Scarcity of life insurance protection for consumer loans for retirement age: An analysis of supply and demand imbalances in the Indonesian life insurance industry

Ardhyanto Budirachman

Trisakti University, Indonesia.

(*Email: ardhyanto@pa.adonai.co.id*)

Abstract

This research is motivated by the increasing distribution of consumer loans to retirees by the banking sector in Indonesia, but the availability of adequate life insurance protection does not match it. The retired group is classified as high risk due to age and health factors, making it difficult to obtain life insurance protection from insurance companies. This study aims to identify the factors that cause the scarcity of life insurance protection for retirees' credit, as well as analyze the influence of claims risk, capital adequacy, and reinsurance support on this scarcity. The research method uses an explanatory quantitative approach with surveys of insurance companies and financial institutions, as well as mediation analysis (moral hazard) and moderation (fraud and risk management capacity). The results of the study show that supply-demand imbalances, high claims ratios, limited capital, and weak reinsurance support are the main factors causing the shortage. The role of moral hazard and fraud also increases the risk of a scarcity of protection. This study concludes that collaboration is important between insurance companies, banks, and regulators to create an inclusive and sustainable life insurance protection model for the retiree segment.

Keywords: Claims risk, Credit life insurance, Indonesia, Moral hazard, Reinsurance, Retirees, Supply–demand imbalance.

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Transparency: The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

1. Introduction

The banking industry in Indonesia has shown significant developments in the distribution of consumptive loans, including to retirees. This group is part of a population that is still economically productive but has a higher risk of death due to age and health conditions. To mitigate the risk of default due to the death of the debtor, banks usually require life insurance protection [1, 2].

However, in practice, not many insurance companies are willing to provide life insurance protection for consumer loans, specifically for retirees [3, 4]. This has led to a shortage of life insurance products in this segment. This scarcity

impacts the high cost of premiums, limits credit distribution, and increases the risk burden that banks must bear. As a result, the goals of financial inclusion and life risk protection are not optimally achieved [5, 6].

This situation demonstrates an imbalance between the demand side of the banking industry, which requires risk protection, and the supply side of limited insurance companies. Factors contributing to this include high claims relative to premiums, low reinsurance support, limited capital, potential fraud, and geographical challenges in verifying and monitoring risks [7].

Previous research by Prasetyo and Lestari [8] and Jae [9] "The role of moral hazard in retirement financing: empirical studies on regional banks examines how moral hazard practices affect the provision of financing to retired customers. Their research results show that the lack of selection of debtors' eligibility and reliance on insurance protection lead to a high risk of default, which ultimately influences financial institutions' decisions to limit credit disbursement to the elderly group.

Furthermore, Nasution and Raharjo [10] and Anggraini et al. [11] systematic fraud in life insurance claims and its impact on portfolio sustainability. This study discusses the problem of false and manipulative insurance claims that often occur in life insurance. It found that fraud in the form of fictitious claims and misuse of medical information has a significant impact on the stability of insurance companies' portfolios, especially in the context of credit protection for high-risk groups such as retirees.

This research offers a scientific novelty by raising an issue that is still rarely touched, namely the scarcity of life insurance protection for consumer loans, specifically for retirement age. In the context of the financial industry in Indonesia, the pensioner segment is a growing group, but there is still little attention paid to the development of life insurance products that are integrated with credit facilities.

In contrast to previous studies that tended to focus on technical risks and the general performance of insurance companies, this study combines a theoretical approach of supply and demand in the context of life insurance with an integrated risk management model, as well as considering mediation variables (moral hazard) and moderation (fraud and risk management capacity). Thus, this research is not only theoretical but also applicable in providing policy solutions and product innovation [12].

This research offers a scientific novelty by raising an issue that is still rarely touched, namely the scarcity of life insurance protection for consumer loans, specifically for retirement age. In the context of the financial industry in Indonesia, the pensioner segment is a growing group, but there is still little attention paid to the development of life insurance products that are integrated with credit facilities. This scarcity has a direct impact on limited access to financing and increased credit risk in banking institutions [13].

In contrast to previous studies that tended to focus on technical risks and the general performance of insurance companies, this study combines a theoretical approach of supply and demand in the context of life insurance with an integrated risk management model, as well as considering mediation variables (moral hazard) and moderation (fraud and risk management capacity). The use of quantitative causal models in testing the determinants of the scarcity of insurance protection in the high-risk segment is one of the theoretical contributions that has not been explored empirically in Indonesia.

