

Investigating the Challenges of Implementing International Financial Reporting Standard 17 in Life Insurance and Proposing Solutions to Overcome Them

Hamid Dianatpey¹, Mohammad Reza Nikbakht^{2,*} and Ezzatollah Abbasian³



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¹ Ph.D. Student, Department of Accounting, International Campus Branch, University of Tehran, Tehran, Iran; 

² Associate Professor, Department of Accounting and Financial Sciences, University of Tehran, Tehran, Iran; 

³ Associate Professor, Department of Accounting and Financial Sciences, University of Tehran, Tehran, Iran; 

* Correspondence: mnikbakht@ut.ac.ir

Abstract: International Financial Reporting Standard 17 (IFRS 17), as the most significant transformation in the financial reporting of insurance contracts, provides a new framework for the recognition, measurement, presentation, and disclosure of insurance contracts. Despite the potential benefits of this standard in enhancing transparency, comparability, and the quality of financial information, its implementation in the insurance industry, particularly in the life insurance sector, is associated with numerous challenges. The present study aimed to investigate the challenges of implementing IFRS 17 in Iran's life insurance sector and to propose appropriate solutions for addressing these challenges. In terms of purpose, this was an applied study, and methodologically, it adopted a mixed-methods, qualitative–quantitative design. In the quantitative phase, data were collected through a researcher-developed questionnaire completed by 180 financial managers, auditors, actuaries, insurance industry experts, and information technology specialists. In the qualitative phase, 15 focus-group sessions were conducted with insurance industry experts, representatives of the Central Insurance of Iran, and members of the research team. Quantitative data were analyzed using descriptive statistics and the one-sample t test, while qualitative data were examined through content analysis. The findings indicated that the most important financial reporting issues in the insurance industry included the absence of a comprehensive accounting standard for life insurance, weaknesses in insurance contract measurement methods, inadequate requirements concerning technical provisions, insufficient separation of insurance activities from investment activities, limited risk disclosure, and deficient information infrastructures. Furthermore, the implementation of IFRS 17 was found to face challenges such as the absence of implementation guidance, limited training and specialized expertise, inadequate information systems, insufficient actuarial capacity, legal and regulatory ambiguities, extensive reliance on professional judgment, high operating costs, and the country's prevailing economic conditions. The findings also demonstrated that issues relating to the level of aggregation of contracts, discount rates, risk adjustment, and the variable fee approach were among the most challenging requirements of the standard. Accordingly, the development of national implementation guidance, expansion of specialized training, coordination among regulatory institutions, enhancement of information systems, reinforcement of supervisory mechanisms, and modernization of the actuarial profession were identified as the most important proposed solutions. The findings of this study may provide a foundation for policymaking and planning aimed at the successful implementation of IFRS 17 in Iran's life insurance industry.

Keywords: modern technologies, mixed-integer linear programming, big data analytics, artificial intelligence, cost accounting, informationalism, Iraqi industrial companies, managerial efficiency.

1. Introduction

Financial reporting constitutes one of the most important institutional mechanisms through which organizations communicate their financial position, operating performance, risk exposure, and future prospects to investors, regulators, creditors, managers, and other stakeholders. The usefulness of financial reports depends substantially on the relevance, faithful representation, comparability, consistency, verifiability, and transparency of the information they contain. In increasingly integrated capital and financial markets, national accounting systems that differ substantially in recognition, measurement, presentation, and disclosure practices may restrict the ability of stakeholders to compare entities across jurisdictions and may increase information asymmetry and the cost of financial analysis. International Financial Reporting Standards (IFRS) were developed to provide a common financial reporting language capable of improving the transparency and comparability of corporate reports and supporting more efficient economic decision-making. Evidence from developing economies indicates that compliance with IFRS requirements can contribute to higher financial reporting quality when entities possess the institutional capacity, professional competence, regulatory support, and information infrastructure required for effective implementation [1]. The adoption of international reporting standards has also been associated with improvements in accounting quality and the credibility of reported financial information, although the magnitude of such improvements varies depending on national enforcement mechanisms and organizational preparedness [2]. Nevertheless, global implementation of IFRS is not a purely technical process because differences in legal systems, economic conditions, professional cultures, regulatory arrangements, and organizational resources create both opportunities and substantial implementation challenges [3].

The adoption of IFRS may produce significant benefits for companies and financial markets by increasing the consistency of accounting treatments, reducing information asymmetry, strengthening investor confidence, and improving the comparability of financial statements. Research has shown that international reporting frameworks may influence perceptions of transparency and thereby affect investors' willingness to allocate financial resources to reporting entities [4]. In developing economies, IFRS adoption may also interact with financial stability, accounting quality, and organizational performance, although these effects depend on the quality of implementation rather than formal adoption alone [5]. Studies of multinational companies have similarly suggested that compliance with IFRS may influence financial performance through improvements in reporting discipline, access to capital, and the quality of financial decision-making [6]. Moreover, convergence between international financial reporting requirements and organizational planning and budgeting systems may strengthen corporate performance by linking standardized financial information to managerial control and strategic resource allocation [7]. These potential benefits explain why many jurisdictions have pursued either full adoption of IFRS or convergence between domestic accounting standards and international requirements. However, the implementation process frequently exposes weaknesses in existing accounting systems, regulatory coordination, professional education, internal controls, and data-management capabilities, meaning that the expected benefits of IFRS may not materialize unless such underlying deficiencies are addressed.

The institutional context in which international standards are implemented plays a decisive role in determining compliance outcomes. Empirical evidence indicates that the decision to adopt or comply with IAS/IFRS is influenced by organizational, regulatory, economic, and professional criteria rather than merely by the technical

merit of the standards themselves [8]. Resistance to implementation may arise when national taxation systems, company laws, sector-specific regulations, and supervisory requirements are inconsistent with international accounting principles. Differences between domestic accounting traditions and IFRS may also create uncertainty about the authority of competing rules and the treatment of transactions for statutory, regulatory, and tax purposes. Similar concerns are evident in the public sector, where the implementation of international accounting standards has been shown to depend upon political commitment, institutional legitimacy, professional capacity, and the alignment of reforms with local administrative environments [9]. In Islamic financial environments, convergence with IFRS may be further complicated by the need to reconcile international reporting principles with religious, contractual, and governance requirements specific to Islamic finance [10]. Strong governance systems are therefore essential to ensure that the flexibility and professional judgment embedded within international standards are not used opportunistically or in ways inconsistent with ethical and regulatory expectations [11]. These findings demonstrate that successful implementation requires coordinated institutional reform, not merely the translation or formal issuance of an international standard.

Iran's financial reporting environment is characterized by a combination of national accounting standards, sector-specific regulations, taxation rules, supervisory requirements, and gradual efforts toward convergence with IFRS. Research on Iranian capital-market companies has shown that IFRS adoption may interact with investor protection and earnings-management practices, indicating that the quality of enforcement and corporate governance influences the consequences of convergence [12]. Recent evidence concerning Iranian investment funds has also demonstrated that compliance with international financial reporting requirements may remain incomplete where domestic regulations, operational practices, and disclosure systems are not fully aligned with IFRS principles [13]. Furthermore, the relationship between newly introduced financial reporting standards and taxation requirements may create significant practical challenges. For example, the implementation of revenue-recognition requirements can affect the timing and measurement of taxable income and may require clarification of the relationship between accounting standards and income-tax regulations [14]. Such challenges are especially relevant in highly regulated industries because entities must simultaneously satisfy the requirements of accounting standard setters, tax authorities, supervisory organizations, and industry regulators. Consequently, the implementation of a complex insurance accounting standard in Iran must be examined within the broader context of regulatory alignment, tax consequences, institutional capacity, and the existing maturity of financial reporting systems.

The insurance industry has distinctive economic and accounting characteristics that make financial reporting particularly complex. Insurance companies receive premiums in exchange for assuming uncertain future obligations whose amount, timing, and probability may not be known at the inception of a contract. The financial performance of an insurer therefore depends on long-term estimates relating to claims, mortality, morbidity, lapses, expenses, investment returns, discount rates, and numerous other actuarial assumptions. Traditional accounting treatments have often produced inconsistencies in the recognition and measurement of insurance contracts across jurisdictions and even across companies operating within the same market. These inconsistencies have limited the comparability of insurers' financial statements and have sometimes made it difficult for users to distinguish insurance service performance from investment performance. IFRS 17, *Insurance Contracts*, was developed to replace IFRS 4 and establish a comprehensive principles-based framework for the recognition, measurement, presentation, and disclosure of insurance contracts. The standard aims to ensure that insurance contract liabilities are measured using current estimates and that profit is recognized as insurance services are provided rather than according to the timing of premium receipts. Research conducted in the insurance sector indicates that IFRS 17 can

improve accounting measurement and disclosure and enhance the overall quality of financial reports when its requirements are appropriately implemented [15]. The standard can also improve the quality of actuarial accounting information by linking financial reporting more closely to current actuarial estimates and the economic substance of insurance obligations [16].

