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The impact of a fair value accounting application on takaful insurance surplus: Insights from Shikan insurance and reinsurance company limited in Sudan

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ABSTRACT

This study examines the impact of fair value accounting implementation on the quality of measuring, equitable distribution and enhanced disclosure of takaful insurance surplus within Shikan Takaful Insurance and Reinsurance Company Limited's financial statements. Data was collected using a two-part questionnaire and a descriptive analysis technique: one gathering personal data about respondents and the other exploring study themes across four dimensions to test hypotheses. The questionnaire was distributed to a random sample of 60 corporate employees and 54 individuals responded, reflecting a 90% response rate. Data analysis used the Statistical Package for Social Sciences (SPSS). Three hypotheses were tested: (1) a positive relationship between fair value accounting and the accuracy of takaful insurance surplus measurement. (2) A positive relationship between fair value accounting and the equitable distribution of takaful insurance surplus. (3) A positive correlation between fair value accounting and enhanced disclosure of takaful insurance surplus. Results demonstrate a positive influence of fair value accounting on surplus measurement quality, equitable distribution and improved disclosure in company financial statements. The study recommends the crucial adoption of fair value accounting practices in insurance and reinsurance companies emphasizing the necessity of maintaining commitment to fair value accounting. Additionally, promoting full disclosure of takaful insurance surplus in financial statements is highlighted as a valuable tool for attracting new policyholders.

Contribution/ Originality: This study contributes by empirically examining the impact of fair value accounting on measuring the takaful insurance surplus at Shikan Takaful Insurance. The findings confirm the favourable impact of fair value accounting on accuracy, equitable distribution and increased disclosure in financial statements, providing useful insights for the insurance and reinsurance industries.

1. INTRODUCTION

The insurance industry serves as one of the fundamental financial intermediaries for mobilizing economic resources within a country [1].Takaful, the Islamic equivalent of conventional insurance exists in two forms: family (life) and general. The term " takaful" originates from Arabic meaning joint guarantee wherein participants mutually agree to support each other in bearing losses. Takaful programmes are guided by Islamic principles and standards based on fundamental sources including the Qur'an and Sunnah [2]. Thus, takaful finds acceptance among Muslims emphasizing principles of cooperation (ta'awun) and alms (tabarru') [3]. Moreover, takaful embodies three core aspects of mutuality: mutual assistance, protection against loss and shared responsibility [4].

The global takaful insurance market is rapidly growing servicing both Muslim and non-Muslim communities. Takaful insurance which is based on Sharia principles emphasises developing collaboration and social solidarity among policyholders. Takaful differs from traditional insurance in that it prioritizes risk-sharing with policyholders focusing on the financial implications of any loss or damage to insured assets. Additionally, the policyholders who make contributions are regarded as the legitimate owners of the objects insured by the insurance. They retain the privilege to withdraw any surplus generated by the insurance operations in the form of cash throughout the insurance process. This means that each individual has the right to receive the value of their insurance premium after reasonable deductions for essential allowances and expenses [5]. In Sudan, Islamic insurance (takaful) services were made available to the public in 1979 when Faisal Islamic Bank established the first Islamic firm with the aim of transforming the financial sector and other companies of a similar nature were subsequently established.

This paper will examine the possibilities of takaful as well as how fair value accounting offers essential protection for customers at appropriate levels in terms of disclosure and risk.

2. THE PROBLEM OF THE STUDY

The fundamental issue of this study lies in comprehending how to achieve the quality of measuring takaful insurance surplus, equitably distributing it and ensuring effective disclosure to policyholders and beneficiaries within the framework of the insurance and reinsurance company. Consequently, the central research question emerges:

What is the impact of fair value accounting implementation on the takaful insurance surplus? This central inquiry gives rise to the following sub-questions:

1. Does the application of fair value accounting contribute to enhance the quality of measuring the takaful insurance surplus?
2. Does the application of fair value accounting lead to an equitable distribution of the takaful insurance surplus?
3. Does the application of fair value accounting improve the disclosure of the takaful insurance surplus?