Furthermore, this research is expected to contribute to insurance product design innovation, regulatory policy formulation, and the development of a collaborative framework between the banking and insurance industries, especially in creating an inclusive and sustainable life insurance protection model for retirees.

This study aims to identify and analyze various factors that cause the scarcity of life insurance protection against consumer credit for retirees. In addition, this study also aims to examine the relationship between claims risk, capital adequacy, and reinsurance support to the scarcity of protection. Furthermore, this study will evaluate the role of fraud and risk management capacity as moderation variables that can strengthen or weaken the influence of risk factors on the availability of protection. Additionally, this study examines the role of moral hazard as a mediating variable in the relationship between debtor selection and the scarcity of insurance protection. Finally, this study aims to formulate strategic recommendations for insurance companies, banks, and regulators in overcoming the problem of scarcity of protection.

The benefits of this research are expected to contribute to the development of economic theory and risk management in the context of the supply and demand of life insurance products, especially for high-risk segments such as the retirement group. In addition, the empirical model tested in this study can also serve as a reference for similar future studies.

2. Research Methodology

2.1. Types and Approaches to Research
This research is an explanatory quantitative study with a survey approach. The aim of this approach is to elucidate the causal relationship between the variables that cause the scarcity of life insurance protection against retirement-specific consumer credit, as well as to examine the role of mediation and moderation variables in these relationships.

2.2. Population and Research Sample
The population in this study includes two main groups that are directly related to the provision and utilization of life insurance products for retiree credit. The first group is life insurance companies operating in Indonesia, especially those that have a portfolio of credit life insurance products. The second group consists of banks or other financial institutions that distribute credit to retired customers. These two groups were chosen because they play an important role in determining the availability, spread, and management of risks related to life insurance protection products for retiree credit.

This study employs a purposive sampling technique, which involves the deliberate selection of samples based on specific criteria relevant to the research's objectives. The sample includes life insurance companies that have previously

offered or are currently offering life insurance products for retirees' credit, as well as banks or financial institutions with a dedicated financing portfolio for the retiree segment. The planned sample size is 10 insurance companies and 10 financial institutions. This selection aims to obtain representative data and to accurately describe the actual dynamics in the field, particularly concerning the causes of protection scarcity and the factors influencing it.

2.3. Data Collection Techniques

Data collection in this study was carried out through three main methods to ensure the completeness and validity of the information obtained. First, a structured questionnaire was distributed to risk managers, actuaries, and analysts in insurance companies, as well as credit analysts in financial institutions, in order to obtain quantitative data and professional perceptions of issues related to risk, moral hazard, and scarcity of protection. Second, in-depth interviews were conducted with key sources from authoritative institutions such as the Financial Services Authority (OJK), the Indonesian Life Insurance Association (AAJI), and relevant banking associations to explore policy and regulatory perspectives that affect industry dynamics. Third, this research will also utilize secondary documentation such as company annual reports, industry statistics, and official data published by OJK, AAJI, and the Central Statistics Agency (BPS) to enrich the analysis and support field findings.

Table 1.
Variable Operational Definition.

Variable	Definition
Claims Risk	The level of potential claims that exceed the premium calculation in the pensioner segment.
Capital Adequacy	The inability of insurance companies to provide sufficient risk reserve funds.
Reinsurance Support	The willingness and capacity of the reinsurance company to bear part of the risk.
Moral Hazard (mediation)	Changes in banking/debtor behavior due to insurance protection available.
Fraud (moderation)	The debtor's manipulative actions give rise to fictitious claims.
Risk Management Capacity	The ability of insurance companies to identify, assess, and manage risks.
Scarcity of Life Insurance Protection	The insurance industry's lack of preparedness in providing products for retirees' credit.

2.4. Data Analysis Techniques
1. Descriptive Analysis: To describe respondent profiles, frequency of responses, and data distribution.
2. Validity and Reliability Test: To ensure the questionnaire instrument is feasible to use.
3. Multiple Regression Analysis: To test the influence of free variables on bound variables.
4. Mediation and Moderation Analysis: Using the PROCESS Hayes approach or Structural Equation Modeling (SEM) to test the role of moral hazard and fraud/quality risk management as mediators and moderators.

Table 2.
Variables, Dimensions, and Research Indicators.

