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Moderating Impact of Underwriting Risk on the Relationship Between Firm Specific Factors and Insurance Financial Inclusion in Kenya

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ABSTRACT

Purpose: The study further determined the moderating impact of underwriting risk on the relationship between firm specific factors and insurance financial inclusion in Kenya.

Design/Methodology/Approach: Longitudinal research design was adopted in guiding time series data with target population of 58 insurance firms of which all were censured. Secondary data was obtained for a 10-year period commencing from 2015-2024 being a period which has witnessed the intermittent performance of the insurance industry, a number of regulatory reforms introduced as well as tax related concerns.

Findings: There was a positive statistically significant relationship between firm specific factors and insurance financial inclusion in Kenya (Adj R^2 0.4201: p 0.000< 0.05). Underwriting risk had a weak negative significant moderating impact on the relationship between firm specific factors and insurance financial inclusion in Kenya (Adj R^2 0.4488: p 0.000< 0.05).

Implications/Originality/Value: The study recommends that insurance firms should design policies that will salvage them from underwriting risk such as a clause of remitting considerable premiums for a given claim this will caution from losses as a result of underwriting risk.

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Introduction

Insurance market thus readily tapers into the excellence aim of financial inclusion outcomes of returns and diversified market (Macharia, 2019). The efficient structure theory provides the fundamental principles of the financial inclusion of insurance firms. The idea of insurance is defined by the distribution of losses or risk between two parties, which is enabled by a financial

transaction referred to as premium (Morara, 2020). Underwriting risk is the possible financial loss encountered in the assessment and evaluation of risk especially when the insurance premiums raised is not sufficient to cover the claims (Morara, 2020).The principle of underwriting risk refers to the possibility of financial loss in the process of evaluation and assessment of risk, especially when the insurance premiums paid in are insufficient to satisfactorily cover the claims made (Msomi & Nzama, 2023).

Liquid insurance companies are free to invest in outreach and marketing efforts that can be directed towards underserved populations (Mutua, 2023). The United States recorded the growth of its insurance industry liquidity position by 3.5 percent in 2023, as compared to 9.5 percent in the United Kingdom, 7.4 in France, and 8.0 percent in Japan (Soumya et al., 2023). Statistics show that liquidity has a tremendous impact on insurance companies with Nigeria registering 15.4 per cent, liquidity impact in insurance sector, South Africa, 21.76 per cent, Tunisia, 31.5 and 21.3 percent in the liquidity impact in insurance sector (Elkhaldi, Naamane & Chikhaoui, 2024). In Kenya insurance companies are required to have a liquidity ratio of such an extent that they would be able to meet their short-term obligations and are usually set at a minimum of 20% (IRA, 2023). Report on stability of insurance firms by the Insurance Regulatory Authority (2023) indicated that Xplico Insurance was put under statutory management as Invesco Assurance Company Limited in liquidation (Insurance Regulatory Authority, 2023).

Thailand insurance solvency condition is not attractive as at least 10 companies have failed to conduct business normally (Workua & Asmare, 2018). The insurance coverage statistics in the world demonstrate a worrying trend in terms of quality of insurance. There is low claims settlement as compared to claims filled in most insurance firms that cause financial inclusion issues. In Bangladesh, the insured population of the total population of 160.9 million is only 15.37 million, which is only 9.6. A even lower figure was observed in the Kyrgyz republic with 113 thousand insured out of its 6 million inhabitants which is 1.8. In the same light, Nigeria presents a grim picture with only 2.25 million people insured among 177.5 million in the country, which amounts to 1.2 percent (The Economist Intelligence Unit, 2024). South Africa is the country that now holds the leading position in the insurance market in the African continent, but the solvency state is at 18% of gross premiums and 14 of the life insurance premiums of the region (Meher and Zewudu, 2020). Insolvency has been documented in Kenya amongst insurance companies and failure to pay has led to fines in shaky companies like Trident Insurance Company and Intra Africa Assurance (IRA, 2023). A solvency margin is required in Kenya, which normally means that the insurers should have at least 1.0 solvency ratio, i.e. liabilities should not exceed the accessible resources (IRA, 2023).