IFRS 17 introduces fundamental changes to the measurement of insurance contracts. Under the general measurement model, the carrying amount of a group of insurance contracts consists of fulfillment cash flows and the contractual service margin. Fulfillment cash flows incorporate probability-weighted estimates of future cash flows, discounting to reflect the time value of money and financial risks, and a risk adjustment for nonfinancial risk. The contractual service margin represents the unearned profit that the insurer recognizes as it provides insurance contract services. The standard also permits the premium allocation approach for qualifying contracts and requires the variable fee approach for contracts with direct participation features. These measurement models demand detailed contract-level data, regular updating of assumptions, sophisticated actuarial techniques, and extensive interaction among accounting, actuarial, risk-management, investment, and information technology functions. Because the standard relies heavily on current estimates and professional judgment, its implementation can materially affect the timing and volatility of reported profit, the measurement of insurance liabilities, and the presentation of insurance finance income or expenses. The greater use of current-value information may enhance the relevance of financial statements, but fair value and current measurement techniques may also introduce estimation uncertainty and differing levels of reliability. Evidence regarding fair value hierarchies under IFRS and U.S. GAAP demonstrates that the value relevance of fair value information varies according to the observability and reliability of the inputs used in measurement [17]. This issue is particularly important for insurers operating in markets where reliable yield curves, market-based risk indicators, and sufficiently deep financial markets may not be available.

The implementation challenges of IFRS 17 are especially pronounced in life insurance because life insurance contracts are commonly long-term, actuarially complex, and frequently incorporate investment, savings, participation, or guarantee features. The measurement of these contracts requires insurers to project cash flows over long periods and consider changes in mortality, policyholder behavior, expenses, inflation, financial guarantees, and investment performance. The level of aggregation required by IFRS 17 also obliges insurers to divide portfolios into groups according to profitability and the year of initial recognition. This requirement may expose limitations in historical data, contract-administration systems, and internal reporting processes. Determining whether contracts are onerous, identifying contract boundaries, allocating insurance acquisition cash flows, selecting discount rates, estimating risk adjustments, and defining coverage units all involve substantial professional judgment. For products containing direct participation features, the application of the variable fee approach adds further complexity because the insurer must assess the relationship between policyholder benefits and the fair value of underlying items. These requirements may significantly alter the reporting of life insurance profitability and the relationship between insurance service results and investment returns. They may also create tax and regulatory consequences when existing national rules continue to rely on conventional premium-based revenue recognition or statutory technical provisions.

The experience of implementing other complex international standards demonstrates that new recognition models can generate substantial uncertainty and operational difficulty. IFRS 15, for example, changed the conceptual basis of revenue recognition by requiring entities to identify performance obligations and recognize revenue as control of goods or services is transferred. Studies of IFRS 15 implementation have documented

significant dilemmas concerning contract identification, transaction-price allocation, variable consideration, and the timing of revenue recognition [18]. Comparative analysis of international and national revenue-recognition models has similarly demonstrated that differences in terminology, contract analysis, and implementation guidance may produce divergent accounting outcomes [19]. These experiences are relevant to IFRS 17 because both standards are highly contract-based and require entities to analyze contract components, identify services, allocate consideration, and apply substantial professional judgment. However, IFRS 17 is even more technically demanding because it integrates accounting requirements with actuarial modeling, risk measurement, discounting, and long-term financial projections. Therefore, insurers cannot implement the standard successfully through changes to accounting policies alone; they must redesign processes, systems, governance arrangements, and professional responsibilities throughout the organization.

Information technology is one of the most critical determinants of IFRS 17 implementation readiness. Insurance companies typically operate multiple legacy systems for policy administration, claims management, investment management, actuarial valuation, reinsurance, general ledger processing, and regulatory reporting. These systems may use inconsistent data definitions and may not communicate with one another effectively. IFRS 17 requires granular, reliable, and continuously updated data relating to contract inception, cash flows, assumptions, risk characteristics, profitability, and service patterns. Consequently, insurers may need to develop centralized data warehouses, calculation engines, reconciliation mechanisms, and integrated reporting platforms. Weaknesses in data quality can impair the accuracy of fulfillment cash-flow estimates and make the grouping of contracts unreliable. They may also increase implementation costs because organizations must rely on manual adjustments and complex spreadsheet-based processes. Global assessments of IFRS implementation emphasize that technological capacity, data availability, implementation costs, and access to qualified specialists are among the most significant challenges faced by adopting organizations [3]. In the context of IFRS 17, these challenges are intensified by the need to connect actuarial outputs directly to financial reporting systems and produce auditable calculations for each reporting period.

Human capital and professional competence represent another fundamental implementation requirement. Accountants must understand actuarial assumptions and insurance contract measurement, while actuaries must understand financial reporting objectives, recognition principles, and disclosure requirements. Auditors must be capable of evaluating complex models, assumptions, data flows, and governance controls. Managers and members of boards of directors must also understand how IFRS 17 affects performance indicators, profitability patterns, capital planning, product design, and communication with investors. The shortage of professionals possessing both accounting and actuarial expertise may create a substantial barrier, particularly in emerging insurance markets. Moreover, the principle-based nature of the standard means that different entities may interpret the same requirement differently unless regulators and professional associations provide detailed and consistent guidance. The quality of implementation therefore depends not only on formal technical training but also on interdisciplinary cooperation, professional judgment, ethical conduct, and effective governance. Research on the adoption of international standards consistently indicates that accounting quality improves only when professionals possess the competence and institutional support needed to apply complex requirements consistently [1, 2].

Disclosure is a central component of IFRS 17 because the standard requires insurers to explain the amounts recognized in the financial statements, significant judgments, changes in assumptions, and the nature and extent of risks arising from insurance contracts. These disclosures are intended to enable users to understand the effect of insurance contracts on financial position, financial performance, and cash flows. In Iran, the development of a

comprehensive disclosure model for commercial insurance companies has been identified as necessary for improving transparency and aligning reporting practices with international financial reporting principles [20]. Nevertheless, expanded disclosure may create challenges where companies lack detailed databases, where commercially sensitive information is involved, or where managers are reluctant to reveal uncertainty and unfavorable financial conditions. Disclosure quality may also vary if organizations apply different assumptions, measurement methods, or risk-adjustment techniques. Although international standards can improve transparency, the benefits for investors depend on the credibility, completeness, and comparability of the disclosed information [4]. Regulatory authorities must therefore provide consistent disclosure templates, monitor compliance, and ensure that professional judgment is adequately documented and explained.

The successful implementation of IFRS 17 in Iran also requires careful attention to economic conditions. High inflation, volatility in interest rates and exchange rates, limitations in capital markets, uncertainty regarding risk-free rates, and differences among insurers' investment portfolios may make the determination of discount rates particularly difficult. Long-term life insurance obligations are highly sensitive to changes in financial assumptions, meaning that small differences in discount-rate methodology may produce material differences in insurance liabilities and profit recognition. The interaction between IFRS 17 and other standards, including those governing financial instruments, revenue recognition, fair value measurement, and income taxes, may also create complex transition and presentation issues. Evidence from developing economies suggests that the effects of IFRS adoption on accounting quality and organizational stability are conditioned by macroeconomic vulnerabilities and the strength of domestic institutions [5]. Therefore, direct transplantation of implementation practices from stable and highly developed financial markets may not be appropriate for Iran without adjustment for local economic realities.

Despite the growing international literature on IFRS adoption and the emerging body of research on IFRS 17, several important gaps remain. Much of the general IFRS literature has examined the consequences of adoption for accounting quality, investor perceptions, financial performance, or earnings management [6, 12]. Other studies have focused on institutional convergence, implementation criteria, governance, or the relationship between reporting standards and taxation [8, 10, 14]. Research directly related to IFRS 17 has highlighted its potential to improve measurement, disclosure, actuarial information, and reporting quality [15, 16]. However, limited empirical evidence is available regarding the combined accounting, actuarial, regulatory, technological, organizational, and economic challenges of implementing IFRS 17 specifically within Iran's life insurance industry. Existing studies do not provide a sufficiently integrated assessment of current financial reporting deficiencies, the implementation difficulties perceived by different professional groups, and the practical solutions required under Iranian conditions. Addressing this gap requires a mixed-methods investigation capable of combining quantitative evidence from a broad range of industry participants with qualitative insights derived from expert discussion and professional experience.

Accordingly, the aim of the present study was to identify and analyze the principal challenges associated with implementing IFRS 17 in Iran's life insurance industry and to propose practical, regulatory, technological, actuarial, and professional solutions for overcoming those challenges.

