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Effect of Firm Size on Insurance Penetration in Kenya

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Abstract: *The general objective of the study was to analyze the relationship between firm size characteristics and insurance penetration in Kenya. The study is based on the trade-off Theory. The study was based on positivists' research philosophy. This study adopted longitudinal research design and targeted all the 26 registered life insurance firms in Kenya, which were operational from 2011 to 2022 and had filed their audited financial statements with the insurance regulatory authority for the period (IRA, 2020). There were only 18 Life Insurance Firms that met the criteria for the study where such have been operated since the year 2011 which is the period of the study. The study therefore purposively took the 18 companies as the sample size suitable to attain the set objectives. Both primary and secondary data was collected. Primary data was collected using a questionnaire while secondary data was collected using a secondary data collection schedule. Data was analyzed using panel data regression based on Hausman Test which was used to choose between fixed and random model. The study established that firm size have statistically significant positive effects on insurance penetration in Kenya. The study concluded that policies and initiatives aimed at promoting insurance penetration in Kenya should consider not only the characteristics of individual consumers but also the characteristics of firms, particularly their size.*

I.   INTRODUCTION

As part of the general financial system, insurance companies provide unique financial services to the growth and development of every economy. Such specialized financial services range from the underwriting of risks inherent in economic entities and the mobilization of large amount of funds through premiums for long term investments (Nwosa & Mustapha, 2017). The risk absorption role of insurers promotes financial stability in the financial markets and provides a sense of peace to economic entities. The business world without insurance is unsustainable since risky business may not have the capacity to retain all kinds of risks in this ever changing and uncertain global economy (Ehiogu & Eze, 2018).

Insurance companies sell protection to policyholders against many types of risks: Property damage or loss, health and casualty, financial losses, etc according to Varenik, Pestovskaya, and Opaliichuk (2016). In return for this risk protection, insurance companies receive a premium from the policyholder that is used to cover expenses and the expected risk. For longer-term risk protections, part of the premiums is invested to get higher yields. Hence, Insurers need to have sufficient equity or buffer capital to meet their obligations in adverse conditions when their losses on the diversified portfolio exceed the expected losses (Hartwig, Niehaus & Qiu, 2020).

The insurance sector in Kenya and other countries while providing critical interventions and creating wealth through investments, has had a fair share of instability challenges which has resulted to many collapses (Mumo, 2017; Herciu & Şerban, 2016). Over the last one decade, a number of insurance companies have closed shop and eventually liquidated. Such insurance companies include BlueShield Insurance Company in the year 2011 and Concord Insurance Limited in the year 2013.On the other hand, Xplico insurance companies limited have been put under statutory management while Invesco Assurance Company Limited has been put under liquidation. According to Mugo (2018) most of these companies have gone under with billions of shillings, in cash, belonging to policy holders, pension schemes and life funds.

Global figures show that insurance penetration is 6.28 percent, with 11.03 percent in Latin America, 6.73 percent in Europe, 5.73 percent in Asia, 5.6 percent in Oceania and 3.65 percent in Africa (Biener, Eling, & Wirfs, 2016). The average penetration for Europe in 2013 is 6.82 percent while Africa's is 3.65 percent (Mutegi, 2018). India's insurance penetration is lower than the world average of 6.28 percent in 2013, compared to 5.2 percent in India (Ilyas & Rajasekaran, 2021).

While Indian insurance penetration is high at 5.2%, it is lagging behind other Asian countries such as Japan (9.9%), South Korea (10.4%) and Singapore (6.8%). In the US, the penetration of life insurance (total premium $as a share of GDP) in the United States in 2010 was 3.5 (compared with 9.5 in the United Kingdom, 7.4 in France and 8.0 in Japan) (Mutegi, 2018).

Penetration of insurance is calculated by the absorption of insurance goods (Muriuki & Mutugi, 2017). In 2020, insurance penetration, defined as the ratio of gross direct insurance premiums to GDP, was 2.17 percent (2019: 2.34 percent). The global average insurance penetration rate was 7.4%. Insurance density, or the ratio of gross direct insurance premiums to total population, declined slightly from KES 4,788 in 2019 to KES 4,787 in 2020, indicating a modest fall in insurance spending (Mburu, 2017; IRA, 2020). Compared to the global average, the penetration of insurance in Kenya is still very low. In 2020, the asset base of the industry expanded by 8.0 percent to KES 765.93 billion (2019: KES 709.05 billion). The asset base was mostly made up of investments, accounting for 85.7 percent of the total. Investments climbed by 10.5 percent in the year under review, from KES 594.03 billion in 2019 to KES 656.46 billion at the conclusion of the year. Government securities accounted for 67.1 percent of the investments (KES 440.68 billion) (IRA, 2020).