Underwriting risk refers to the possibility of an insurer incurring losses due to improper pricing or an insufficient assessment of the risk when underwriting a policy. The OECD (2017) assumes that the underwriting risk plays a central role in the development of the insurance markets in the European insurance market. Underwriting risk can be very high and can bring a significant financial burden to an insurer (Wangui, 2020). Considering the above, the underwriting risk can have a direct impact on the underwriting insurance financial inclusion within an economy. The information asymmetry theory has been utilized on issues of underwriting concept of risk whereby when information is distorted, industry players fail in their part hence causing risks (Morara, 2020).

Poor insurance financial inclusion occurs in insurance companies as shown in Africa whereby, South Africa is among the leading countries in insurance usage at 17% and Kenya is the third lowest country in insurance usage at 3% (IRA Annual Reports, 2022). In Kenya calamities like rain and floods need salvage in the insurance financial inclusion in the insurance. This is informed by the fact that rainfall and floods have been on the increase in Kenya (Disaster Risk

Financing and Insurance, 2022) since the pests like locust invasion in Kenya hit the livestock index insurance (Kenya Livestock Insurance Program,2023). Moreover, livestock index insurance in Kenya has not been addressed. It is on this basis that insurance financial inclusion is a necessity with hope to overcome the challenges.

The insurance industry has several signposts of setback that are low usage indicators. The use of financial knowledge on insurance service has been cited as insufficient to the citizenry and has been occasionally advertised by media (IRA, 2023). Insurance penetration in Kenya is estimated to be 2.34, which is very low considering that the population of Kenya is more than 40 million. This is a very low percentage compared to the continent average of 3.65 percent and the world average of 6.28 percent (AKI, 2023). The insurance companies are operating within a niche market with low usage (Morara, 2020).

Statement of the Problem

Kenya is prone to disasters at a tune of 70% and natural disaster causal factors such as rainfall and floods on the increase heralding the necessity of insurance financial inclusion mechanism (Disaster Risk Financing and Insurance, 2022). Agriculture has been crippled by the pests like locust invasion in Northern Kenya since the index insurance of livestock has not been high (Kenya Livestock Insurance Program, 2023). The health insurance has been biased towards the working with SHIF still not indicating the financial inclusion desires (Ministry of Health, 2022). Over the last ten years in Kenya, a number of insurance companies have been shut down and eventually liquidated including BlueShield Insurance and Concord Insurance and Xplico Insurance Limited has been put under statutory management. Moreover, the insurance regulatory authority (2023) report on the stability of insurance companies showed that the unstable firms like Intra Africa Assurance were fined (Insurance Regulatory Authority, 2023).

The intermittent performance measured by ROA of insurance sector indicate instability of Kenyan insurance sector for 2015-2024: thus an increase of 13% for 2014 to 2015, a decrease of 16% in 2015 to 2016, an increase of 9% in 2016 to 2017, a decrease of 17% from 2017 to 2018 and an increase of 5% for 2018 to 2019, decrease of 3.6% in 2019 to 2020, a decreased of 3.2% in 2021 to 2022, 2.3% increase in 2022 to 2023. Contextual gap exist as presented in a Nigerian study by Ehiogu (2022) that was conducted on financial inclusion of insurance yet did not succeed in eliciting firm specific factors. Lastly sector gaps based on firm specific factors learned on banks (Kuria et al., 2024). Due to the above gaps and the authority grievances the study was able to study the effect of underwriting risk on the correlation between firm specific factors and insurance financial inclusion in Kenya.

Objective of the Study

i. To determine the impact of firm specific factors on insurance financial inclusion in Kenya.
ii. To determine the moderating impact of underwriting risk on the relationship between firm specific factors and insurance financial inclusion in Kenya.

Research Hypothesis

H_{o1}: Specific factors have no significant impact on insurance financial inclusion in Kenya.
H_{o2}: Underwriting risk has no moderating significant impact on the relationship between firm specific factors and insurance financial inclusion in Kenya.

Theoretical Framework: Efficient Structure Theory

Demesetz developed the Efficient Structure Theory (also known as the Efficient Market Hypothesis) in 1973. Its principles are based on the well planned performance structure hypothesis. The concept is that, those firms with an increased competitive intensity will tend to

demonstrate enhanced performance and thereby expansion and an increase in scale which consequently leads to an augmented concentration in the industry. Insurance companies which grow optimally open chances of increased inclusivity. The underprivileged in the society would ultimately be relieved, by efficient insurance market which is on the rise. The market would then salvage the uncovered market by proper financial strategies.