3. THE SIGNIFICANCE OF THE STUDY

This study's scientific significance derives from its ability to fill a gap in the literature on fair value accounting by connecting the ideas of quantifying and fairly allocating takaful insurance excess. Moreover, it serves to prompt scholars to engage in further exploration within this critical domain. This research is valuable from a practical standpoint because it illustrates the challenges Shikan Insurance and Reinsurance Co. Ltd. faces in quantifying and allocating Takaful insurance excess. The outcomes of this study offer valuable insights for decision-makers, directing their attention towards the implementation of fair value accounting in the quantification, an equitable distribution and transparent disclosure of takaful insurance surplus.

4. OBJECTIVES OF THE STUDY

This study aims to accomplish the following objectives:

1. To identify the impact of fair value accounting on the precision of measuring takaful surplus.
2. To elucidate the influence of fair value accounting on the allocation of takaful insurance surplus.
3. To clarify the implications of fair value accounting on the disclosure of takaful insurance surplus.

5. STUDY HYPOTHESES

The following hypotheses are tested in accordance with the study's stated problem and related objectives:

Hypothesis 1: A positive relationship exists between fair value accounting and the accuracy of takaful *insurance surplus measurement.*

Hypothesis 2: A positive relationship exists between fair value accounting and the equitable distribution of takaful *insurance surplus.*

Hypothesis 3: A positive relationship exists between fair value accounting and the enhancement of takaful *insurance surplus disclosure.*

6. STUDY STRUCTURE

The study is organised into many sections to achieve its goals and evaluate its hypotheses: an overview of the study's scope, the theoretical foundation of fair value accounting, the theoretical underpinning of takaful insurance, a detailed examination of the Shikan Insurance and Reinsurance Company Limited case study and culminating with the presentation of findings and ensuing recommendations.

7. LITERATURE REVIEW

7.1. Fair Value Accounting

The International Accounting Standards Board (IASB) defines fair value accounting as the value according to which an asset is exchanged or a liability is settled between willing and informed parties to deal on a purely commercial basis in a balanced framework, under normal circumstances or between two independent parties where the transaction takes place in a balanced framework [6]. According to Standard No. 157 FAS of the American Financial Accounting Standards Board (FASB), fair value is determined by a seller's price for an asset sold or the price paid for a liability transferred in an orderly transaction between parties that is exchanged in the market on the date of the measurement [7]. The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) defines it as "the value resulting from the exchange of assets or the settlement of an obligation assuming both parties are knowledgeable and willing to deal under terms similar to third-party transactions" [8]. Fair value accounting denotes the amount determined for an asset's value in an active market between informed, knowledgeable and willing parties established through a commercial process [9].

The significance of applying fair value accounting to measurement and disclosure lies in the following aspects [10]:

1. It offers greater accuracy, appropriateness and reliability compared to historical methods. It also assesses an entity's ability to optimally allocate and conserve resources.
2. It captures changes in an entity's economic situation resulting from fluctuations in interest rates, exchange rates, stock prices and associated risks.
3. It mitigates the unrealized financial gains associated with high-quality financial assets.
4. It enhances the quality of information pertaining to property rights in financial statements.
5. It provides relevant information to investors aiding them in evaluating an entity's performance strategies in financial investment management.

The utilization of fair value accounting emerged as a superior alternative to address the limitations of the historical cost principle presenting the following advantages [11].

1. It authentically reflects an entity's economic reality by fairly representing its financial statements.
2. When appraising assets and liabilities, it mirrors economic income by considering market prices.
3. Its application aligns with the notion of capital preservation.
4. It is more conducive to decision-making and financial analysis, serving as a stronger basis for projecting business outcomes and cash flows.

5. It facilitates more effective comparisons between similar entities than reliance on historical cost data.
6. The data it provides offers investors insight and a forward-looking perspective on an entity's value.
7. It is the optimal choice for evaluating an entity in business [12].