As mentioned, insurance penetration in Kenya is estimated at 2.34 percent, which is very low considering that Kenya's population now stands at over 40 million and is much lower than both the continent and the global penetration of 3.6 percent and 6.28 percent respectively (AKI, 2019). Nevertheless, with the gross written premiums of the industry, there is notable and steady growth in the insurance industry. Though gross written premiums grew 5.3% to Ksh 228 billion compared to Ksh 216 billion by the end of the same period in 2018 (Kenya Institute for Public Policy Research and Study, 2019), insurance penetration growth remained low. There is a great deal of experimentation with different insurance plans targeted at the mass market, but the use of these goods is still very limited.

Insurance has remained a relatively low niche sub-sector, with consumption levels remaining at 6% of the population and contributing 1.5% of GDP in 2016. By 2016, with the statutory National Hospital Insurance Fund (NHIF) at 21%, 19 percent of the population had some form of health insurance coverage. NHIF membership increased in 2017 to 6.8 million people, up from 6.1 million in 2016, reflecting an 11.1 percent rise. Wahome (2016) indicated that insurance companies in Kenya lead within the Community of East Africa and are a key player in the COMESA region and employ more than 10,000 people. The premium reported by long-term insurers was 44.25 billion KES in Q2 2019, a rise of 6.9 percent from the 41.39 billion KES reported in Q2 2018.

A company's size is the amount and variety of manufacturing resources and capacity that a company has, or the amount and variety of services that a company can offer to its customers at the same time (Shang, Chen& Li, 2020). A company's size is a primary factor in assessing a company's profitability because of the principle known as economies of scale that can be found in the company's conventional neoclassical view. It shows that, unlike smaller companies, bigger firms can manufacture goods at much lower costs. A favorable relationship between business size and profitability is predicted by this notion (Merozwa, 2015). Contrary to this, alternative business theories advise that larger organizations are under the control of managers following self-interested objectives and should thus replace the benefit maximization of the objective function of the companies with the management utility maximization function.

II. Statement of the Problem

In Kenya, insurance penetration has fallen to 2.34%, the lowest in the last 15 years (Kenya Insurance Industry Survey, 2019), compared to South Africa, whose penetration is 16.9% with a population of 53.2 million (National Insurance Commission, 2019). In Kenya, the number of insurance firms is 59, equivalent to a 1:1 ratio for every 1 million Kenyans, which is close to that of the banking sector in Kenya. In the last five years, 10.7 percent in the year 2015, 13.2 percent in the year 2016, 6.3 percent in the year 2017, 3.5 percent in the year 2018 and 6.1 percent in the year 2019, the Gross Direct Premium in Kenya was on the downward trend (IRA, 2019). Insurance continued to be a relatively low niche sub-sector under the Third Medium Term Plan (2018-2022), with the level of use remaining at 6% of the population and contributing 1.5% to GDP in 2016. Health insurance coverage has also been usually low at 19% (IRA, 2019). The NHIF is Kenya's largest health insurer, covering 16 percent of Kenyans, while the 32 private health insurers cover only 1 percent of the Kenyan population collectively. By 2019, with the statutory National Hospital Insurance Fund (NHIF) at 21 per cent, 19% of the population had some kind of health insurance cover. NHIF membership increased to 7.6 million people in 2019, up from 6.1 million in 2016, reflecting an 11.1 percent rise. In 2017, with over 2.2 million members, there were nearly 1,200 registered retirement benefits / pension schemes. Kenya's insurance penetration (2.34%) is, as suggested, far lower than the regional average of 3.8% (Africa Insurance Outlook, 2019). Additionally, the general lack of a savings culture, insufficient tax incentives and a perceived industry reputation crisis in the public eyes, especially with regard to