Capital availability is associated with efficient insurance market and thus insurance companies will be efficient in case the rules of capital adequacy of regulations are respected. The level of buffer capital would guarantee the insurance companies are hedged to take care of its customers and even increase the market size (Njoroge, 2023). High profitability in insurance companies has been reported to imply that the liquidity position is beyond doubt and cases of insolvency are not an option. Aspect of efficiency would involve the firm liquidity level at the requirement levels, the number of liquid assets would be significant in identifying efficiency of insurance firms, as solvency total assets to total liabilities are thus well maintained (Ehiogu, 2022).

As a result, this hypothesis assumes that the increase in the concentration of the market is associated with the improvement in the productivity of the market. The conclusion of the market concentration eventually creates a solid basis of inclusivity. Market concentration by insurance companies extends to the uncovered market as capital base coupled with solvency and liquidity muscles drive the coverage of more markets thus financial inclusivity (Too & Simiyu, 2018). The concentration in the market creates the size of the firm. Extensive coverage means expansion of the company as the premiums paid forms part of the asset base of the insurance companies. Insurance firms assets determines the size of the firm and it is on this assets particularly the premiums that the capital is enhanced, liquidity enhanced and solvency tackled, thus cumulatively resulting in efficiency of the market that gets into financial inclusiveness. Lare insurance companies are more appealing, and hence by further subscriptions results in the inclusion (Mutumira, 2019). Moreover insurance companies with ability size guarantees more products which would cover more people.

A research conducted by Maseki, Kung'u, and Nderitu (2019) with the aim to investigate the hypothesis of efficiency systems in insurance companies found that asset quality is an indicator of the financial inclusion ability. The inclusivity of insurance companies can be measured by the assets as an indicator of their ability to boost the number of customers. The conditions that lead to the principle of efficiency in structure require that there are sufficient resources. It is therefore important that insured persons are indemnified against the risks. However, in a few cases, the insurance firms are faced with losses as a result of paying damages that are higher than what the insurers pay and, as a result, underwriting risk arises. It has been reported that with efficient market hypothesis underwriting risk can be resolved as a balance would be hit between those who pay more than compensated and those who benefit more than contributed. This therefore provides justifications to an efficient market hypothesis. Financial inclusion is based on such efficiency.

The efficient structure theory remains relevant in the understanding of the dynamics of insurance markets and resource allocation, thus affecting capital adequacy, solvency, liquidity and quality of assets, which are critical in promoting financial inclusion. Morara and Sibindi (2021) discuss the consequences of market efficiency on investors (insured), the issues of market (financial inclusion), the importance of market anomalies (inclusiveness), and limitations of informational efficiency. Fama (1991) discusses the efficient market hypothesis and the implications of this assumption on empirical studies, market anomalies and the effectiveness of different sources of information.

Fama and French (1993) build on the efficient market hypothesis by introducing the three factor model that combines size and value factors with market risk. This model is also focused on the

importance of the firm size variable, which can be included in it and improves the ability to measure the effectiveness of different insurance companies. The value dimension brought about by the three-factor model is the financial inclusion dimension whereby the value of an insurance company arises out of its ability to expand via avenues of inclusion.

Critics argue that the evidence empirically more often often discovers market inequalities and trend that are antithetical to the predictions of the Efficient Market Hypothesis. The abnormalities witnessed in the insurance companies are associated with value and size premiums, time premium charges. These aspects suggest that the prices of assets could be out of line with their underlying values and exhibit discernible trends over a period of time (Ehiogu, 2022). Critics claim that the presence of such anomalies discredits the idea of market efficiency and indicates that insurers can be able to attain abnormal returns by taking advantage of the inefficiencies in financial markets, which, in its turn, can eventually affect financial inclusion.