2. Methodology

The present study adopted an inductive approach because data were collected and the intended findings and framework were developed on the basis of data analysis. In terms of purpose, the study was applied, and in terms of methodological nature, it employed a mixed-methods design in which quantitative and qualitative methods

were used concurrently. The rationale for using a mixed-methods approach was to obtain a deeper understanding of the research issues, enhance the accuracy, credibility, and validity of the data, and combine the advantages of quantitative and qualitative methods. The quantitative method provided a foundation for statistical analysis, whereas the qualitative method revealed the actual perceptions and insights of individuals and experts.

The study was operationalized through a multistage design. These stages included identifying areas requiring improvement in the accounting and financial reporting practices of Iranian insurance companies, examining the challenges associated with applying IFRS 17 to life insurance, and exploring solutions for overcoming the challenges of implementing IFRS 17 under Iran's current conditions. The geographical scope of the study was Tehran because the country's principal insurance companies are headquartered in this province.

The statistical population consisted of financial managers and experts working in the national insurance industry, certified auditors involved in auditing insurance companies, investors holding substantial ownership interests in insurance companies, actuaries, and managers working in the information technology departments of insurance companies. For the questionnaire, interviews, and focus groups, participants were selected from among individuals whom the researcher considered to possess expertise relevant to the research topic. Sampling was initially conducted through judgmental sampling and was subsequently continued through snowball sampling, whereby certain members of the statistical population were introduced to the researcher by the interviewees.

The data-collection methods included document analysis, questionnaire administration, interviews, case studies of insurance companies, focus groups, analysis of financial statement items, and assessment of companies' level of preparedness. In the quantitative phase, a questionnaire comprising two sections—demographic questions and specialized questions—was developed. To prepare the questionnaire, published articles and literature concerning the challenges of the insurance industry, the financial statements of insurance companies, the opinions of regulatory experts, and the perspectives of insurance industry specialists were reviewed. Based on this review, a theoretical matrix was developed, followed by the formulation of the questionnaire items.

In the qualitative phase, the focus group was the principal data-collection instrument. Focus groups are structured discussion sessions in which selected individuals express their views and experiences regarding the research topic. In this study, interactions among group members, their reactions to one another's perspectives, and the development of collective discussions formed the basis for extracting qualitative data. Each focus-group session lasted two hours, and where necessary, additional sessions were allocated to particular topics. In total, 15 focus-group sessions were conducted. Before each session, an invitation specifying the date, time, and venue was sent to the participating members. In the present research design, the financial affairs adviser to the President of the Central Insurance of Iran was appointed as the project leader.

Data analysis was conducted in quantitative and qualitative phases in accordance with the mixed-methods nature of the study. In the quantitative phase, the research followed a survey design. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used, while the one-sample *t* test was employed for inferential analysis. This test was used to compare the mean score of the components of each factor with the hypothetical population mean. Given the use of a five-point Likert scale, a value of 3 was selected as the test value, and statistical tests were examined at an error level of .05.

In the qualitative phase, data from the focus-group sessions were recorded using audio-recording devices. The use of recorded files reduced errors associated with manual note-taking and prevented incomplete or selective recall by the facilitator. A text-based analytical approach was used for content analysis. Accordingly, the entire content of the sessions was transcribed verbatim, and the resulting texts formed the basis of the examination and

analysis. The focus-group discussions were analyzed by considering interactions among members, ambiguities, contradictions, and the perspectives expressed, and the findings were organized into a clear and evidence-based report.

To assess the validity of the quantitative phase, the content validity and face validity of the questionnaire were examined. For this purpose, the developed questionnaire was shared during an online meeting attended by three insurance industry experts. Each question was reviewed separately, and the questionnaire items were revised and finalized based on the recommendations provided. In the qualitative phase, validity was strengthened by extracting the principal topics from a review of the research subject and the written and audio documentation of formal meetings. An attempt was made to examine only one topic in depth during each focus-group session. Moreover, focus-group members possessed adequate knowledge of the standard. In certain sessions, the chief executive officer or financial manager of an insurance company presented a report on current practices and underlying data, and the existing situation was compared with the requirements of the standard.

The reliability of the quantitative phase was assessed using Cronbach's alpha. The Cronbach's alpha coefficient obtained in the present study was .965, indicating satisfactory reliability of the research instrument. In the qualitative phase, to enhance objectivity and avoid bias, the research team acted solely as the presenter of the discussion topics and did not intervene in the opinions expressed by focus-group members. Accordingly, issues relating to the reliability and credibility of the focus-group process were considered throughout the sessions.

3. Findings and Results

The results presented in Table 1 indicate that the demographic composition of the questionnaire respondents and focus-group members was largely similar and balanced. In terms of educational attainment, individuals holding a master's degree constituted the largest proportion in both groups, accounting for 46.0% of the questionnaire respondents and 44.4% of the focus-group members. Moreover, more than one fifth of the participants in both groups held doctoral degrees, indicating an appropriate level of specialized knowledge among the participants.

Regarding work experience, the highest frequency was observed among individuals with 5 to 8 years of professional experience. In addition, a substantial proportion of participants had at least 13 years of work experience, demonstrating the inclusion of experienced individuals who were familiar with the issues confronting the insurance industry.

An examination of the participants' academic disciplines showed that insurance and management accounted for the largest proportions in both groups, followed by accounting. This distribution was fully consistent with the nature of the study and its focus on IFRS 17 in the insurance industry. The participation of finance and economics specialists also enhanced the comprehensiveness of the perspectives presented.

In terms of organizational position, experts constituted the largest group, followed by managers. The simultaneous participation of experts, managers, deputies, and department heads ensured that the perspectives of different organizational levels were considered in identifying the challenges and proposing solutions for implementing IFRS 17. Overall, the demographic composition of the sample reflected diversity in expertise, professional experience, and managerial position, thereby strengthening the credibility of the research findings.

Table 1. Demographic Characteristics of Questionnaire Respondents and Focus-Group Members

Variable	Category	Questionnaire Respondents (<i>n</i> = 180)	Percentage	Focus-Group Members (<i>n</i> = 18)	Percentage
Education	Bachelor's degree	57	32.0	6	33.3
	Master's degree	83	46.0	8	44.4
	Doctoral degree	40	22.0	4	22.3
Work experience	5–8 years	93	52.0	9	50.0
	9–12 years	25	14.0	2	11.1
	13 years or more	62	34.0	7	38.9
Academic discipline	Finance	12	7.0	1	5.6
	Accounting	56	31.0	6	33.3
	Insurance/Management	93	52.0	9	50.0
	Economics	19	10.0	2	11.1
Organizational position	Deputy	20	11.0	2	11.1
	Manager	46	27.0	5	27.8
	Expert	94	51.0	9	50.0
	Department head	20	11.0	2	11.1

To answer the first research question—“What are the significant accounting and financial reporting issues in insurance companies?”—the questionnaire results and the identified issues were analyzed separately. As previously noted, the questionnaire consisted of three sections: recognition and measurement, reporting and disclosure, and systems and processes. The findings relating to each of these dimensions are presented below.

Table 2. Questionnaire Findings and One-Sample t-Test Results

Dimension and Item	Mean	<i>t</i>	<i>p</i>
Recognition and Measurement			
Improving the overall quality of financial reporting for life insurance	3.620	23.740	< .001
IFRS 17 focuses exclusively on life insurance	3.500	21.244	< .001
Internationally accepted methods for measuring insurance contracts are not applied by insurance companies	3.820	23.384	< .001
The standards used as the basis for preparing financial statements by Iranian insurance companies differ from those applied by internationally ranked insurance companies	3.820	23.750	< .001
Absence of an accounting standard for life insurance and reliance solely on existing life insurance regulations	3.840	21.423	< .001
Existing standards are inadequate regarding the sufficiency of technical provisions in different insurance lines	3.620	21.450	< .001
Full disclosure of information in financial statements, including risk disclosures, enables users to estimate risk and return more accurately	3.900	21.240	< .001
Recognition of premium revenue under IFRS 17 without adequately considering subsequent changes in environmental and economic conditions over time, together with insufficient adjustments such as risk adjustment or market-risk adjustment at the reporting date	3.660	23.154	< .001
Inaccurate product pricing due to the absence of a clearly specified source, namely an accounting standard, for estimating the risk of each contract and the lack of detailed analysis of contract-related risks	3.840	22.602	< .001
Premium rates and claims rates, or loss ratios, are predominantly administratively determined and are not proportionate to the risks assumed	3.560	21.013	< .001
Improved disclosure of assumptions and estimates used in preparing financial statements and improvement of financial reporting	3.840	21.423	< .001
Reporting and Disclosure			
IFRS 17 focuses exclusively on life insurance	3.980	21.646	< .001