7.2. Distribution of the Surplus of Takaful Insurance

The word "takaful" comes from the Arabic word kafala which means "guaranteeing each other," "joint benefit" or "shared responsibility". Takaful or Islamic insurance is a type of policy that functions as a group loss-reimbursement scheme. It is offered to people and companies who are worried about possible hazards and is financed by modest, recurring payments that both parties agree to make to a fund that is managed by a takaful operator. The legal system that oversees the idea of takaful insurance is Islamic Sharia [13].

The takaful insurance industry has witnessed several developments throughout history as it began with the first Islamic company in Sudan in 1979 AD. The number of takaful insurance companies in the world increased to 215 companies and 96 takaful windows in 2014 AD. and the largest number of Islamic insurance companies is in the countries of the Gulf Cooperation Council amounting to 78 companies followed by 42 companies in the Far East and 38 companies in Africa [14].

The goals that takaful insurance seeks to achieve are as follows [15]:

1. Achieving solidarity and cooperation among the group of subscribers.
2. Providing insurance protection based on principles compatible with Islamic Sharia.
3. Providing insurance protection at the lowest possible cost.
4. Contribute to completing the circle of economic and Islamic institutions.
5. Motivating Muslims and non-Muslims to use the services of Islamic insurance companies [16].

Takaful insurance has characteristics that distinguish it from other types of insurance. The most important of these characteristics are the following:

1. The status of the insured and the insured for are combined for each member: Since participants in takaful insurance trade insurance among themselves, unfairness and exploitation are eliminated due to the combination of the insured's and the insured's traits in each participant's personality [17].
2. Democracy of ownership and management: Everyone who wants to join is encouraged and everyone is treated equally among members regardless of gender, race or creed [18].
3. No need for capital: When several participants who are exposed to a certain risk decide to share the loss that any one of them experiences with the others, takaful insurance initiatives are created [19].
4. Providing insurance at the lowest cost: Takaful insurance projects are founded on the principle of offering insurance services to its members at the lowest feasible cost because there is no profit component and limited administrative costs [20].

The surplus of takaful insurance is measured as follows:

Takaful insurance surplus = remaining insurance premiums + investment returns + refunds + provisions + reserves

The way insurance surplus is divided between subscribers and shareholders varies across different insurance markets. This surplus can be managed in a few different ways: it can be kept to bolster the reserves of subscribers for future needs, it can be distributed among subscribers based on their individual contributions (symbiotic participation), or it can be subtracted from the premium amount owed when setting the cost of a new policy period. Each approach has its own implications for how the extra funds benefit policyholders and the company's shareholders, shaping the overall dynamics of the insurance market [21].

7.3. Previous Studies

Several studies have delved into the realm of fair value accounting, each offering unique insights:

Lhaopadchan [22] conducted research to assess the effect of fair value accounting on the information that financial statement users may access. The study aimed to determine if fair value accounting increases or decreases the reliability of the information. Al-Saabari and Mardan [23] explored the relationship between fair value information and the quality of financial reports. They highlighted the shift from historical cost to fair value in accounting measurement showing that fair value application significantly improves the informational content of financial reports, thereby aiding future-oriented financial performance estimation. Palea [24] discussed the advantages of fair value accounting for users of financial statements compared to historical value accounting. The research recommended a dual reporting and measuring strategy to overcome the drawbacks of using only fair value. Emad [25] conducted a study of financial intermediaries employed by Syrian financial intermediation companies in order to examine fair value accounting from the viewpoint of those who use financial statements. The study explored both the advantages and criticisms of this accounting approach. Pimada's [26] study analyzed the impact of total contribution, reinsurance, claims and net investment income on surplus (deficit) underwriting in the Tabaru Fund of Islamic insurance companies in Indonesia. The findings highlighted the influence of these factors on underwriting surplus with reinsurance showing no significant impact. Kay and Martin [27] examined the tax implications of fair value accounting on current tax systems in Europe and the United States emphasizing how fair value elements could affect corporate tax liabilities. Toluwa and Power [28] reviewed the contentious aspects of fair value accounting, considering its relevance and reliability in financial reporting particularly in the context of financial instrument measurement. Rawaa and Imad [29] explored fair value's influence on the accounting system of an Iraqi economic unit revealing that the financial position and comprehensive income statements were prepared according to fair value accounting. Altawalbeh [30] investigated the impact of fair value accounting on information asymmetry in the Jordanian banking sector. Results indicated that fair value has a significant negative effect on information asymmetry enhancing stakeholder access to accurate and relevant information. Hisham and Zarfoun [31] examined the suitability of institutional factors for fair value application in the Algerian accounting environment concluding that these factors are somewhat incongruous with fair value's application in Algeria. Al-Shaarawy and Nofal [32] characterized the fair value of assets and its influence on the financial performance of Palm Hills Real Estate Development Company emphasizing its role in enhancing financial statement reliability and comprehensibility.