Opponents to the Efficient Market Hypothesis argue that the theory ignores the effects of market base dynamics and psychological biases. Behavioral finance research has explained various cognitive and emotional biases such as overconfidence among insurance subscribers, losses suffered by insurance companies as a result of underwriting risks, herding behavior and anchoring. Such biases may lead to systematic mispricing of assets, creating a possibility of arbitrage and speculation, making it difficult to achieve financial inclusion (Kebede, Tesfaye & Erana, 2024). Critics also hold that such biases in behaviors can undermine market efficiency by distorting the perceptions of risk and returns by the insurers and consequently, there is less adoption of insurance products thus derailing the goal of financial inclusion. Critics argue that despite the existence of market inefficiencies, a variety of institutional considerations, such as insurance leadership and practical limitations imposed by regulatory frameworks, and liquidity and solvency considerations, could make arbitrageurs not exploit those opportunities successfully.

However, the benefits outweigh the drawbacks, which implies that the efficient market hypothesis can be used as a guiding rule to insurance companies to provide financial inclusion (Gitau, 2019). The discussion of capital adequacy, asset quality, solvency, liquidity, firm size and underwriting risks, and financial inclusivity of insurance companies, is deeply rooted in the concept of an efficient structure theory.

Empirical Review

Kusi, Alhassan, and Sai (2020) attempted to explore the interaction of regulations, underwriting risk, and firm outcomes. The study has considered insurance firms in Ghana where regulations are analyzed with respect to their effect on firm returns. Thirty firms were studied and data processed by panel regression and ordinary least squares. The conclusion of the results in the two cases was that regulations increased the risk of underwriting. In contrast, the underwriting risk had a significant moderating effect on insurance-related regulatory and financial performance of companies. There are a number of gaps that it is important to outline in terms of moderated relationship between the risk of underwriting, insurance regulations, and financial performance. This relationship has a different approach as the underwriting risk was guided by factors specific to firms and the financial integration of insurance companies hence highlighting the gaps in constructs. The use of financial performance as the dependent variable compromises the objectivity of financial inclusion which is one of the issues that this study attempts to address.

Wongsuwatt et al. (2020) studied how the underwriting risk moderation affects the relationship between the size of firms and financial performance of insurance companies. The study collected secondary data in the databases of 52 insurance companies in Thailand. The results of the Ordinal least square regression and the fixed effects model showed that underwriting risk negatively

affects the financial performance of the non-life insurance companies. This study focused on financial performance and not financial inclusion and it specifically focused on the insurance market in Thailand, unlike the insurance market in Kenya.

Pathirana and Buddhika (2021) aimed to enhance their knowledge on the factors affecting the performance of insurance companies in Sri Lanka. This research involved the use of secondary data. Data analysis of the obtained data was carried out using the descriptive statistics and regression models. The study showed that underwriting risk did not have a considerable moderating effect on the liquidity and profitability of the life insurance companies in Sri Lanka. The Sri Lankan market was the focus of the study as opposed to the Kenyan market which is the area under the present investigation. The interaction of underwriting risk has softened the relationship between liquidity and performance as opposed to the current study where the role of underwriting risk is to level off the relationship between firm-specific factors, which liquidity is part of and financial inclusion, thus bridging the gap in the construct.

Oyetayo and Abass (2020) have made an extensive analysis of the underwriting abilities and the ensuing firm returns in the insurance industry. This paper will seek to analyze how joint underwriting factors impact on the financial performance of the non-insurance firms in Nigeria. The analysis of 41 annual reports of non-life insurance companies was the cornerstone of this research aimed at deriving the information needed to be used in this paper. The variables that were linked to the underwriting were determined to have a significant impact on the financial performance of insurance businesses. It focused on non-life insurance companies which led to a biased view; therefore, the current research will include both the life and non-life insurance industries. The area of the research is based on the comparative study of the Nigerian insurance market and the Kenyan insurance market. The applicability of financial performance as the dependent variable fails to sufficiently respond to the question of financial inclusivity in the insurance companies hence the need to conduct the current study. Using the underwriting risk as an independent variable as opposed to a moderating variable implies that a different approach is required, and so the findings cannot be used to meet the purposes of the study.