Improved disclosure of assumptions and estimates used in preparing financial statements and improvement of financial reporting	3.880	21.744	< .001
Improved disclosure of revisions to accounting estimates and judgments and their related consequences	3.860	21.680	< .001
The separation of insurance operations from investment operations cannot be identified because insurance and investment activities are not separately recognized and disclosed in the revenue and expense sections of insurance companies' current financial statements	2.920	16.192	< .001
Difficulty determining whether groups of contracts are profitable or loss-making in accordance with IFRS 17	3.320	20.402	< .001
Inability to analyze information relating to groups of insurance contracts because such information is not reflected in insurance companies' current financial statements	3.700	20.670	< .001
Absence of detailed and classified information on premium revenue and claims, which are currently reported only in aggregate and by insurance line	3.880	21.846	< .001
Failure to reflect the nature and extent of risks arising from insurance contracts in insurance companies' financial statements	3.760	21.193	< .001
The imposition of levies and taxes through legislation and government policies in recent years constitutes a major financial challenge for insurance companies	4.180	24.153	< .001
Increased use of fair value measurement and provision of more relevant information	3.750	21.267	< .001
Systems and Processes			
Inadequate training and skills development for employees in financial accounting, investment, and actuarial departments, considering the complexity and specialized nature of the insurance industry, has impeded improvements in systems and processes	4.000	23.664	< .001
Lack of integration among information technology systems and software used by insurance companies has created difficulties in measurement, disclosure, and preparation of financial statements	4.180	25.989	< .001
The absence of an integrated information system increases the likelihood of errors in estimates and calculations	3.940	22.546	< .001
Inadequate linkage between the actuarial system and the financial system of insurance companies	4.000	23.664	< .001
There is a need to strengthen and improve the skills and knowledge of actuaries, accountants, and auditors who are directly involved in measurement and disclosure	4.180	25.989	< .001
The financial, treasury, and investment-management processes of insurance companies lack the capacity required to generate and prepare the information necessary for measurement and disclosure in financial statements in accordance with international standards	3.940	22.546	< .001

Based on the statistical analysis of the questionnaire and the particular emphasis placed on issues relating to life insurance, the addition of items specifically addressing this field was not only conceptually necessary but was also empirically and significantly confirmed by the respondents. The significance level of all items ($p < .001$) indicates that the obtained means were significantly higher than the midpoint and confirms the importance of the issues raised in relation to life insurance.

The questionnaire findings demonstrated that, under current conditions, financial reporting by insurance companies continues to face substantial challenges in the areas of recognition and measurement, reporting and disclosure, and systems and processes, despite the application of accounting standards and regulations approved by the High Council of Insurance. This situation further highlights the insurance industry's need for a comprehensive standard suited to the distinctive characteristics of insurance activities. Accordingly, the subsequent stage of the study examined the challenges associated with applying IFRS 17 as a comprehensive and industry-specific international standard and proposed solutions for addressing the identified implementation challenges.

To identify the challenges associated with implementing IFRS 17, a series of focus-group sessions was conducted with insurance industry specialists, auditors, actuaries, financial managers, and information technology experts. The topics discussed included the objectives and scope of the standard, separation of associated components,

measurement approaches, fulfillment cash flows, discount rates, risk adjustment, the contractual service margin, coverage units, and approaches to measuring insurance contracts. Content analysis of the sessions led to the identification of a set of principal challenges confronting the implementation of IFRS 17 in Iran's life insurance industry.

The findings indicated that one of the most significant barriers to implementing IFRS 17 was the existence of regulatory conflicts and ambiguities between the requirements of the standard and the laws governing the national insurance industry. Participants emphasized the precedence of domestic laws and regulations over international standards and argued that successful implementation of IFRS 17 would require the revision and alignment of insurance and tax regulations with the requirements of the standard. The absence of implementation instructions and practical guidance concerning the scope of contracts subject to the standard was also identified as another significant challenge in this area.

An examination of expert perspectives demonstrated that the existing information infrastructures of many insurance companies were incapable of meeting the information requirements of IFRS 17. The absence of integrated systems, limitations of specialized software, difficulties in classifying contracts, and the lack of preparedness of information systems to process the large volume of required data were among the most important implementation challenges. Participants also emphasized the need to develop information technology infrastructure and improve data quality.

One of the most complex aspects of implementing IFRS 17 concerns the determination and measurement of fulfillment cash flows. The findings indicated that determining contract boundaries, identifying directly attributable expenses, estimating future cash flows, continuously updating information, and exercising professional judgment were among the principal challenges in this area. Experts also referred to the risk of managerial bias and the possibility of manipulating cash-flow estimates, highlighting the need to strengthen supervisory mechanisms.

The findings revealed that determining an appropriate discount rate was one of the most significant and complex challenges associated with implementing the standard in Iran. The absence of a stable risk-free interest rate, economic and inflationary volatility, differences in the investment portfolio structures of insurance companies, and the absence of clear guidance for selecting discount rates create difficulties in measuring insurance liabilities. Participants also emphasized the possibility of asset-liability mismatches and the tax consequences arising from the application of discount rates.

The findings demonstrated that risk adjustment is a relatively new and complex concept for the national insurance industry. The absence of a uniform method for calculating risk adjustment, ambiguity concerning its relationship with technical provisions, differences in interpretations of the types of risks subject to adjustment, and limitations in the data required for risk estimation were among the most important challenges identified in this field. The role of actuaries in determining assumptions and the confidence level used in risk-adjustment calculations was also considered particularly significant.

Participants believed that calculating the contractual service margin was highly complex because of its dependence on other components of the IFRS 17 measurement model. Moreover, the concept of coverage units and the manner in which insurance services should be allocated over the contract period were identified as areas requiring specialized guidance and implementation instructions from the regulatory authority.

Regarding the variable fee approach and the premium allocation approach, ambiguities were identified concerning their scope of application, contract classification, and the identification of contracts qualifying for each

approach. The findings indicated that, in life insurance, particularly for investment-oriented products and long-term life insurance contracts, selecting the appropriate measurement approach is especially important and requires the development of clear and coordinated instructions by regulatory institutions.

Overall, the content analysis of the focus-group sessions showed that the challenges associated with implementing IFRS 17 in Iran's life insurance sector could be classified into seven principal categories: legal and regulatory challenges, information technology infrastructure, measurement of cash flows, discount rates, risk adjustment, the contractual service margin and coverage units, and insurance contract measurement approaches. These challenges formed the basis for identifying the implementation solutions proposed in the study.

Table 3. Focus-Group Findings on the Challenges of Implementing IFRS 17 in Life Insurance

Challenge	Statements and Identified Issues
Laws and regulations	Acceptance and prioritization of domestic legislation, including regulations issued by the High Council of Insurance, by the authority responsible for promulgating the standard.
Laws and regulations	The level of aggregation directly affects the recognition of the contractual service margin.
Laws and regulations	The manner in which business profitability is reported affects the company's tax position.
Laws and regulations	Tax consequences arise from separating contract components.
Laws and regulations	Regulations are required for the separation of contracts.
Laws and regulations	Regulations are required regarding investment of the separated component.
Laws and regulations	Discounting gives rise to tax consequences.
Laws and regulations	Tax consequences arise from recognizing gains resulting from increases in the fair value of underlying items and recognizing interest expense.
Stringent international disclosure requirements	Noncompliance with laws and professional ethics and unwillingness to disclose the financial position constitute barriers to achieving international standards.
Stringent international disclosure requirements	All information concerning financial position, cash flows, operating results, and other matters must be made widely available to the public.
Stringent international disclosure requirements	The implementation of international financial reporting standards involves complexity, novelty, and stringent quantitative and qualitative disclosure requirements.
Implementation cost	Companies adopting international financial reporting standards encounter implementation errors that may be costly.
Implementation cost	Initial investment costs arise from employee training and changes to information systems and software.
Failure to preserve the interests of all stakeholder groups	A balance must consistently be maintained among the demands of different stakeholder groups.
Failure to preserve the interests of all stakeholder groups	Accountants should not attach excessive importance to the interests of different groups; like physicians, they should seek to uncover the truth and contribute to a more efficient capital market.
Cultural and social factors	Implementing a new standard creates contradictory debates in practice and in educational settings.
Cultural and social factors	Culture affects human resources, and accounting is a social activity that connects and encompasses human and nonhuman resources; therefore, culture influences accounting practices, methods, procedures, and standards.
Failure to consider environmental and economic conditions	Accounting regulations at both national and international levels may constitute an important barrier to adopting international financial reporting standards and may have economic consequences.
Professional judgment	Determination of the contractual service margin is judgment-based.
Professional judgment	The insurer must exercise judgment in identifying and determining onerous contracts.
Professional judgment	Determining whether contract components are separable is judgment-based.
Professional judgment	Assigning probability weights to cash flows on the basis of current estimates requires judgment.
Professional judgment	Determining cash flows in the most appropriate manner for contract measurement and determining contract boundaries require judgment.
Professional judgment	Determining the risk-free interest rate and liquidity adjustment requires judgment.
Professional judgment	Adjusting for credit risk, identifying a reference portfolio, and determining the liquidity risk premium require judgment.