the settlement of claims, were cited as likely causes for a low penetration of insurance in Kenya (Gakeri, 2015). This situation is the subject of the current study to determine if the worsening situation is caused by particular firm characteristics and the economic climate of insurance companies in Kenya. While businesses operating in the same sector have different levels of financial performance and deal with the same external variables, studies have shown that internal factors influence firm performance. Firm size, financial leverage, liquidity, investment efficiency, capital adequacy are among the main internal factors (Zablon & Ariemba, 2015). Lwaminah (2017) examined the impact of asset quality, liquidity, investment quality, capital adequacy and firm size on the financial performance of commercial banks in Kenya in a further empirical analysis of company specific factors. Conversely, this study sought to examine the effect of firm size on insurance penetration in Kenya.
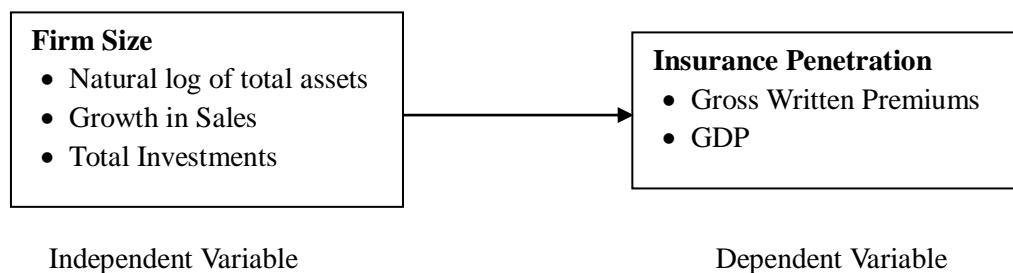
1. Purpose of the Study

The study mainly sought to examine the effect of firm size on insurance penetration in Kenya.

2. Research Hypothesis

H_{01}: Firm size has no significant effect on insurance penetration in Kenya

3. Conceptual Framework

A conceptual framework is a system that organizes a meaningful structure of empirical findings (Shapira, 2011). A conceptual framework was argued by Childs (2010) to be a collection of broad ideas and concepts taken from related fields of study and used to form a subsequent presentation. The conceptual framework for the current study demonstrates the impact of firm size on insurance penetration of insurance companies in Kenya

Firm Size
- Natural log of total assets
- Growth in Sales
- Total Investments

Insurance Penetration
- Gross Written Premiums
- GDP

Independent Variable   Dependent Variable

III. Neoclassical Theory of Investment

This theory was developed by Jorgenson (1963). The theory derives its fundamentals from the maximization over time of a company's usefulness and resources (Warstrom & Niemela, 2015). Investment is seen as a distributed lag function of variations in the necessary capital in neoclassical theory. The capital needed or desired here functions as a function of the level of production, cost of consumer capital and price of output (Twine, Kiiza, & Bashaasha, 2015). The theory assumes that investment is a function of the cost of capital and the production of companies. In addition, the theory suggests that capital and labour ratios are adapted to relative price shifts (Virlics, 2013).

The neoclassical theory of investment is based on the assumption that the empirical probabilities and probability distribution of the expected returns can be made by agents. The company is seen to be risk-neutral in investment models, and the risk is generated by capital costs. The neoclassical argument suggests that company management behave in the best interests of stakeholders in the company. It also means that managers and external fund providers have the same information available to the business about the quantity and quality of investment opportunities. These assumptions serve as a starting point for models that show the possible value of internal funds in the decision to invest (Ismail et al., 2010).

The Neoclassical Theory of Investment remains relevant in understanding firms' investment decisions, despite some critiques. Mankiw, Romer, & Weil. (1992) examined the determinants of economic growth using a neoclassical growth model. The study highlights the role of physical capital accumulation, technological progress, and human capital investment in driving long-term economic growth, providing empirical support for the neoclassical theory of investment as a driver of productivity and prosperity. Tobin (1969) extends the neoclassical theory of investment by introducing the concept of q theory, which relates the market value of firms to their replacement cost of capital. The paper emphasizes the role of Tobin's q as a determinant of investment decisions, highlighting the importance of profitability and capital costs in firms' investment behavior. Hall, & Jorgenson (1967) study applies the neoclassical theory of investment to analyze the effects of tax policy on firms' investment decisions. The study highlights the

importance of tax incentives, depreciation allowances, and investment tax credits in influencing firms' investment behavior, consistent with the predictions of the neoclassical theory.