8. MATERIAL AND METHODS

The study adopts a descriptive analytical approach encompassing the delineation of study variables, data collection, analysis, presentation and inference drawing.

1. Study population and sample: The study population consists of department managers, deputy department managers, department heads, internal auditors and insurance employees at Shikan Insurance and Reinsurance Co. Ltd. The study sample was chosen at random from the community and after the researchers delivered 60 questionnaires, 54 people responded to the questionnaires with the necessary information completed i.e. a rate of approximately 90%.
2. Study tool: The researchers used the questionnaire as a main means for collecting primary data from the study sample. A letter was attached with the questionnaire to the respondents in which they were enlightened about the title of the study and the purpose of the questionnaire.
3. Statistical reliability and validity: the half-partition equation was used to calculate the stability and statistical validity of the questionnaire. Table 1 shows the results of the statistical reliability and validity of the responses of the respondents.
4. The statistical methods used were: The Statistical Package for Social Sciences (SPSS) was used and the simple linear regression method was used to test the hypotheses, where the nominal variables (strongly

agree, agree, neutral, disagree, strongly disagree) were transformed into quantitative variables (4, 5, 3, 2, 1), respectively to achieve the objectives of the study and verify its hypotheses.

5.

Table 1. The stability and statistical validity of the responses of the respondents to the questionnaire.

The axes	Coefficient of stability	Coefficient of self-honesty
The first axis: The first dimension	0.95	0.97
The first axis: The second dimension	0.55	0.74
The first axis: The third dimension	0.57	0.75
The second axis	0.72	0.85
Complete questionnaire	0.57	0.75

Table 1 clearly illustrates that all coefficients of reliability and validity for respondents' responses to statements related to each of the four study axes and the entire questionnaire exceeded 50%, with some approaching 100%. This indicates that the study questionnaire exhibits very high stability and validity fulfilling the research objectives and ensuring the statistical analysis is robust and credible.

9. DESCRIPTIVE ANALYSIS OF VARIABLES

9.1. Descriptive Analysis of the Personal Variables of the Study Sample

Table 2 shows the frequencies and percentages of the personal variables in the sample.

Table 2. Frequencies and percentages of personal variables.

Description		Frequencies	Percentages
Variable	Change categories		
Scientific specialization	Accounting	18	33.3%
	Cost and management accounting	10	18.5%
	Accounting information systems	8	14.8%
	Business administration	8	14.8%
	Banking and financial studies	7	13%
	Others	3	5.6%
	Total	54	100%
Qualification	PhD	2	3.7%
	MSc.	11	20.4%
	Higher diploma	14	25.9%
	Bachelor	24	44.4%
	Others	3	5.6%
	Total	54	100%
Job title	Director of the department	7	13%
	Deputy director of the department	9	16.7%
	Head of the department	12	22.2%
	Accountant	6	11.1%
	Internal auditor	6	11.1%
	Insurance officer	12	22.2%
	Others	2	3.7%
	Total	54	100%
Years of experience	Less than 5 years	9	16.7%
	From 5 to 9 years	13	24%
	From 10 to 14 years	7	13%
	From 15 to 19 years old	11	20.4%
	From 20 to 24 years old	10	18.5%
	From 25 years and over	4	7.4%
	Total	54	100%

Table 3 presents a descriptive analysis of Shikan Insurance and Reinsurance Company Limited's fair value accounting terms

Table 3. Descriptive analysis of fair value accounting terms.