Professional judgment	Risk adjustment is judgment-based because the standard does not prescribe a specific method. This creates a possibility of managerial manipulation in determining risk adjustment according to each company's circumstances.
Professional judgment	Defining "materiality" is judgment-based because the premium allocation approach may be used only when its results do not materially differ from those of the general measurement model and when no material variability in cash flows is expected before the end of the contract period.
Professional judgment	Determining "materiality" is judgment-based when the standard requires a substantial relationship between returns on assets and payments to policyholders.
Professional judgment	Allocating coverage units and selecting a method that best reflects the insurance coverage and benefits provided require judgment.
Professional judgment	Selecting a reasonable proxy for the benefits provided under a group of contracts and determining the appropriate weighting of insurance services require judgment.
Professional judgment	Determining the probabilities of different types of insured events requires judgment.
Training	IFRS 17 must be implemented concurrently with other international standards, with particular attention to life insurance.
Training	IFRS 17 must be applied to goods and services supplied to the policyholder under an insurance contract that are distinct from the insurance component.
Training	IFRS 17 requirements must be considered in relation to investment components and derivatives.
Absence of professional guidance	Insurance contracts falling within the scope of IFRS 17 and those excluded from its scope must be defined and identified.
Absence of professional guidance	Criteria are required for determining whether an investment component is separable from the insurance component.
Absence of professional guidance	The basis for expected future cash flows and the manner in which they should be estimated must be defined.
Absence of professional guidance	Conditions for adding contracts to a group, removing them from a group, or derecognizing them must be specified, together with excluded cash flows and attributable acquisition costs.
Absence of professional guidance	The liquidity risk premium, risk-free interest rate, reference portfolio, and appropriate discount rate must be determined.
Absence of professional guidance	A cost-of-capital rate should be prescribed, and a checklist of risks should be developed and classified according to financial characteristics.
Absence of professional guidance	A checklist and classification of risks should be defined, together with a method for adjusting for uncertainty in the timing and amount of cash flows arising from nonfinancial risk.
Absence of professional guidance	Short-duration contracts should be clearly defined, and the contracts to be measured under the premium allocation approach should be identified.
Absence of professional guidance	Contracts with direct participation features should be clearly defined.
Information systems	When a contract is concluded with a new policyholder, the absence of historical records may result in loss of information during contract grouping.
Information systems	Information must be available for grouping contracts and preparing internal company reports, and existing company data must be standardized.
Information systems	Company information systems must be capable of separating life insurance reports from non-life insurance reports.
Information systems	Fulfillment cash-flow estimates must be updated at each reporting date and must incorporate all reasonable and supportable information available to the insurer.
Information systems	A comprehensive database and system integration are required to determine risk adjustment correctly.
Information systems	Information must be collected and updated to continuously assess whether the conditions for applying a measurement approach remain satisfied.
Information systems	Information systems must be integrated to enable the continuous collection and updating of information in line with changes in fair value.
Information systems	New systems and calculation models must be established to determine coverage units.
Internal reporting	Determining whether contracts are onerous depends on reports prepared by the entity's internal reporting system.
Internal reporting	Internal reporting and management systems must support the grouping of contracts.
Actuarial function	A consistent actuarial system is required for the accurate grouping of contracts.
Actuarial function	Discounting, the selection of discount rates, and the determination of the yield curve require actuarial expertise.

Actuarial function	Appropriate interaction is required between the actuarial function and the risk-management unit to define and determine risks accurately.
Actuarial function	Actuaries play an important role in estimating fair value and determining whether technical provisions remain appropriate in response to changes in values.
Operating cost	Contracts must be grouped with maximum accuracy.
Operating cost	Excessive complexity and detail in grouping contracts should be avoided.
Operating cost	Operating costs associated with contract grouping should be minimized.
Comparability	Companies differ in the manner in which they group contracts and apply the concept of risk.
Comparability	Insurance companies differ in the composition of their asset portfolios.
Comparability	Comparability among companies may be impaired because of differences in risk adjustment.
Comparability	Because the interpretation of materiality is judgment-based, participating contracts may be classified differently across companies.
Multiple reporting objectives	The IFRS 17 framework should, where possible, be aligned with other reporting purposes.
Management manipulation	Allowing companies discretion in grouping contracts creates a possibility of manipulation.
Management manipulation	Fulfillment cash-flow estimates may be subject to bias.
Management manipulation	Companies may elect to recognize interest expense in profit or loss or in other comprehensive income, and asset returns may be affected by earnings-management practices.
Management manipulation	The future of the economy and financial markets is uncertain, and inflation affects obligations in certain insurance lines.
Management manipulation	Management may manipulate estimates of the claims-settlement period because the premium allocation approach may be applied to liabilities for incurred claims only when the settlement period is expected to be less than one year.
Management manipulation	Investment income may be recognized in profit or loss or in other comprehensive income depending on the type of investment.
Management manipulation	Information must be updated continuously.
Management manipulation	Management may manipulate the determination of coverage units.
Management manipulation	Insurers face an accounting policy choice as to whether the discounting effect on risk adjustment should be presented separately in the insurance service result or included as part of insurance finance income or expenses.

The content analysis of the focus-group sessions demonstrated that the solutions for successfully implementing IFRS 17 in Iran's life insurance industry could be classified into several principal dimensions. First, the development of implementation instructions and practical guidance by regulatory authorities was considered especially important. Experts believed that many existing ambiguities regarding the scope of contracts subject to the standard, contract grouping, determination of cash flows, discount rates, risk adjustment, coverage units, and selection of measurement approaches could be resolved through the provision of practical and implementation-oriented guidance.

The second major solution concerns improving specialized knowledge and developing human capital in the insurance industry. The findings indicated that implementation of IFRS 17 requires extensive training for managers, accountants, auditors, actuaries, and other insurance industry stakeholders. Accordingly, specialized training programs, the use of findings from previous research projects, and enhancement of employees' professional awareness were identified as essential requirements for implementing the standard.

The findings also emphasized the need to revise and align domestic regulations with IFRS 17 requirements. In this respect, cooperation among the Central Insurance of Iran, the High Council of Insurance, the Audit Organization, and the Iranian National Tax Administration was considered necessary to reduce regulatory conflicts, resolve tax ambiguities, and facilitate implementation of the standard.

From an infrastructural perspective, the development and integration of insurance companies' information systems were identified as among the most important prerequisites for implementing IFRS 17. Updating

information systems, establishing comprehensive databases, improving data quality, and creating the capacity to process the information required by the standard were among the essential measures in this area.

The findings showed that strengthening actuarial capabilities also plays a critical role in the successful implementation of the standard. Updating actuarial models, developing professional standards, strengthening actuarial associations, and increasing interaction among the actuarial, risk-management, and financial-reporting functions were among the important solutions proposed by the experts.

Another fundamental solution was to increase reporting transparency and expand financial disclosures. Experts believed that many matters relating to contract grouping, discount-rate determination, risk adjustment, cash-flow estimation, and accounting policy selection depend on professional judgment. Therefore, full disclosure of the assumptions, methods, and judgments applied could enhance the transparency and comparability of financial statements.

Strengthening supervisory systems and internal controls was also identified as a key solution. According to the participants, effective supervision can reduce the likelihood of managerial bias, manipulation of estimates, and opportunistic use of the discretion permitted under the standard, thereby improving the quality of financial reporting.

Overall, the solutions proposed in this study focused on seven principal dimensions: developing implementation guidance, training and empowering human resources, reforming and coordinating regulations, developing information technology infrastructure, strengthening the actuarial system, improving transparency and disclosure, and reinforcing supervision and internal controls. Coordinated implementation of these measures may facilitate the successful adoption of IFRS 17 in Iran's life insurance industry.