The Neoclassical Theory of Investment, while influential, has faced several critiques from economists and researchers. The Neoclassical Theory of Investment often assumes that firms have perfect information about future profitability and investment opportunities. Critics argue that this assumption is unrealistic, as firms may face uncertainty, incomplete information, and asymmetric information about market conditions, technological developments, and competitive dynamics. As a result, firms' investment decisions may be subject to errors and inefficiencies, leading to sub-optimal allocation of resources.

The Neoclassical Theory of Investment sometimes oversimplifies firms' investment behavior by focusing solely on factors such as the marginal productivity of capital, the cost of capital, and the rate of return on investment. Critics argue that this narrow focus overlooks other important factors that influence investment decisions, such as managerial discretion, organizational capabilities, strategic considerations, and behavioral biases. By neglecting these factors, the theory may fail to capture the complexity of firms' investment behavior in real-world settings.

The Neoclassical Theory of Investment often assumes that firms have unfettered access to external financing and can borrow or raise capital at competitive interest rates. However, in reality, firms may face financial constraints that limit their ability to finance investment projects, particularly during economic downturns or periods of financial distress. These financial constraints can impede firms' investment decisions and lead to underinvestment or delayed investment, which the neoclassical theory may not adequately account for.

The Neoclassical Theory of Investment typically focuses on physical capital accumulation as the primary driver of investment and economic growth. Critics argue that this perspective neglects the role of technological change, innovation, and intangible investments (such as research and development, human capital, and organizational capital) in driving productivity growth and economic development. By overlooking these factors, the theory may fail to capture the full range of investment opportunities and dynamics in modern economies.

The Neoclassical Theory of Investment often assumes that markets quickly adjust to changes in investment demand and supply, leading to a state of equilibrium where the marginal productivity of capital equals the cost of capital. Critics argue that this assumption overlooks the presence of adjustment costs, frictions, and lags in investment responses, which can lead to temporary disequilibrium and suboptimal resource allocation. As a result, the theory may provide a partial or idealized representation of investment dynamics in dynamic and evolving economies.

Overall, while the Neoclassical Theory of Investment offers valuable insights into the determinants of investment behavior, it is important to recognize its limitations and complement it with alternative perspectives that capture the complexities and nuances of real-world investment decisions. Integrating insights from behavioral economics, organizational theory, and institutional analysis can help enrich our understanding of firms' investment behavior and its implications for economic growth and development. The neoclassical theory was used to analyze whether asset quality as a measure of company size was intended to optimize insurance penetration in Kenya.

IV.   Firm Size and Insurance Penetration

Smith & Johnson (2020) investigated the impact of economic uncertainty on the relationship between firm financial characteristics and insurance penetration in developed economies. Using panel data analysis covering a sample of firms across multiple industries, the researchers examined how firm-specific financial characteristics interact with economic uncertainty, represented by fluctuations in GDP growth rate, inflation rate, and stock market volatility, to influence insurance penetration rates. Contrary to expectations, the findings reveal a negative relationship between firm financial characteristics, such as profitability, liquidity, and leverage, and insurance penetration, particularly during periods of heightened economic uncertainty. The researchers found that economic uncertainty acts as a moderating variable, exacerbating the negative impact of weak firm financial characteristics on insurance penetration. These results suggest that in times of economic turmoil, firms may prioritize cost-cutting measures, including reducing insurance coverage, to mitigate financial risks and preserve liquidity. The study underscores the importance of considering economic context and uncertainty in understanding the dynamics of insurance penetration and firm financial decisions.

The influence of firm size on the profitability of manufacturing companies listed on the Istanbul Stock Exchange was analyzed by Egolum and Okika (2019) using panel data for the period 2005-2011. Using Return on Investment, profitability was assessed, while both total assets and total revenues were used as firm size proxies. According to the

study results, the size of the group, both in terms of total assets and in terms of total sales, had a positive effect on Turkish manufacturing companies' profitability. Van Reenen (2018) claimed that large corporations had market power to set prices above the economic costs involved in the manufacturing of the goods, resulting in increased benefit for larger companies.

