for the Innovative Finance dimension, which showed the consistency of the questionnaire paragraphs.

The results indicated that the dependent variable (Accounting Information Reliability), represented by three dimensions and practically (17) paragraph, achieved stability (Cronbach's Alpha = 0.813). However, the stability of its dimensions ranged between the lowest value (0.865) for the Compatibility of Information dimension and the highest value (0.889) for the Characteristics of Information dimension, which showed the consistency of the questionnaire paragraphs.

Table (4) Cronbach's Alpha Test Parameter

Variables	Dimensions	NO.	Cronbach's Alpha		
Financial Engineering	Transaction Structuring	3	0.853	0.844	0.878
	Risk Management	3	0.860		
	Innovative Finance	3	0.878		
Accounting Information Reliability	Use of Information	7	0.870	0.813	
	Characteristics of Information	4	0.889		
	Compatibility of Information	6	0.865		

Fifth: Statistical Description of the Variables

Explain the results in Table (5) showing a clear focus by employees in commercial banks on improving Financial Engineering through achieving an average score of (3.68) and a standard deviation of (0.43), which is due to employees' focus on adopting the Transaction Structuring FETS dimension by achieving an average score of (3.77) and a standard deviation of (0.63), while it is observed that there is little interest in the Risk Management FERM dimension, with an average score of (3.62) and a standard deviation of (0.53). This indicates that commercial banks are focused on using modern techniques in Financial Engineering to introduce transparency and relevance related to Accounting Information Reliability, which directly and indirectly affects the Use of Accounting Information, the characteristics of this information, and their consistency with each other.

The results in Table (5) indicate a clear focus by employees in commercial banks on improving Accounting Information Reliability through achieving an average score of (3.48) and a standard deviation of (0.44). This is attributed to the employees' focus on adopting the Use of Information ARUI dimension, achieving an average score of (3.74) and a standard deviation of (0.29). Meanwhile, it is observed that there is little interest in the Characteristics of Information ARCH dimension, with an average score of (3.29) and a standard deviation of (0.71). This means that commercial banks are working to evaluate risks by investors and financial analysts to ensure the provision of a unified framework for understanding Accounting Information Reliability, which limits transparency in accounting practices. This, in turn, falls on the shoulders of the Financial Engineering indicators adopted by the concerned banks.

Table (5) Statistical Description

No.	Mean	S.D	No.	Mean	S.D
FETS1	3.57	0.89	**ARUI5**	3.77	0.66
FETS2	3.84	0.71	**ARUI6**	3.68	0.58
FETS3	3.89	0.91	**ARUI7**	3.77	0.63
FETS	**3.77**	**0.63**	**ARUI**	**3.74**	**0.29**
FERM1	3.77	0.74	**ARCH1**	3.43	0.83
FERM2	3.38	0.93	**ARCH2**	3.36	0.98
FERM3	3.71	0.65	**ARCH3**	3.34	0.82
FERM	**3.62**	**0.53**	**ARCH4**	3.45	0.91
FEIF1	3.75	0.94	**ARCH**	**3.29**	**0.71**
FEIF2	3.61	0.53	**ARCO1**	3.29	0.93
FEIF3	3.63	0.62	**ARCO2**	3.39	0.85
FEIF	**3.66**	**0.46**	**ARCO3**	3.48	0.99
FIEN	**3.68**	**0.43**	**ARCO4**	3.46	0.93

ARUI1	3.63	0.49	**ARCO5**	3.38	0.89
ARUI2	3.91	0.61	**ARCO6**	3.46	0.91
ARUI3	3.63	0.70	**ARCO**	**3.41**	**0.72**
ARUI4	3.82	0.79	**AIRE**	**3.48**	**0.44**

Sixth: Hypothesis Testing and Path Analysis

H1: There is a significant correlation between Financial Engineering and Accounting Information Reliability.

The results of Table (6) indicate a meaningful correlation between Financial Engineering and Accounting Information Reliability, showing a strong correlation coefficient of (0.661) which represents the relationship between these variables. This result is largely attributed to the sample's concentration within its priorities regarding the relationship between the dimensions of these variables, ranging from a correlation strength of (0.267) between the dimension Risk Management FERM and the dimension Characteristics of Information ARCH, to (0.695) between the dimension Transaction Structuring FETS and the dimension Use of Information ARUI. This, in turn, led commercial banks concerned to adopt the tools underlying Financial Engineering from Transaction Structuring, Risk Management, and Innovative Finance to improve Accounting Information Reliability.

Table (6) Correlation Matrix

	FETS	**FERM**	**FEIF**	**FIEN**	**ARUI**	**ARCH**	**ARCO**	**AIRE**
FETS	1							
FERM	.513**	1						
FEIF	.392**	.514**	1					
FIEN	.830**	.833**	.747**	1				
ARUI	.695**	.520**	.369**	.676**	1			
ARCH	.425**	.267**	.399**	.350**	.355**	1		
ARCO	.531**	.550**	.356**	.606**	.389**	.356**	1	
AIRE	.665**	.552**	.326*	**.661****	.617**	.800**	.815**	1

H2: There is a significant impact of financial engineering on accounting information reliability

The results in Table (7) and the data displayed in Figure (2) indicate the existence of an emotional impact of Financial Engineering on Accounting Information Reliability, as an increase in Financial Engineering by one unit leads to an improvement in Accounting Information Reliability of (0.677) with a standard error of (0.105) and a critical value of (6.448), which means commercial banks recognize the importance of enhancing Accounting Information Reliability by focusing on Financial Engineering requirements, particularly in Transaction Structuring, Risk Management, and Innovative Finance. This contributes to commercial banks' commitment to adopting Financial Engineering tools to reduce the transparency of unfavorable financial disclosures that lead investors to withdraw due to the difficulty in understanding the risks related to the nature of their business. On the other hand, there is a notable interest among commercial banks in improving their capabilities in understanding Transaction Structuring through adopting Financial Engineering to understand the risk assessment associated with it, which leads to an impact on data quality, thereby reducing Accounting Information Reliability.