Table 4. Proposed Solutions for Implementing IFRS 17 in Life Insurance

Identified Issue	Challenge	Proposed Solutions
Acceptance and prioritization of domestic legislation, including regulations issued by the High Council of Insurance, by the authority responsible for promulgating the standard	Laws and regulations	Provide implementation guidance; establish effective coordination between the Audit Organization and the Central Insurance of Iran; strengthen coordination between the Iranian National Tax Administration and the High Council of Insurance; assess the need for new regulations by the High Council of Insurance and other relevant institutions.
The level of aggregation directly affects recognition of the contractual service margin	Laws and regulations	Develop detailed regulatory guidance on contract grouping and the level of aggregation.
The manner in which business profitability is reported affects the company's tax position	Laws and regulations	Establish coordination between insurance and tax authorities and clarify the tax treatment of IFRS 17 results.
Tax consequences arise from separating contract components	Laws and regulations	Issue tax and regulatory instructions regarding the separation of contract components.
Regulations are required for contract separation	Laws and regulations	Develop formal criteria and implementation guidance for separating components of insurance contracts.
Regulations are required concerning investment of the separated component	Laws and regulations	Establish specific regulations governing the investment treatment of separated components.
Discounting gives rise to tax consequences	Laws and regulations	Clarify the tax treatment of discounting and changes in insurance liabilities.
Tax consequences arise from recognizing gains resulting from increases in the fair value of underlying items and recognizing interest expense	Laws and regulations	Coordinate accounting, insurance, and tax regulations regarding fair value gains and insurance finance expenses.
Noncompliance with laws and professional ethics and unwillingness to disclose financial position create obstacles to adopting international standards	Stringent international disclosure requirements	Provide implementation guidance and reinforce professional ethics and disclosure requirements.

All information concerning financial position, cash flows, operating results, and other matters must be made widely available to the public	Stringent international disclosure requirements	Develop detailed disclosure templates and implementation instructions.
Implementation involves complexity, novelty, and stringent quantitative and qualitative disclosure requirements	Stringent international disclosure requirements	Issue practical disclosure guidance and conduct specialized training.
Companies adopting international financial reporting standards encounter costly implementation errors	Implementation cost	Use the exposure draft of Iranian Accounting Standard 43, "Revenue from Contracts with Customers," which was developed on the basis of IFRS 15, where relevant to non-insurance components.
Initial investments are required for employee training and changes to information systems and software	Implementation cost	Develop phased implementation plans, allocate implementation budgets, and provide specialized training.
A balance must be maintained among the demands of different stakeholder groups	Failure to preserve stakeholder interests	Conduct training programs and establish transparent stakeholder-engagement mechanisms.
Accountants should prioritize truth-seeking and efficient capital-market reporting over the interests of particular groups	Failure to preserve stakeholder interests	Reinforce professional independence, ethics, and the public-interest orientation of financial reporting.
Implementing a new standard creates contradictory debates in practice and education	Cultural and social factors	Provide implementation guidance and establish coordinated professional education programs.
Culture influences accounting practices, procedures, methods, and standards	Cultural and social factors	Incorporate organizational and professional culture into change-management and training programs.
National and international accounting regulations may create economic consequences and impede adoption	Failure to consider environmental and economic conditions	Develop implementation guidance adapted to the economic and institutional conditions of Iran.
Determination of the contractual service margin is judgment-based	Professional judgment	Fully disclose judgments and the manner in which they were applied in the financial statements; use the findings of the fourth phase of the Insurance Research Center project entitled "A Framework for Applying IFRS 17."
Identification of onerous contracts requires insurer judgment	Professional judgment	Develop documented criteria, approval procedures, and supervisory controls for identifying onerous contracts.
Determining whether components are separable is judgment-based	Professional judgment	Provide explicit separation criteria and require disclosure of the judgments applied.
Assigning probability weights to cash flows based on current estimates requires judgment	Professional judgment	Develop standardized probability-weighting methodologies and strengthen actuarial review.
Determining cash flows and contract boundaries requires judgment	Professional judgment	Issue detailed guidance on contract boundaries and fulfillment cash-flow estimation.
Determining the risk-free interest rate and liquidity adjustment requires judgment	Professional judgment	Establish a national methodology for determining risk-free rates and liquidity adjustments.
Adjusting for credit risk, identifying a reference portfolio, and determining the liquidity premium require judgment	Professional judgment	Provide standardized models, reference portfolios, and disclosure requirements.
The absence of a prescribed risk-adjustment method creates a possibility of managerial manipulation	Professional judgment	Prescribe acceptable methodologies or methodological ranges and require independent actuarial validation.
Defining materiality under the premium allocation approach is judgment-based	Professional judgment	Develop quantitative and qualitative materiality guidance and require documentation of eligibility assessments.
Determining whether a substantial relationship exists between asset returns and policyholder payments requires judgment	Professional judgment	Establish criteria for identifying contracts with direct participation features.
Allocating coverage units and selecting a method that best reflects services require judgment	Professional judgment	Issue technical guidance on coverage-unit determination and require disclosure of the allocation method.

Selecting a reasonable proxy for benefits and determining the weighting of services require judgment	Professional judgment	Develop approved proxy measures and weighting methodologies.
Determining probabilities of different insured events requires judgment	Professional judgment	Strengthen actuarial models, data governance, and independent review procedures.
IFRS 17 must be implemented concurrently with other international standards, particularly in life insurance	Training	Conduct specialized and multidisciplinary training programs.
IFRS 17 must be considered for goods and services that are distinct from the insurance component	Training	Use the exposure draft of Iranian Accounting Standard 43, based on IFRS 15, for relevant distinct goods and services.
Investment components and derivatives must be addressed appropriately	Training	Provide joint training on IFRS 17, IFRS 9, and other related standards.
Contracts within and outside the scope of IFRS 17 must be clearly identified	Absence of professional guidance	Provide practical implementation guidance and require complete disclosure of judgments.
Criteria are needed to determine whether investment components are separable from insurance components	Absence of professional guidance	Develop specific separation criteria and illustrative examples.
The basis for expected future cash flows and their estimation must be defined	Absence of professional guidance	Issue actuarial and accounting guidance on expected-value techniques and cash-flow estimation.
Conditions for adding, removing, and derecognizing contracts within groups must be specified	Absence of professional guidance	Develop formal instructions regarding recognition, derecognition, excluded cash flows, and attributable acquisition costs.
The liquidity premium, risk-free rate, reference portfolio, and discount rate must be determined	Absence of professional guidance	Establish a national discount-rate framework and publish reference yield curves.
A cost-of-capital rate and risk checklist are required	Absence of professional guidance	Develop an approved cost-of-capital methodology and standardized financial and nonfinancial risk classifications.
Methods are required for adjusting for uncertainty in the timing and amount of cash flows arising from nonfinancial risk	Absence of professional guidance	Publish approved risk-adjustment techniques and disclosure requirements.
Short-duration contracts and contracts eligible for the premium allocation approach must be clearly defined	Absence of professional guidance	Issue explicit eligibility criteria and practical examples.
Contracts with direct participation features must be defined	Absence of professional guidance	Develop detailed guidance for applying the variable fee approach.
The absence of historical records for new policyholders may lead to information loss during grouping	Information systems	Update and integrate insurance companies' information systems in accordance with IFRS 17 information requirements.
Information must be available for contract grouping and internal reporting, and company data must be standardized	Information systems	Establish common data dictionaries, data-governance procedures, and integrated databases.
Information systems must distinguish life and non-life insurance reports	Information systems	Redesign reporting architectures to separately capture life and non-life contract data.
Fulfillment cash-flow estimates must be updated at each reporting date	Information systems	Automate reporting-date updates and ensure access to reasonable and supportable information.
A comprehensive database and integrated system are required for accurate risk adjustment	Information systems	Establish centralized, validated, and integrated actuarial and financial databases.
Information must be collected and updated to assess continued eligibility for measurement approaches	Information systems	Develop automated eligibility-monitoring controls.
Systems must collect and continuously update information in response to changes in fair value	Information systems	Integrate investment, actuarial, policy-administration, and financial-reporting systems.
New systems and calculation models are needed to determine coverage units	Information systems	Develop dedicated IFRS 17 calculation engines and coverage-unit models.
Determining whether contracts are onerous depends on internal reporting	Internal reporting	Strengthen supervision by the Central Insurance of Iran, auditors, and the Securities and Exchange Organization over insurance companies.