No.	Statements	Frequency and percentage						
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Interpretation
1	Improve the concept of governance in the insurance and reinsurance companies.	48	5	1	0	0	5	Strongly agree
		88.9%	9.2%	1.9%	0%	0%	5	
2	Determine the financial disclosure requirements for the fair value of the elements of the financial statements.	45	8	1	0	0	5	Strongly agree
		83.3%	14.8%	1.9%	0%	0%	5	
3	Measure the company's assets using the most relevant accounting method.	46	8	0	0	0	5	Strongly agree
		85.2%	14.8%	0%	0%	0%	5	
4	Determine the fair selling price of the company's assets.	37	14	3	0	0	5	Strongly agree
		68.5%	25.9%	5.6%	0%	0%	5	
5	Measures the company's financial obligations in a more appropriate way.	38	13	3	0	0	5	Strongly agree
		70.4%	24.0%	5.6%	0%	0%	5	
6	Determine the fair payment of the financial obligation of the company.	29	21	4	0	0	5	Strongly agree
		53.7%	38.9%	7.4%	0%	0%	5	
7	Provide updated information prepared on the date of the accounting measurement process.	23	25	6	0	0	5	Strongly agree
		42.6%	46.3%	11.1%	0%	0%	5	
8	Increases the financial adequacy of the decision-maker among the company's stakeholders.	29	21	4	0	0	5	Strongly agree
		53.7%	38.9%	7.4%	0%	0%	5	
9	Help to provide more accurate audit evidence.	32	20	2	0	0	5	Strongly agree
		59.3%	37.0%	3.7%	0%	0%	5	
Total		327	135	24	0	0	5	Strongly agree
		67.3%	27.8%	4.9%	0%	0%		

It is clearly seen from Table 3 that 327 individuals in the study sample with a rate of 67.3% , strongly agreed with all the statements of the first axis, 135 individuals with a rate of 27.8% , agreed with that and 24 individuals with a percentage of 4.9% are neutral as the median value was 5 for the answers of the study sample to the phrases combined and this means that the majority of the respondents agree that fair value accounting has a positive effect.

9.2. Descriptive Analysis of Phrases Measuring the Surplus of Takaful Insurance

Table 4 shows the descriptive analysis of fair value accounting terms.

It is clearly shown in Table 4 that 262 individuals in the study sample with a rate of 69.3% strongly agreed with all the statements of the second axis, and 95 individuals with a rate of 25.1% agreed with that and 18 individuals with a percentage of 4.8% are neutral regarding this while three individuals with a rate of 0.8% did not agree with that as the median value was 5 for the responses of the study sample to the phrases combined. This means that the majority of the respondents agree that the application of fair value accounting achieves the quality of measuring the surplus of Takaful insurance.

Table 4. Descriptive analysis of phrases measuring the surplus of takaful insurance.

No.	Statements	Frequency and Percentage						
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Interpretation
1	It facilitates the knowledge of claims under settlement for policyholders.	41	8	4	1	0	5	Strongly agree
		75.9%	14.8%	7.4%	1.9%	0%	5	
2	It determines the unearned premiums fairly at the end of the period.	40	12	2	0	0	5	Strongly agree
		74.1%	22.2%	3.7%	0%	0%	5	
3	Includes unreported claims by insurance policyholders.	39	13	2	0	0	5	Strongly agree
		72.2%	24.1%	3.7%	0%	0%	5	
4	Calculates reinsurance premiums due to reinsurers.	33	18	3	0	0	5	Strongly agree
		61.1%	33.3%	5.6%	0%	0%	5	
5	Determine reinsurers' shares in paid claims.	38	15	1	0	0	5	Strongly agree
		70.4%	27.7%	1.9%	0%	0%	5	
6	Calculates the profit commissions from reinsurers at the end of the fiscal year.	35	14	4	1	0	5	Strongly agree
		64.8%	25.9%	7.4%	1.9%	0%	5	
7	The provision for risks applicable at the end of the period is determined.	36	15	2	1	0	5	Strongly agree
		66.7%	27.7%	3.7%	1.9%	0%	5	
		262	95	18	3	0	5	Strongly agree
		69.3%	25.1%	4.8%	0.8%	0%		

Table 5. Descriptive analysis of the statements of the distribution of the surplus of the takaful insurance.