Meher and Zewudu (2020) performed a profound research on the issue of firm-specific factors and how they influence the financial performance of insurance companies. This study has looked at nine Ethiopian insurance companies. Results were obtained by ordinary Least Squares models. It was clear that underwriting risk was a moderating factor to the relationship between the firm-specific factors and the performance of insurance entities. The increase in assets has also helped in improving the returns of the firms. On the other hand, growth of economy and the liquidity level boosted the financial performance of the companies. The former research only included 9 companies, but the current research involved 58 companies. The Ethiopian insurance market has some significant differences in comparison to the Kenyan one. The study considered financial performance as a dependent variable thus unveiling the existing problem of financial inclusivity among insurance companies.

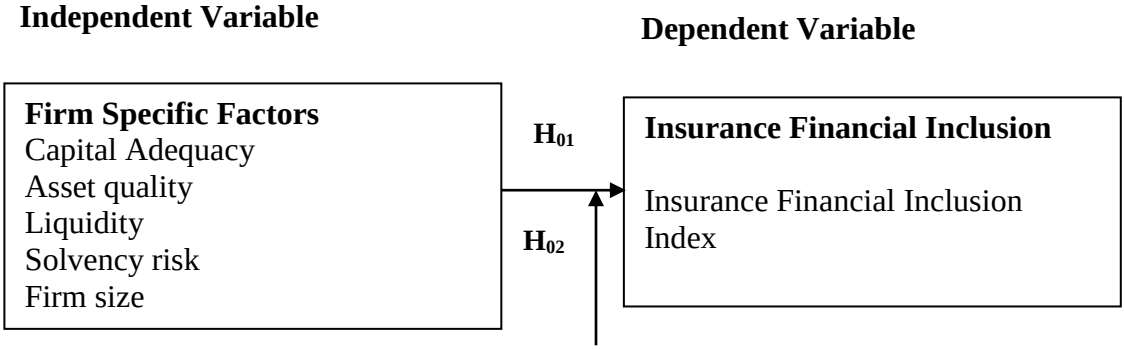
Teklit and Jasmindeep (2021) in Ethiopia performed a study to investigate the effects of underwriting risk on the financial performance of insurance companies, using panel data study with ten years of data between 2006 and 2015. Hausman test revealed that a fixed effect model was selected and showed that the influence of underwriting on the profitability of insurance companies was not significant. However, the effect on profitability was negative with an underwriting risk of level 0.05. The current study tested underwriting risk applicability as a moderating variable, as compared to the other study, which tested it as an independent variable. Furthermore, the Ethiopian insurance market has its unique traits as compared with the Kenyan insurance market. Financial inclusion was the subject of the current study as opposed to financial performance in its application.

Morara and Bongani (2021) carried out an assessment of the solvency, underwriting risk and financial performance of insurance businesses in Kenya. The information to be examined had been obtained in the annual reports of the insurance regulator. To carry out an extensive analysis of the data, correlation statistics and descriptive statistics have been used. This study reveals that underwriting risk is a significant moderating factor in the relationship between the financial condition of the firms and solvency with solvency also showing a positive effect. The solvency and financial performance have been moderated by the risk of underwriting, whereas in the current research, the risk of underwriting moderated firm-specific elements, such as solvency and financial inclusion, leaving some gaps in the construct.

Njoroge (2023) conducted a study to find out the issues that affect the financial outcomes of the insurance firms in Kenya. The study also investigated how market share as a moderating variable impacts financial performance of insurance companies. The research relied on the information collected among different insurance companies in Kenya. Information based on the financial statements of the insurance firms between 2012 and 2020. The data analysis revealed valuable information regarding the factors impacting the financial performance. The regression model revealed that the risk of underwriting, the size of a firm, the growth of premiums, and the solvency significantly influenced the performance, and the impact was positive. However, when the independent variables of premium growth, underwriting risk, firm size, and solvency were introduced as the moderating variable, the financial performance of the firm was not significantly related to these variables. The results, thus, were not accurate, since the six companies listed insurance companies do not reflect the general state of the insurance industry in Kenya. Also, this research used a different moderator, market share, hence offering a unique methodological strategy. The objective of this study was not well presented in the resolution of financial performance as the dependent variable.