Variable	Dimension	Indicators	References (2019–2024)
Claims Risk	Debtor mortality rate	Frequency of death claims Claim-to-premium ratio	Siregar [14] and Asosiasi Asuransi Jiwa Indonesia (AAJI) [15]
	Fraud claim rate	Number of problematic/fictitious claims Value of unpayable claims	Nasution and Raharjo [10]
Capital Adequacy	Solvency	RBC (Risk-Based Capital) Paid-up capital and technical reserves	Asosiasi Asuransi Jiwa Indonesia (AAJI) [15]
	Risk tolerance	Risk-to-capital ratio Business restriction decision	Kyung [16]
Reinsurance Support	Reinsurance capacity	Percentage of risk reinsured Number of reinsurance partners	Stuart [17] and Stuart [18]
	Quality of partnerships	The level of claims received and paid by the reinsurer	Promise [19]
Moral Hazard (Mediation)	Debtor's selection behavior	Weak selection of debtor eligibility; increased financing to high-risk groups.	Pauly [20] and Prasetyo and Lestari [8]
	Dependence on insurance	Reduced risk mitigation standards due to protections	Rejda [21]
Fraud (Moderation)	Manipulation of claims data	Frequency of false claims, misuse of medical information	Nasution and Raharjo [10]
	Illegal claim submission scheme	Internal audit findings Internal & external investigations	Asosiasi Asuransi Jiwa Indonesia (AAJI) [22]

Risk Management Capacity (Moderation)	Availability of policies & procedures	Presence/absence of risk assessment SOPs Active risk management unit	Asosiasi Asuransi Jiwa Indonesia (AAJI) [15] OJK Guidelines
	Monitoring & Audit Capabilities	Frequency of internal audits and risk management scores in regulator assessments	Isak [23] and Prasetyo and Lestari [8]
Scarcity of Life Insurance Protection (Dependent)	Supply-demand imbalance	Number of policy closure denials, and premium increase for retiree credit.	Ardhyanto [24]
	Product availability	Number of life insurance products for active retiree credit Regional distribution scale of life insurance products for retirees	Asosiasi Asuransi Jiwa Indonesia (AAJI) [15] and Siregar [14]

3. Results and Discussion

3.1. Result

This research involved 20 institutions, consisting of 10 life insurance companies and 10 financial institutions that actively provide credit to retirees. Respondents were spread across several main operational areas in Indonesia, such as Java, Sumatra, Kalimantan, and Sulawesi. The number of employees at each institution ranges from 50 to 300 people, with years of establishment varying between 1990 and 2020. This shows that respondents reflect companies with a wide range of organizational age and geographic coverage. A summary table of respondent characteristics can be seen in Figure 1.
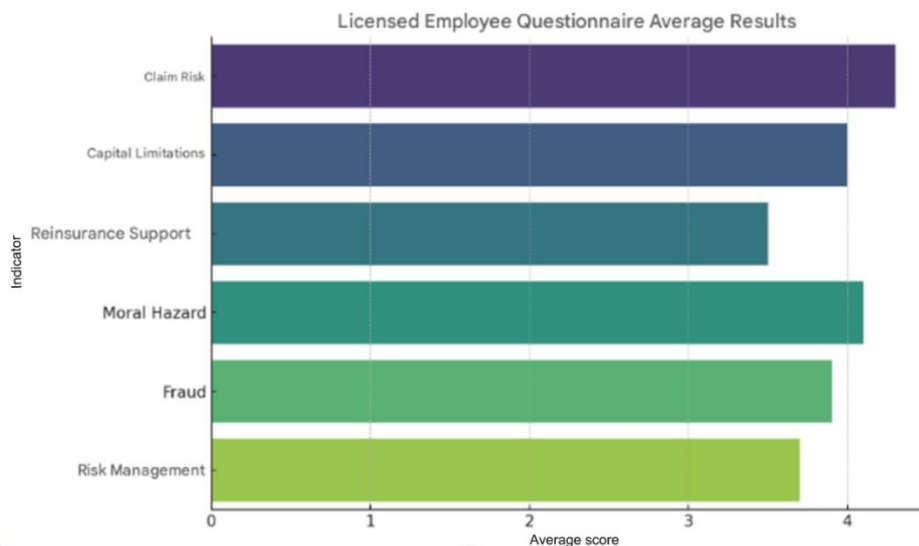

Figure 1.
Average results of the licensed employee questionnaire related to factors causing scarcity of life insurance protection.

3.2. Findings from the Licensed Employee Questionnaire

A total of 40 professional employees from both sectors filled out a questionnaire that measured their perceptions of six key indicators. The average score (scale 1–5) indicates a high tendency towards factors that cause the scarcity of protection.

Table 3.
Average score of employee perception of factors causing the scarcity of life insurance protection for retirees.