No	Statements	Frequency and percentage						
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Interpretation
1	The surplus is distributed on the basis of the separation between the different types of insurance.	41	7	6	0	0	5	Strongly agree
		75.9%	13.0%	11.1%	0%	0%	5	
2	The surplus shall be divided among the policyholders who received compensation.	42	10	2	0	0	5	Strongly agree
		77.8%	18.5%	3.7%	0%	0%	5	
3	The surplus shall be divided among the policyholders who did not receive compensation.	43	11	0	0	0	5	Strongly agree
		79.6%	20.4%	0%	0%	0%	5	
4	Distribution deals with the differences in the accounting policies followed by the company in recognizing the contributions earned.	41	13	0	0	0	5	Strongly agree
		75.9%	24.1%	0%	0%	0%	5	
5	Distribution addresses the differences in accounting policies followed by the company in recognizing unearned contributions.	35	19	0	0	0	5	Strongly agree
		64.8%	35.2%	0%	0%	0%	5	
6	Distributing the surplus contributes to achieving the quality of the company's financial statements information.	31	22	1	0	0	5	Strongly agree
		57.4%	40.7%	1.9%	0%	0%	5	
7	Distributing the surplus improves the mental image of the company and supports its competitive position.	27	26	1	0	0	5	Strongly agree
		50%	48.1%	1.9%	0%	0%	5	
Total		260	108	10	0	0	5	Strongly agree
		68.8%	28.6%	2.6%	0%	0%		

Descriptive analysis of surplus distribution statements in Shikan Insurance and Reinsurance Company Limited's Takaful insurance operations.

It is clearly shown in Table 5 that 260 individuals in the study sample with a rate of 68.8% strongly agreed with all the statements of the third axis, 108 individuals with a rate of 28.6%, agreed with that and 10 individuals with a percentage of 2.6% are neutral about that where the value of the median was 5 for the responses of the study sample to the phrases combined and this means that the majority of the respondents agree that the application of fair value accounting achieves a fair distribution of the Takaful insurance surplus.

Descriptive analysis of surplus disclosure statements in Shikan Insurance and Reinsurance Company Limited's Takaful insurance operations.

It is clearly shown in Table 6 that 239 individuals in the study sample with a rate of 63.2%, strongly agreed with all the statements of the fourth axis and 128 individuals with a rate of 33.9%agreed with that and 11 individuals with a percentage of 2.9% are neutral about this. The value of the median was 5 for the answers of the study sample to the phrases combined and this means that the majority of the respondents agree that the application of fair value accounting improves the level of disclosure of the takaful insurance surplus.

Table 6. Descriptive analysis of the disclosure statements of the Takaful insurance surplus.