Internal reporting and management systems must support contract grouping	Internal reporting	Align management reporting, actuarial reporting, and statutory reporting structures.
A consistent actuarial system is required for accurate grouping	Actuarial function	Update actuarial knowledge, systems, and professional standards in accordance with IFRS 17 and strengthen the actuarial association.
Discounting and yield-curve determination require actuarial expertise	Actuarial function	Develop national actuarial methodologies and reference yield curves.
Appropriate interaction is needed between actuarial and risk-management functions	Actuarial function	Establish formal cross-functional governance committees and data-sharing protocols.
Actuaries play an important role in fair value estimation and provision adequacy	Actuarial function	Strengthen actuarial involvement in valuation, reserving, and financial reporting.
Contracts must be grouped with maximum accuracy	Operating cost	Use the findings of the fourth phase of the Insurance Research Center project entitled "A Framework for Applying IFRS 17."
Excessive complexity and detail in grouping should be avoided	Operating cost	Apply proportionality principles and standardized grouping procedures.
Operating costs associated with grouping should be minimized	Operating cost	Automate grouping processes and adopt scalable calculation systems.
Companies differ in contract grouping and application of the concept of risk	Comparability	Provide implementation guidance and standardized classification criteria.
Insurance companies have different asset portfolios	Comparability	Require transparent disclosure of portfolio characteristics and asset-liability management policies.
Different risk adjustments impair comparability	Comparability	Standardize risk-adjustment disclosures and confidence-level equivalents.
Judgment-based interpretations of materiality may produce inconsistent classifications of participating contracts	Comparability	Develop common materiality benchmarks and illustrative examples.
IFRS 17 should be compatible with other reporting purposes	Multiple reporting objectives	Use the findings of the Insurance Research Center project entitled "A Framework for Applying IFRS 17" to align statutory, management, tax, and financial reporting objectives.
Discretion in grouping contracts creates a possibility of manipulation	Management manipulation	Strengthen supervision by the Central Insurance of Iran, auditors, and the Securities and Exchange Organization.
Fulfillment cash-flow estimates may be biased	Management manipulation	Require independent actuarial review, model validation, and documentation of assumptions.
Accounting policy choices concerning interest expense and other comprehensive income may facilitate earnings management	Management manipulation	Establish consistent accounting policy criteria and require transparent disclosure of policy choices.
Economic and financial-market uncertainty and inflation affect insurance obligations	Management manipulation	Require scenario analysis, sensitivity analysis, and regular updating of economic assumptions.
Claims-settlement period estimates may be manipulated when determining eligibility for the premium allocation approach	Management manipulation	Require documented settlement-pattern analyses and independent review of eligibility.
Investment income may be recognized in profit or loss or other comprehensive income depending on the investment type	Management manipulation	Develop consistent classification and presentation policies aligned with the characteristics of the related insurance liabilities.
Information must be updated continuously	Management manipulation	Implement automated data-update controls and periodic validation procedures.
Management may manipulate coverage-unit determination	Management manipulation	Require actuarial validation, governance approval, and detailed disclosure of coverage-unit methods.
Insurers may choose whether to present the discounting effect on risk adjustment separately or as part of insurance finance income or expenses	Management manipulation	Establish a documented accounting policy, apply it consistently, and disclose its effects on performance measures.

4. Discussion and Conclusion

The present study investigated the challenges associated with implementing International Financial Reporting Standard 17 in Iran's life insurance industry and identified practical solutions for addressing those challenges. The quantitative findings showed that insurance companies currently face substantial deficiencies in three major areas: recognition and measurement, reporting and disclosure, and systems and processes. The qualitative findings further demonstrated that the implementation of IFRS 17 is affected by seven interrelated categories of challenges, namely legal and regulatory barriers, inadequate information technology infrastructure, difficulties in measuring fulfillment cash flows, uncertainty surrounding discount-rate determination, complexities in calculating risk adjustment, problems relating to the contractual service margin and coverage units, and ambiguities concerning insurance contract measurement approaches. The findings also indicated that implementation challenges are intensified by limited professional guidance, insufficient specialized training, extensive reliance on professional judgment, high operating costs, weak actuarial capacity, potential managerial manipulation, and the unstable economic environment. Overall, the results suggest that successful implementation of IFRS 17 cannot be achieved merely by issuing or formally adopting the standard; rather, it requires coordinated reforms in regulation, information systems, professional education, actuarial practice, supervision, and organizational governance.

The quantitative results concerning recognition and measurement showed that respondents perceived the absence of a comprehensive accounting standard for life insurance and the inadequacy of existing methods for measuring insurance contracts as major weaknesses in the current financial reporting environment. Participants also emphasized that the present regulatory framework does not adequately address the sufficiency of technical provisions, the pricing of insurance products, or the estimation of risks embedded in individual contracts. These findings are consistent with the argument that IFRS 17 can improve accounting measurement by introducing a unified framework based on current estimates of future cash flows, discounting, risk adjustment, and the contractual service margin [15]. The results also align with evidence that the adoption of IFRS 17 can enhance the quality of actuarial accounting information by creating a closer relationship between actuarial estimates and reported accounting amounts [16]. Under traditional reporting systems, insurance liabilities may be measured using historical, regulatory, or locally prescribed assumptions that do not fully reflect changes in economic conditions or the risk characteristics of contracts. IFRS 17 addresses this weakness by requiring updated and probability-weighted estimates, although applying these requirements demands reliable data and advanced actuarial expertise.

The finding that insurance companies do not consistently apply internationally accepted insurance contract measurement methods also reflects a broader challenge observed in developing economies, where formal adoption of international standards does not necessarily result in complete or high-quality implementation. Kabwe found that compliance with IFRS requirements improves financial reporting quality, but such improvement depends on the extent of actual compliance rather than nominal adoption [1]. Similarly, Yeboah and Pais reported that IFRS adoption can improve accounting quality, although institutional enforcement and firm-level reporting capacity significantly influence the outcome [2]. The present results therefore suggest that introducing IFRS 17 in Iran may improve the relevance and consistency of insurance contract measurement only if companies are able to apply its principles accurately and consistently. Without appropriate institutional support, the standard may create additional complexity while failing to produce the expected improvement in reporting quality.

The findings relating to reporting and disclosure showed that current financial statements do not adequately separate insurance service activities from investment activities and do not provide sufficiently detailed information regarding groups of contracts, premium revenue, claims, assumptions, estimates, and insurance risks. This limits users' ability to identify the sources of profitability, assess whether groups of contracts are profitable or onerous, and evaluate the nature and magnitude of risks arising from insurance contracts. The result supports Alhawtmeh's conclusion that IFRS 17 has the capacity to improve disclosure quality and enhance the usefulness of insurance companies' financial reports [15]. It is also consistent with Rahmaninia et al., who emphasized the need for a comprehensive IFRS-oriented disclosure model for Iranian commercial insurance companies to improve transparency and satisfy stakeholders' information requirements [20]. By separately presenting insurance service results and insurance finance income or expenses, IFRS 17 may provide a clearer representation of insurers' operating performance and reduce the ambiguity created when premium receipts are treated as revenue without considering the services remaining to be provided.

The importance attributed to disclosure in the present study also corresponds with evidence that transparent financial reporting can improve investors' perceptions and willingness to invest. Hoti and Krasniqi found that IFRS adoption and transparent disclosure policies positively influence investors' perceptions of reporting entities [4]. Enhanced disclosure may reduce information asymmetry by enabling investors, regulators, and policyholders to evaluate the assumptions underlying insurance liabilities and understand the effects of changes in estimates. However, the benefits of disclosure depend on the reliability of the underlying measurements. Filip et al. demonstrated that the value relevance of fair value information varies according to the reliability and observability of measurement inputs [17]. This issue is particularly important for Iranian life insurers because discount rates, risk adjustments, and estimates of future cash flows may rely heavily on unobservable inputs and professional judgment. Therefore, expanded disclosure should include not only reported amounts but also clear explanations of methods, assumptions, sensitivities, and estimation uncertainty.

The systems-and-processes findings showed that the lack of integrated information systems was among the most highly rated implementation problems. Respondents reported inadequate coordination among policy administration, actuarial, investment, accounting, and financial reporting systems, as well as limited capacity to produce the detailed and continuously updated data required by IFRS 17. These findings are consistent with global evidence that information technology limitations, implementation costs, data availability, and shortages of technically qualified personnel are among the most significant barriers to IFRS implementation [3]. IFRS 17 requires insurers to group contracts, maintain historical information, update estimates at each reporting date, and reconcile changes in insurance liabilities over time. Such requirements cannot be fulfilled reliably through fragmented legacy systems or extensive manual processing. The absence of system integration may increase the risk of data inconsistency, calculation errors, delayed reporting, and weaknesses in audit trails.

The qualitative findings regarding legal and regulatory challenges showed that conflicts between IFRS 17 and domestic insurance, taxation, and accounting rules constitute a major obstacle. Participants emphasized that national laws and regulations are generally given priority over international standards and that uncertainty exists regarding the tax effects of discounting, contract-component separation, fair value changes, and profit recognition. This finding is consistent with Diakomihalis et al., who showed that compliance with IAS/IFRS is influenced by national regulatory structures, institutional conditions, and the interaction between accounting requirements and the broader legal environment [8]. It is also supported by Hekmat et al., whose examination of Iranian investment funds indicated that complete compliance with IFRS requirements may be hindered by inconsistencies between

international requirements and domestic regulatory practices [13]. The results therefore indicate that IFRS 17 implementation in Iran requires regulatory harmonization among the Central Insurance of Iran, the High Council of Insurance, the Audit Organization, the Iranian National Tax Administration, and capital-market authorities.