Lee & Chen (2021) investigated the relationship between firm size, insurance penetration, and the moderating effect of the economic environment in emerging markets. Using panel data from a sample of firms across multiple industries in emerging economies, the researchers examined how firm size interacts with economic factors, such as GDP growth rate, inflation rate, and financial development, to influence insurance penetration rates. The findings reveal a significant positive relationship between firm size and insurance penetration, indicating that larger firms tend to have higher levels of insurance coverage. Furthermore, the researchers find that the economic environment plays a moderating role in this relationship. Specifically, during periods of economic stability and growth, the positive impact of firm size on insurance penetration is amplified, suggesting that favorable economic conditions enhance the propensity of large firms to invest in insurance products. Conversely, in times of economic uncertainty or downturns, the positive relationship between firm size and insurance penetration weakens, as firms may prioritize liquidity management and cost-saving measures over insurance coverage. These results underscore the importance of considering the economic context in understanding the relationship between firm characteristics and insurance penetration in emerging markets.

Nanjala (2020) in a study on firm characteristics and revenue efficiency of selected insurance companies in Kenya, noted that revenue efficiency is recognized as a major ingredient in sustainable growth in insurance business. The growing complexity in the insurance business characterized by the constant change in the operating environment has increased the significance of the effect of revenue efficiency in resource utilization in the sector. The continuous decline in revenue efficiency in the Kenyan insurance has affected profitability and sustainability of insurance companies. The main objective of this study was to determine the effect of firm characteristics on revenue efficiency of selected insurance companies in Kenya. The specific objectives of the study included: to determine the effect of firm size on revenue efficiency, to establish the effect of capital adequacy on revenue efficiency, to determine the effect of claims experience on revenue efficiency of insurance companies, to establish the effect of asset quality on revenue efficiency, to assess the effect of risk on revenue efficiency, to determine the moderating effect of competition on the relationship between firm characteristics and revenue efficiency. The research was based on the information asymmetry theory, the agency theory, passive learning theory and the structural conduct theory. The study used a causal research design and was underpinned on positivism research philosophy. The target population was the 27 insurance companies that have consistently been in operation during the study period, 2008-2017 and registered by the Insurance Regulatory Authority. A census of all the 27 insurance companies was taken. The study relied on secondary data from audited financial statements as submitted to the Insurance Regulatory Authority. The panel secondary data was quantitative in nature and was analyzed using descriptive statistics and inferential statistics. Descriptive statistics included mean, mode, median and standard deviations. Inferential statistics included correlation analysis and multivariate analysis using the two stage Data Envelopment Analysis by obtaining efficiency scores in the first stage thereafter Dynamic panel regression model in stage two. Data was analyzed by STATA (14). The research findings showed that capital adequacy had a positive statistically significant effect on revenue efficiency of insurance companies in Kenya, firm size and asset quality had a statistically significant negative effect on revenue efficiency; claims experience and risk did not have a significant effect on revenue efficiency. The moderating effect of competition on the relationship between: capital adequacy and revenue efficiency; claims experience and revenue efficiency was negative and statistically significant; the moderating effect of competition on the relationship between: Asset Quality and Revenue Efficiency, Firm Size and Revenue Efficiency, risk and Revenue Efficiency was not significant. The study recommends that insurance companies should put in place robust measures to ensure remittance of policy premiums especially from insurance agents, to reduce exposure to large sizes of debtors' consequently poor asset quality. The study also recommends that insurance companies should be encouraged to form strategic business units through spinoffs, which will encourage specialization for the different units reducing the too-big-to-fail phenomenon.

Amal, Yahya & Sameer (2012) investigated the factors that mostly affect financial performance of Jordanian Insurance Companies. The study population consisted of all insurance companies' enlisted at Amman stock Exchange during the period (2002-2007) which count (25) insurance company. The data collected was analyzed by using a number of basic statistical techniques such as T-test and Multiple- regression. The results showed that the following variables (Leverage, liquidity, Size, Management competence index) have a positive statistical effect on the financial performance of Jordanian Insurance Companies. The researcher recommended that a high consideration of increasing the company assets will lead to a good financial performance and there is a significant need to have highly qualified employees in the top managerial staff.

Olayungbo & Akinlo (2016) in a study on Insurance penetration and economic growth in Africa: Dynamic effects analysis using Bayesian TVP-VAR approach examined the dynamic interactions between insurance and economic growth in eight African countries for the period of 1970–2013. Insurance demand is measured by insurance penetration which accounts for income differences across the sample countries. A Bayesian Time Varying Parameter Vector Auto regression (TVP-VAR) model with stochastic volatility is used to analyze the short run and the long run among the variables of interest. Using insurance penetration as a measure of insurance to economic growth, the study found positive relationship for Egypt, while short-run negative and long-run positive effects are found for Kenya, Mauritius, and South Africa. On the contrary, negative effects are found for Algeria, Nigeria, Tunisia, and Zimbabwe. Implementation of sound financial reforms and wide insurance coverage are proposed recommendations for insurance development in the selected African countries.