No.	Statements	Frequency and percentage						
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Interpretation
1	Full disclosure of the takaful insurance surplus is made in the financial statements.	34	15	5	0	0	5	Strongly agree
		62.9%	27.8%	9.3%	0%	0%	5	
2	The degree of disclosure by the company of the surplus of the takaful insurance indicates the basis for its treatment.	33	19	2	0	0	5	Strongly agree
		61.1%	35.2%	3.7%	0%	0%	5	
3	The degree of disclosure by the company of the surplus of takaful insurance shows the basis for its distribution.	34	18	2	0	0	5	Strongly agree
		63.0%	33.3%	3.7%	0%	0%	5	
4	The degree of disclosure of the company's takaful insurance surplus checks the appropriateness in the information of its financial statement.	34	19	1	0	0	5	Strongly agree
		63.0%	35.1%	1.9%	0%	0%	5	
5	The degree of disclosure of the company's takaful insurance surplus verifies the reliability of its financial statement information.	37	17	0	0	0	5	Strongly agree
		68.5%	31.5%	0%	0%	0%	5	
6	The degree of disclosure of the takaful surplus makes it easier to compare the company's financial performance through its financial statements.	30	23	1	0	0	5	Strongly agree
		55.6%	42.5%	1.9%	0%	0%	5	
7	The degree of disclosure of the takaful surplus helps the company attract new policyholders.	37	17	0	0	0	5	Strongly agree
		68.5%	31.5%	0%	0%	0%	5	
Total		239	128	11	0	0	5	Strongly agree
		63.2%	33.9%	2.9%	0%	0%		

10. HYPOTHESIS TESTING

10.1. First Hypothesis Test

The first hypothesis is as follows: “There is a relationship with a positive effect of fair value accounting on the quality of measuring the Takaful surplus.”

The hypothesis aims to demonstrate the effect of fair value accounting on the measurement of the takaful insurance surplus and to verify its validity, the simple linear regression method was used in building the model as fair value accounting as an independent variable (X) and the measurement of the takaful insurance surplus as a dependent variable as shown in the following table:

Table 7. Results of simple linear regression analysis on the first hypothesis statements.

Description	Regression analysis	(t) test	Probability value	Interpretation
$\hat{\beta}_0$	1.377	1.694	0.096	Insignificant
$\hat{\beta}_1$	0.706	4.019	0.000	Significant
Correlation coefficient (R)	0.49	The significant model		
The coefficient of determination (R^2)	0.24			
(F) test	16.16			
$Y_1 = 1.377 + 0.706X$				

The interpretation of the results presented in Table 7 is as follows:

1. The estimation results demonstrate a direct relationship between fair value accounting as an independent variable and measuring the takaful insurance surplus as a dependent variable with simple correlation coefficient values of 0.49.
2. The determination coefficient value of 0.24 indicates that fair value accounting as an independent variable, influences 24% of the variation in measuring the takaful insurance surplus, the dependent variable.
3. The simple regression model is significant with an F-test value of 16.16 indicating a significance level of 0.000.
4. When fair value accounting is zero, the average measure of the takaful surplus is 1.377.
5. An increase in fair value accounting by one unit corresponds to a 71% increase in the measurement of the takaful insurance surplus.

The researchers draw the conclusion that the first hypothesis of the study that there is a favourable relationship between fair value accounting and the accuracy of the takaful surplus measurement has been well-supported by the data presented above.

10.2. Test the Second Hypothesis

The second hypothesis is as follows: "There is a relationship with a positive effect of fair value accounting on the fairness of the distribution of the takaful insurance surplus."

Table 8. The results of a simple linear regression analysis on the statements of the second hypothesis.

Description	Regression analysis	(t) test	Probability value	Interpretation
$\hat{\beta}_0$	1.254	2.155	0.036	Insignificant
$\hat{\beta}_1$	0.735	5.845	0.000	Significant
Correlation coefficient (R)	0.63	The significant model		
The coefficient of determination (R^2)	0.40			
(F) test	34.16			
$Y_2 = 1.254 + 0.735X$				

The hypothesis aims to demonstrate the effect of fair value accounting on the distribution of the takaful insurance surplus and to verify its validity, the simple linear regression method was used in building the model as fair value accounting as an independent variable (X) and the distribution of the takaful insurance surplus as a dependent variable as shown in the following table:

The result shown in Table 8 could be interpreted as follows:

1. The results of the estimation showed that there is a direct relationship between fair value accounting as an independent variable and the distribution of the takaful insurance surplus as a dependent variable as the values of the simple correlation coefficient were 0.63.
2. The value of the determination coefficient was 0.40 and this value indicates that fair value accounting as an independent variable affects (40%) the distribution of the takaful insurance surplus (the dependent variable).
3. The simple regression model is significant as the value of the (F) test was 34.16 which is a function of the significance level (0.000).
4. 1.254: the average distribution of the surplus of the takaful insurance when the fair value accounting is equal to zero.
5. 735: An increase in the fair value accounting by one unit increases the distribution of the takaful insurance surplus by 74%.