The tax implications identified in the present study are also consistent with research showing that changes in financial reporting standards can affect taxable income and create uncertainty when accounting and tax systems are not aligned. Kiaei noted that revenue-recognition standards may influence the application of income-tax requirements by altering the timing and measurement of reported income [14]. Similar issues are likely to arise under IFRS 17 because insurance revenue, insurance service expenses, finance income, finance expenses, and contractual service margin recognition differ fundamentally from traditional premium-based reporting. Furthermore, the experience of IFRS 15 demonstrates that contract-based standards may generate practical dilemmas concerning scope, separation of components, allocation, and timing of recognition [18, 19]. Thus, the regulatory and tax treatment of amounts recognized under IFRS 17 should be clarified before full implementation to prevent inconsistent practices and disputes between insurers and regulatory authorities.

Another major finding was the extensive reliance of IFRS 17 on professional judgment. Participants identified judgment in determining contract boundaries, onerous contracts, separable components, probability-weighted cash flows, discount rates, liquidity premiums, risk adjustments, materiality, coverage units, and the eligibility of contracts for different measurement approaches. This reliance on judgment creates flexibility that allows insurers to reflect the economic characteristics of their contracts, but it also increases the possibility of inconsistency, bias, and managerial manipulation. Karami et al. showed that the relationship between IFRS adoption, investor protection, and earnings management depends on the strength of governance and monitoring mechanisms [12]. The present results extend this concern to life insurance by showing that management may influence reported performance through assumptions concerning cash flows, settlement periods, discounting, risk adjustment, and coverage units. Accordingly, strong model governance, independent actuarial review, transparent documentation, and effective auditing are necessary to prevent opportunistic application of the standard.

The identified risk of manipulation also highlights the importance of governance and ethical standards. Swandaru and Muneeza argued that strong governance mechanisms can reduce fraudulent or opportunistic conduct in financial institutions by clarifying responsibilities and strengthening accountability [11]. In the context of IFRS 17, governance should include formal approval of assumptions, independent validation of actuarial models, documentation of changes in estimates, segregation of duties, and oversight by audit and risk committees. The standard's principle-based requirements should not be interpreted as unrestricted managerial discretion. Instead, professional judgment must be exercised within a controlled framework that ensures consistency, neutrality, and faithful representation.

The findings concerning discount rates showed that the absence of a stable risk-free rate, high inflation, financial-market volatility, and differences in insurers' investment portfolios make the measurement of long-term insurance liabilities particularly difficult. This challenge is especially significant for life insurance contracts because their cash flows may extend over several decades. Small differences in discount-rate assumptions can materially affect liability values, contractual service margins, and reported profit. Ma et al. showed that the consequences of IFRS adoption in developing economies are influenced by economic vulnerabilities and financial stability conditions [5]. The present findings similarly indicate that IFRS 17 methodologies developed for deep and stable financial markets may not be directly transferable to an inflationary and volatile environment without national guidance. Regulatory

authorities may therefore need to develop reference yield curves or acceptable methodological frameworks while still permitting insurers to reflect the characteristics of their liabilities.

Risk adjustment was also identified as a highly challenging requirement because IFRS 17 does not prescribe a single calculation method. Participants reported uncertainty regarding the relationship between risk adjustment and existing technical provisions, the types of nonfinancial risks to be included, the confidence level to be applied, and the data required for calculation. While methodological flexibility enables insurers to reflect their risk preferences, it may reduce comparability among companies. This finding is consistent with the broader view that the benefits of international standards depend on consistent application and sufficiently comparable measurement practices [1]. It also supports the need for enhanced actuarial capacity, as suggested by the evidence that IFRS 17 improves actuarial accounting information only when actuarial methods are appropriately developed and applied [16]. Standardized disclosures, including confidence-level equivalents and methodological explanations, may partially address comparability concerns without requiring a single mandatory calculation technique.

The findings regarding the contractual service margin, coverage units, and measurement approaches further illustrate the operational complexity of IFRS 17. The contractual service margin depends on several other measurement components and must be released systematically as insurance services are provided. Determining coverage units requires judgment regarding the quantity of benefits and the expected coverage period, while selecting the variable fee approach or premium allocation approach requires detailed assessment of contract characteristics. These issues are especially important for participating and investment-linked life insurance products. The results support the broader conclusion of Misrofinjah et al. that international standards create substantial implementation opportunities but also require extensive technical adaptation and institutional preparation [3]. They also indicate that national implementation guidance should provide sector-specific examples rather than merely restating the wording of the standard.

The study identified specialized training, regulatory coordination, integrated information systems, strengthened actuarial capacity, increased disclosure, and reinforced supervision as the principal solutions. These solutions are mutually reinforcing. Training without adequate systems will not enable reliable implementation, while advanced systems without skilled personnel and regulatory clarity will not generate consistent reporting. Abbas and Chakroun emphasized that convergence with international reporting standards can support organizational performance when it is integrated with planning, budgeting, and managerial processes [7]. Osho et al. similarly suggested that IFRS implementation may affect corporate financial performance through changes in reporting quality and organizational discipline [6]. Therefore, Iranian insurers should treat IFRS 17 as an enterprise-wide transformation project rather than a narrow accounting exercise. Its implementation should involve senior management, actuaries, accountants, information technology specialists, risk managers, auditors, tax experts, and regulators.

The findings also suggest that local implementation should remain compatible with Iran's institutional and financial context. Maleki Eskoi and Salarinejad showed that convergence with IFRS in Islamic financial environments requires careful consideration of domestic financial principles and institutional characteristics [10]. Likewise, Schmidhuber et al. demonstrated that international accounting reforms succeed when institutional conditions, professional capacity, and stakeholder expectations are taken into account [9]. Accordingly, successful IFRS 17 implementation in Iran should not involve weakening the core principles of the standard, but it should include national guidance concerning discount rates, taxation, data requirements, actuarial methods, transition

arrangements, and regulatory reporting. A phased approach may reduce implementation risk and allow companies to test systems, improve data quality, and resolve interpretive issues before full adoption.

The present study was subject to several limitations. First, the geographical scope was limited to Tehran because most major insurance companies and regulatory institutions are located there; therefore, the findings may not fully represent the circumstances of smaller insurance companies or regional branches in other provinces. Second, the quantitative data were based on self-reported perceptions and may have been influenced by participants' professional backgrounds, organizational interests, or differing levels of familiarity with IFRS 17. Third, although participants included financial managers, auditors, actuaries, insurance experts, and information technology specialists, the views of policyholders, investors, tax officials, and external software providers were not examined separately. Fourth, the study was conducted before the full operational implementation of IFRS 17 in the Iranian life insurance sector, meaning that some identified challenges were based on expectations and professional assessments rather than direct post-implementation experience. Finally, the absence of comparable IFRS 17 financial data from Iranian insurers restricted the possibility of quantitatively estimating the standard's effects on liabilities, profitability, equity, solvency, and key performance indicators.

Future research should conduct longitudinal studies before, during, and after IFRS 17 implementation to examine how implementation challenges evolve and whether the proposed solutions improve reporting outcomes. Comparative studies could investigate differences between life and non-life insurers, public and private insurance companies, and large and small entities with varying levels of technological and actuarial capacity. Further research should also develop quantitative simulation models to estimate the effects of alternative discount rates, risk-adjustment methods, levels of aggregation, and coverage-unit approaches on insurance liabilities and profitability. Researchers could examine the interaction between IFRS 17 and taxation, solvency regulation, capital adequacy, product pricing, asset-liability management, and corporate performance. Additional studies should include the perspectives of investors, policyholders, regulators, tax authorities, and software vendors to provide a broader stakeholder assessment. Developing and validating an IFRS 17 implementation-readiness scale for insurance companies would also support future empirical comparisons and regulatory evaluations.

Insurance companies should establish multidisciplinary IFRS 17 implementation committees involving financial reporting, actuarial, information technology, risk-management, investment, internal audit, legal, and tax functions. A comprehensive readiness assessment should be conducted to identify data gaps, system limitations, professional training needs, and regulatory inconsistencies. Insurers should develop integrated databases and calculation engines capable of supporting contract grouping, fulfillment cash-flow estimation, discounting, risk adjustment, contractual service margin calculations, and coverage-unit allocation. Regulatory authorities should publish practical national guidance, illustrative examples, reference methodologies, and standardized disclosure templates. Professional training should be continuous and should include applied workshops, model validation, case studies, and cross-functional education. Companies should also strengthen internal controls, independent actuarial review, audit trails, assumption governance, and disclosure procedures to reduce managerial bias and improve comparability. A phased implementation process involving pilot testing, parallel reporting, system reconciliation, and periodic regulatory review would further reduce operational risk and support the sustainable adoption of IFRS 17.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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