Senyo and Odei-Mensah (2024) conducted a research on the factors that influence Underwriting Performance in the Life and Non-Life Insurance Markets in South Africa between 2013 and 2019. The use of generalized method of moments in combination with regression techniques indicates that the following variables have a considerable and positive effect on the performance of underwriting: insurance size, market share and investment income. However, the growth of the premiums reduces the underwriting effectiveness in both industries. Non- life insurance and reinsurance have a positive correlation relationship but life insurers have an inverse relationship. Underwriting risk impact negatively on the performance of non-life in the four quartiles but the risk of life insurers presented negative results in the higher quartiles. The South African insurance market dynamics are unique in comparison to the Kenyan insurance market dynamics. Another perspective was taken in this study whereby, underwriting performance was the dependent variable. This was not sufficient in the concept of financial inclusion in the insurance industry as done in the study at hand.

Conceptual Framework



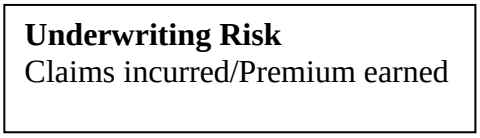


Figure 1: Conceptual framework

The conceptual framework shows the relationship between the variables as illustrated in Figure 1. The independent variables are firm specific factors that are mentioned in terms of capital adequacy, asset quality, liquidity, solvency risk and firm size. Here capital adequacy was in terms of core capital to risk weighted assets; quality of assets on basis of debtors to gross premium; liquidity looked at in terms of current assets to current liabilities; solvency risk on basis of total liabilities to total assets and firm size in terms of total assets.

Insurance Financial Inclusion Index (IFII) was used to measure financial inclusion as the dependent variable. The index brings on board information on different dimensions of financial inclusion therefore usage and quality within one value between 0 and 100 with 0 being full financial exclusion and 100 full financial inclusion. The result of IFII would represent the degree of insurance financial inclusion in Kenya and the higher the percentages, the more inclusive the insurance markets would be (Eladly, 2021).

Utilization was achieved by the subscribers of insurance covers. Quality, that is, satisfying needs of subscribers was measured by claims settlement ratio, claims settled. Underwriting Risk was a moderate between the firm specifics factor and financial inclusion and was indicated by the ratio of claims made to the premium earned.

Methodology

Research Philosophy: Reason behind this study embracing positivism research design is its natural science that is associated with observations (Ayiro, 2024). These observations were found on financial statements, science applied on doing inferential computations all the way up to diagnostic tests to regressions that included set scientific thresholds. Positivism refers to measures and objectivity (Ayiro, 2024) where ratios attracted measures and objectivity of financial inclusion. Positivism considers truth by using systematic, rigorous inquiry (Mbithi, 2023). This research was a systematic collection of information in 2015-2024 and conducted stringent tests including of diagnostics, correlation and regressions that yielded facts on the specific factors of firms, underwriting risk moderation and insurance financial inclusion in Kenya.

Research design: In this study, longitudinal design was used, which involves the collection of data of same group over a prolonged duration. This sample was identical hence insurance companies and years were 2015-2024.

Population: The sample used was 58 firms, which included Life Insurance Companies (23 firms) and which includes the firms offering products like life insurance, pensions and savings plans. General insurance Companies (35 firms) relies on non-life insurance products such as motor, health, property and liability insurance. The research entailed census thus data gathering of all the members of the population hence no sampling (Kothari, 2011).

Data collection: The current research used secondary data which was found on the official site of the IRA and the insurance companies respectively.

Data Analysis: Inferential statistics were applied in the study as correlation analysis and regression analysis were achieved**.**

Results and Discussion

The panel dataset was 580 firm-years in relation to 10-year base 2015 to 2024, which was formed

by annual financial reports at insurance regulatory reports of the 58 insurance firms.
According to Dharma (2018), a moderating variable is a variable that moderates the relationship between explanatory and dependent variables. By understanding the impact of the moderating variable (underwriting risk), the researcher could establish the actual level of association between the independent variables (capital adequacy, asset quality, solvency risk, liquidity and firm size) and the dependent variable (insurance financial inclusion). The effect of the moderating variable was measured by looking at the changes in the values of adjusted R2 and resultant changes in significance on p values and z values that could lead to moderator inclusivity. It was modeled as follows.