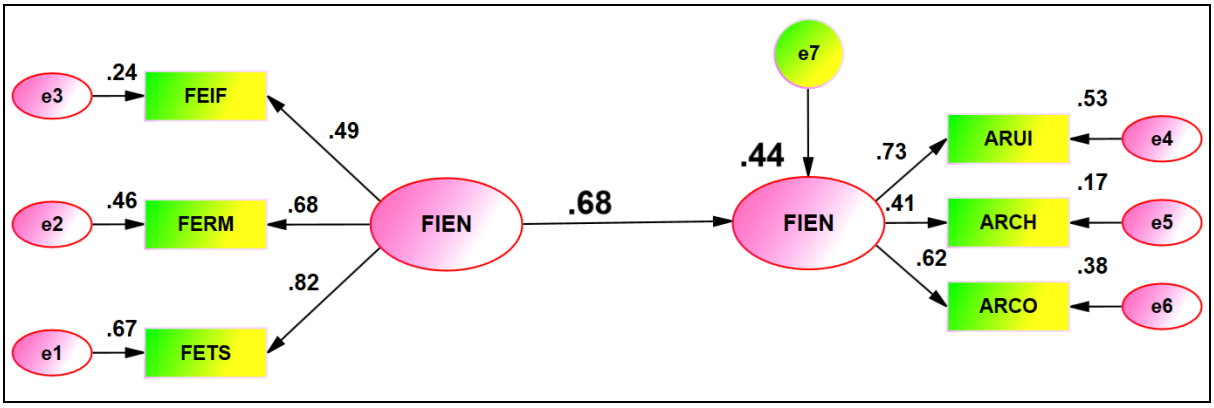

Figure (2) Path analysis of the impact of financial engineering on accounting information reliability

Financial Engineering also contributed to explaining (0.436) of the amount of variance in Accounting Information Reliability, while the remaining value falls outside the study's limits.

Table (7) Path analysis results of the impact of financial engineering on accounting information reliability

Path			Standard weights	standard error	critical value	R^2	P
FIEN	--->	AIRE	0.677	0.105	6.448	0.436	***

Part Four: Conclusions and Recommendations

First: Conclusions

1. There is a relationship of connection and emotional impact between Financial Engineering and Accounting Information Reliability, and this led commercial banks concerned to adopt the tools that Financial Engineering is based on from Transaction Structuring, Risk Management, and Innovative Finance to improve Accounting Information Reliability.
2. Commercial banks strive to adopt Financial Engineering tools to reduce the transparency of non-compliant financial disclosures that deter investors due to the difficulty in understanding the risks related to the nature of their business.
3. Commercial banks are interested in improving their capabilities by understanding Transaction Structuring through adopting Financial Engineering to understand the risks associated with them, which leads to an impact on the quality of data, thereby reducing Accounting Information Reliability.
4. Commercial banks focus on adopting corporate governance to mitigate the risks associated with accounting information, which drives them to adopt effective and supervisory internal controls that increase Accounting Information Reliability.
5. Commercial banks operate on risk assessment by investors and financial analysts to ensure a unified framework for understanding Accounting Information Reliability, which limits transparency in accounting practices. This, in turn, falls on the shoulders of Financial Engineering indicators that the concerned banks adopt.
6. Commercial banks focus on using modern techniques in Financial Engineering to introduce transparency and relevant disclosure of Accounting Information Reliability, which directly and indirectly affects the Use of Information in accounting, the characteristics of this information, and their consistency with each other.

Second: Recommendations

For achieving the desired results, it is essential for commercial banks:

1. To work on developing their internal capabilities related to Financial Engineering indicators, which enables them to focus heavily on identifying potential risks behind their internal performance, thereby improving Accounting Information Reliability.
2. To concentrate on allocating training programs aimed at enhancing the capabilities of their employees in Financial Engineering and accounting to ensure achieving a desired level of in-depth understanding of financial instruments, thereby reducing potential human errors and improving the reliability, characteristics, and consistency of information.
3. To be concerned with implementing strict systems for developing and applying internal governance systems with the aim of focusing on task completion and responsibility identification, thereby reducing accounting information manipulation practices, which directly reflects on Accounting Information Reliability.
4. Achieving alignment between policy development mechanisms for information disclosure, particularly those related to Financial Engineering tools, which requires providing clear and accurate information about investors and analysts, thereby enhancing banks' ability to understand risks and strengthening their power in reading target markets.
5. Focusing on analyzing and interpreting transaction structures, risk management, and Innovative Finance to ensure achieving an acceptable level of investment in Financial Engineering techniques, which helps uncover unfavorable patterns and potential risks, thereby enhancing Accounting Information Reliability.
6. Building a strong foundation for achieving a regulatory culture that supports integrity and accountability, with the aim of combating unethical behavior and gathering financial and accounting information around what is good and beneficial for banks and helps them achieve their objectives.

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