Indicator	Average Score (1–5)
Claims Risk	4.3
Capital Adequacy	4.0
Reinsurance Support	3.5
Moral Hazard	4.1
Fraud	3.9
Risk Management	3.7

3.3. Observation Results

Direct observation of internal documentation and policies at 10 institutions shows that only three insurance companies have life insurance products explicitly intended for retired customers. These products also have significant limitations, especially at the low maximum age limit, which is around 65 years old, when in fact many retirees still apply for credit until the age of 70. In addition, the observation results also noted the absence of an integrated risk management system

specifically to handle the retiree segment. The absence of this system is mainly seen in the aspect of mitigating potential fraud and in evaluating risks related to moral hazard [25].

3.4. In-Depth Understanding of Supply and Demand Imbalance

This research is expected to systematically map the imbalance between the protection needs of the banking sector and the ability and willingness of the insurance industry to meet them. These results will show the gap between product availability and the actual risks assessed by insurers, particularly in high-risk segments such as retirees. Identify the main determinants of protection scarcity.

This research is expected to identify in depth the main factors that cause the scarcity of life insurance protection, especially in the context of credit financing for retirees. Some of the factors that are suspected to contribute significantly to this problem include the high ratio of claims to premiums, which reflects an imbalance between claims expenses and premium income, thus disrupting the sustainability of the life insurance portfolio [25].

In addition, the limited capital of insurance companies to form adequate technical reserves is also a major obstacle in providing long-term protection for the elderly segment. This problem is exacerbated by the weak support from reinsurance, especially in bearing the high risk of mortality at retirement age, which causes insurance companies to become increasingly cautious, even tending to avoid this segment.

On the other hand, inaccuracies in mortality data and underwriting processes for the elderly group also increase the risk of incorrect selection and moral hazard, thereby widening the gap between the demand and supply of life insurance products. Therefore, through this research, it is hoped that a more comprehensive understanding of the root of the problem of scarcity of protection can be obtained, as well as providing strategic input for stakeholders in designing more effective and sustainable solutions.

3.5. Empirical Test of the Role of Mediation and Moderation

In addition to identifying the factors causing the scarcity of life insurance protection, this study also aims to examine the relationship between variables in more depth through a quantitative approach. The main focus lies on two important aspects of risk dynamics and decision-making in the insurance industry.

First, this study examines the mediating role of moral hazard in influencing the relationship between the debtor selection process and the occurrence of scarcity of protection. In this context, it is assumed that inaccuracies in the selection of potential debtors, especially in the retiree segment, can increase the potential for moral hazard, which then impacts the company's decision to limit or even stop offering life insurance products to the group.

Second, this study will analyze the role of the moderation of fraud factors and risk management capacity, namely the extent to which these two variables can strengthen or weaken the influence of risks faced by companies on the decision to close or restrict life insurance for retirees. In this case, fraud is seen as a factor that increases uncertainty and potential losses, while risk management capacity acts as a balancing tool that can mitigate the impact of these risks [26].

By examining the role of mediation and moderation, the research is expected to enrich the literature on behavioral risk in the context of the financial and insurance industries, especially in facing the challenges of life insurance protection for high-risk segments such as retirees. This approach also contributes to the development of more adaptive and behavior-based risk mitigation strategies.

3.6. Discussion

Interviews were conducted with the management of 10 insurance companies and 10 financial institutions. Most of the speakers stated that the main risk in providing life insurance protection to the retiree segment is the high mortality rate and uncertainty of life expectancy. Insurance management complained that the premiums earned were not proportional to the ratio of claims to be paid. This is exacerbated by the limited support from reinsurers, who are reluctant to bear the risks of the elderly segment.

One senior actuary stated, "We are facing a dilemma between social protection and portfolio sustainability. Every time we receive a retiree portfolio, we need to conduct a very rigorous selection, but this actually narrows inclusion."

From the perspective of financing institutions, they also stated that the difficulty in obtaining life insurance for retirees caused delays in the credit disbursement process, and in some cases, prevented loans from being distributed altogether. This has a direct impact on achieving credit distribution targets and the financial performance of the institution.

3.7. Discussion of Questionnaire Results

The results of a questionnaire given to 40 professional employees showed that perceptions of the causes of the scarcity of protection were very strong. The highest scores were found in the claims risk (4.3) and moral hazard (4.1) indicators, which indicate that these two variables are considered to contribute the most to the scarcity of protection.