Table 1: Model 3-Independent, Moderating, Interaction and Dependent Variables

"Random-effects GLS regression			Number of obs =	580		
Group variable: FIRMID			Number of groups =	58		
R-sq:			Obs per group:			
within = 0.3803			min =	10		
between =0.6070			avg =	10.0		
overall = 0.4590			max =	10		
corr(u_i, X) = 0 (assumed)			Wald chi2(11) =	394.32		
Adj R-Sq: 0.4488			Prob > chi2 =	0.0000		
LNIFII(Y)	**Coef.**	**Std. Err.**	**z**	**P>z**	**[95% Conf.**	**Interval]**
LNCapital adequacy	.2256026	.0231875	9.73	0.000	.1801559	.2710493
LNAsset Quality	.0742544	.0292979	2.53	0.011	.0168316	.1316771
LNSolvency risk	.1688929	.051234	3.30	0.001	.0684762	.2693097
LNLiquidity	.1236414	.0308616	4.01	0.000	.0631539	.184129
LNSize	.1630786	.0517309	3.15	0.002	.0616879	.2644694
LNUnderwriting risk	-1.003809	.3396555	2.96	0.003	-1.669522	-.3380965
Mcapital1	.2625792	.0229876	11.42	0.000	.2175244	.307634
MAssetQuality1	.2373204	. 0451224	5.26	0.047	.1488821	.3257587
MSolvencyRisk1	.0958282	.0250503	3.83	0.010	.0467305	.144926
MLiquidity1	.1760232	.0306247	5.75	0.000	.1159999	.2360465
MFirmSize1	.1630786	.0517309	3.15	0.002	.0616879	.2644694
_cons	21.25259	.558529	38.05	0.000	20.15789	22.34728
sigma_u	.19556781					
sigma_e	.38801909					
rho	.20257223	(u_i)				

Model	**R^2**	**R2 change**	**p**	**Adjusted R^2 (approx.)**
1:	0.4247		0.000	0.4201
2:	0.4271	0.0024	0.000	0.4211
3:	0.4590	0.0319	0.000	0.4488

Source: Field data (2025)
In model three, LnIFII(Y) which is the firm specific factors are covered, underwriting risk and the relationship between firm specific factors and underwriting risk. The model resulted in an Adjusted R2 of 0.4488 thus 44.88 percentage of the change in insurance financial inclusion in Kenyan is highly influenced by firm specific factors. The addition of (IV*MV) interaction terms shifted adjusted R2 squared out of 0.4201 to 0.4211. The change was 0.001 and then between 0.4211 and 0.4488 increase of 0.0287 and significant as shown by p 0.00 which was not 0.05 therefore significant. This growth also suggested that the interaction of the underwriting risk

moderated the relationship between firm specific factors and insurance financial inclusion in Kenya. All the z values were bigger than 1.96 and p values smaller than 0.05 a good indication it has a strong effect. This observation is consistent with the results of Morara and Bongani (2021) that showed that underwriting risk makes a significant moderating effect in the relation between solvency and the financial status of the firms, and solvency also exhibits a positive effect.

The regression model hereby

$IFII(Y)_{it}=\beta_0+\beta_1X_{1it}+\beta_2X_{2it}+\beta_3X_{3it+}\beta_4X_{4it}+\beta_5X_{5it}+\beta U+\beta_6X_{1it*}U+\beta_7X_{2it*}U+\beta_8X_{3it*}U+\beta_9X_{4it*}U+\beta_{10}X_{5it}$ $_*U+\varepsilon$ is hence solved

$IFII(Y)_{it=}21.25+0.23CA+0.074_2AQ+0.169_3SR+0.124_4LQ+0.163_5SZ-$
$1.0U+0.26CAU+0.237AQU+0.0958SRU+0.176LQU+0.163SZU$

CONCLUSIONS

Underwriting risk has a weak negative but significant correlation with insurance financial inclusion. Further claims incurred were lower than premiums earned which was a good indicator that claims did not supersede earnings. The weak relationship warranties conclusions on ability to enable insurance financial inclusion.

RECOMMENDATIONS

The study recommends that insurance firms should design policies that will salvage them from underwriting risk such as a clause of remitting considerable premiums for a given claim this will caution from losses as a result of underwriting risk. The balance between claims incurred to premiums earned should be monitored by risk underwriter staffs to avoid losses.

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