Based on the information provided, the researchers have reached the conclusion that the study's second hypothesis, asserting a positive correlation between fair value accounting and the equitable distribution of takaful insurance surplus, has been supported. This indicates that fair value accounting methods have had a beneficial impact on ensuring a fair distribution of surplus within takaful insurance frameworks.

10.3. Third Hypothesis Test

The third hypothesis is as follows: "There is a relationship with a positive effect of fair value accounting on improving the disclosure of the Takaful insurance surplus."

The hypothesis aims to demonstrate the effect of fair value accounting on the disclosure of the takaful insurance surplus and to verify the validity of this hypothesis, a simple linear regression method was used in building the model with fair value accounting as an independent variable (X) and the disclosure of the takaful insurance surplus as a dependent variable as shown in the table below:

Table 9. The results of a simple linear regression analysis on the statements of the third hypothesis.

Description	Regression analysis	(t) test	Probability value	Interpretation
$\hat{\beta}_0$	1.433	1.716	0.092	Insignificant
$\hat{\beta}_1$	0.694	3.846	0.000	Significant
Correlation coefficient (R)	0.47	The significant model		
The coefficient of determination (R^2)	0.22			
(F) test	14.79			
$Y_3 = 1.433 + 0.694X$				

The results presented in Table 9 can be interpreted as follows:

1. Firstly, the estimation results indicate a direct relationship between fair value accounting, serving as the independent variable and the disclosure of takaful insurance surplus acting as the dependent variable with a simple correlation coefficient value of 0.47.
2. The value of the determination coefficient was 0.22 and this value indicates that fair value accounting as an independent variable affects (22%) the disclosure of the takaful insurance surplus (the dependent variable).

3. The simple regression model is significant as the value of the (F) test was 14.79 which is a function of the significance level (0.000).
4. 1.433: the average disclosure of the takaful insurance surplus when the fair value accounting is equal to zero.
5. 0.694: An increase in fair value accounting by one unit increases the disclosure of the surplus of takaful insurance by 69%.

From the aforementioned studies, the researchers conclude that the study's third hypothesis, which states that: "there is a positive relationship with fair value accounting in improving the disclosure of takaful insurance surplus" has been achieved.

11. CONCLUSION AND RECOMMENDATION

We have highlighted a number of important results in light of the study's findings. Firstly, our research has established a positive relationship between fair value accounting and the surplus of takaful insurance. This accounting method has not only improved the quality of measuring takaful insurance surplus but has also facilitated accurate tracking of due reinsurance premiums and the fair allocation of shares in paid claims to reinsurers. Furthermore, fair value accounting has demonstrated its effectiveness in ensuring the equitable division of the takaful insurance surplus among policyholders, both recipients and non-recipients of compensation. Additionally, the practice of full disclosure regarding the takaful insurance surplus in financial statements has significantly bolstered the reliability and appropriateness of the company's financial information.

We provide a number of recommendations based on these findings. Firstly, we advocate for a heightened interest within insurance and reinsurance companies in embracing fair value accounting emphasizing its pivotal role in accurately measuring the takaful insurance surplus. Secondly, it is essential for insurance and reinsurance companies to maintain their commitment to fair value accounting as this approach not only enhances surplus distribution but also fosters a climate of fairness for all policyholders. Thirdly, promoting full disclosure of the Takaful insurance surplus in financial statements can serve as a valuable tool for attracting new policyholders, thereby supporting business growth. Lastly, we recommend the initiation of a comparative study examining the application of the fair value method to reduce income smoothing while promoting realism in the financial statements and reports of insurance and reinsurance companies. These recommendations collectively aim to enhance transparency, trust and the overall industry.

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Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
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