Capital adequacy and fraud also rank high (4.0 and 3.9). This shows that it is not only external risks that are obstacles but also internal limitations within the insurance company. Risk management scored 3.7, indicating that there is still room for improvement in risk mitigation systems and policies in the sector.

The interpretation of this questionnaire data confirms that the internal perception of industry players aligns with the managerial views revealed in the interview. In other words, the problem of scarcity of protection is not only a technical issue but also a systemic one.

3.8. Analysis of Observation Results

Observations of the documents and internal policies of insurance companies show that only 3 out of 10 companies have specific products for retiree credit. The product also has many limitations, such as a maximum age limit of 65 years and very strict pre-existing condition requirements.

Most companies do not have standard operating procedures (SOPs) that govern risk management for the retiree segment. In addition, the underwriting system is still manual and not integrated with national health data, increasing the risk of misselection and openness to fraud.

From the financial institution's side, there are no exclusive partnership agreements with insurance companies, which makes the credit protection process highly dependent on individual negotiations on a case-by-case basis. This leads to inconsistencies in the provision of protection.

The findings of this study are in line with the results of a study by Prasetyo and Lestari [8], which revealed the role of moral hazard in exacerbating the scarcity of protection for retirees. In the study, the selection of debtors that is not strict increases the chances of fraud and default.

Furthermore, a study by Nasution and Raharjo [10] also highlighted the high rate of fraud in life insurance claims, which worsened the performance of insurance companies' portfolios and decreased confidence in the retiree segment.

The study yields several practical implications that can be applied by industry players and regulators:

1. Insurance companies need to develop protection products with a risk-sharing model, so that the risks to retirees can be borne collectively.
2. Financing institutions are advised to establish strategic cooperation with insurance companies so that the certainty of protection can be increased.
3. Regulators need to develop incentive policies for reinsurers willing to bear the risk of old age.
4. It is necessary to establish a national system of health data integration to support a more precise and faster underwriting process.
5. Digital inclusion can be optimized through InsurTech to detect fraud and reduce operational costs.

This study has several limitations that need to be noted. First, the limited sample size includes only 20 institutions, so generalizations to the entire industry must be made carefully. Second, the study has not included broader macroeconomic analysis, such as the effect of inflation or changes in monetary policy on credit insurance performance. Third, observations are carried out over a limited period, so potential changes in market dynamics may not be fully captured.

Going forward, further research is recommended to use a longitudinal approach and involve more actors, including regulatory authorities and industry associations, so that the understanding of this issue can be expanded and the solutions offered are more comprehensive.

3.9. Policy Recommendations and Product Innovation

This research is expected not only to make a theoretical contribution but also to formulate recommendations applicable to key stakeholders in the life insurance and retirement financing industry. For insurance companies, the results of this research are anticipated to serve as a basis for designing life insurance protection product innovations that are more inclusive and sustainable. One approach to consider is the implementation of a risk-sharing model, which involves risk sharing among companies, customers, and third parties such as the government or guarantee institutions. Additionally, developing bundling products that combine life insurance with retirement savings is a strategic option to enhance the attractiveness and sustainability of these products. On the other hand, government support in the form of guarantee schemes or participation in social insurance programs can be a solution to expand coverage for the elderly.

For regulators, this research is expected to provide a strong foundation for formulating policies that support the sustainability of life insurance protection in the retiree segment. Some potential policy recommendations include premium subsidies for high-risk segments, incentives for reinsurers willing to bear the risk of old age, and systematic efforts in the collection and standardization of national actuarial data, specifically for retirees. With targeted policies, regulators can encourage the creation of a protection ecosystem that is more equitable and efficient and reaches community groups that have not been optimally served.

4. Conclusion

The scarcity of life insurance protection for consumer loans, specifically for retirees, is a serious problem caused by the imbalance between demand and supply in the insurance market. The high demand from the banking sector is not balanced by the availability of adequate protection products from insurance companies. This is due to the high risk of claims, limited capital, weak reinsurance support, and potential moral hazard from the debtor's side. By identifying the causative factors and analyzing the impact of this scarcity on the banking and insurance industries, this research is expected to produce strategic solutions that can encourage the formation of a more inclusive life insurance protection ecosystem, especially for the elderly who are still financially productive.

4.1. Recommendations

1. For insurance companies, it is recommended to develop products that are specific to retirees, with a data-driven risk management approach and cooperation with reinsurance.
2. For banks, it is necessary to improve the quality of debtor selection and establish strong partnerships with trusted insurance providers.

3. For regulators, the OJK and MUI need to develop incentive regulations and risk mitigation policies to strengthen insurance support for retiree loans.

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