Odunayo & Msomi (2021) in a study on determinants of insurance penetration in West African Countries: A panel auto regressive distributed lag approach, analyzed the long - term and short-term dynamics of the determinants of insurance penetration for the period 1999Q1 to 2019Q4 in 15 West African countries. The panel auto regressive distributed lag model was used on the quarterly data gathered. A cointegration and short-run momentous connection was discovered between insurance penetration along with the independent variables, which were education, productivity, dependency, inflation and income. The error correction term's significance and negative sign demonstrate that all variables are heading towards long-run equilibrium at a moderate speed of 56.4%. This further affirms that education, productivity, dependency, inflation and income determine insurance penetration in West Africa in the long run. In addition, the short-run causality revealed that all the pairs of repressors' could jointly cause insurance penetration. The findings of this study recommend that the economy-wide policies by the government and the regulators of insurance markets in these economies should be informed by these significant factors. The restructuring of the education sector to ensure finance-related modules cut across every faculty in the higher education sector is also recommended. Furthermore, Banc assurance is also recommended to boost the easy penetration of the insurance sector using the relationship with the banking sector as a pathway.

Kollie (2017) in a study on determinants of Performance Of Insurance Companies in Kenya noted that the number of players in the insurance sector have increased significantly with currently 54 insurance companies offering services nationwide. This has changed the dynamics of operations in this sector as the companies are faced with harder task in attaining competitive advantage. However, the available literature is not sufficient to determine what exactly affects how the insurance companies in the country perform. This study sought to establish the determinants of performance of Insurance Companies in Kenya. The study adopted descriptive research design with the population being all the insurance companies that are registered in Kenya. Census approach was adopted to cover all the insurance companies in Kenya while data was collected by using questionnaires. Data was analyzed using descriptive statistics and presented by tables. The study found out that cash flows, liquidity, organization structure and size all have a positive and significant effect on how the firms performed. The study further found out that these factors had a positive and significant effect on the performance of the insurance companies. The study thus concludes that in order to improve performance in the insurance companies, these factors ought to be carefully evaluated and prioritized in the organization's strategies. The study thus recommends that the management at these firms ensure that their assets are liquid enough to meet both current and future obligations. The study also recommends that the organization structures should be implemented in such a way that it enables enhanced communication between the employees and management. Additionally, the study recommends that the government should come up with measures to grow the country's real GDP as this would enhance the economic growth of the country and the insurance industry's growth as well.

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Ndalu (2011) in a study on the relationship between economic growth and insurance penetration in Kenya examined the relationship between economic growth and insurance penetration in Kenya. The study employed a causal study design. Since there is published information on economic growth and insurance penetration by the government agencies, primary data collection methods were not employed. Secondary data was obtained from published reports of Insurance Regulatory Authority (IRA) and Central Bureau of Statistics (CBS) specifically the Annual Insurance Reports and Economic Surveys respectively. The target population was all the 45 Insurance companies registered for operation in Kenya. The study covered six years from 2003 to 2008. The study used simple regression analysis to examine the association between economic growth and insurance penetration in Kenya. Forecasting model was developed and tested for accuracy in obtaining predictions. From the study it was established that insurance companies in Kenya transact two types of businesses namely Long term and general business. Insurance penetration ratio increased by 0.10% to stand at 2.7% in 2008. The long term business accounted for 0.9% and general business accounted for 1.8%. GDPI under general insurance business amounted to Kshs 35.65 billion in the year 2008 as compared to the previous year's Kshs 30.96 billion representing 15.08% increase. Enacting a modern legal framework and; designating a special judicial authority to handle insurance-related cases are key requirements to enable market development by protecting the rights of policyholders and regulating the • activities of market participants. Also fostering a competitive environment drives innovation, competitive pricing, and the adoption of best practices, and is a key enabler for the development and growth of insurance markets.

Effect of Firm Size on Insurance Penetration in Kenya

Ngahu (2012) in a study on size and profitability of banks in Kenya noted that the main purpose behind establishment of every business is to make profit. For the achievement of this objective various factors facilitates ease of attain it, size of the business being one of the main factors. Banks as well as other business aim at making profit despite their key role that they play in pushing forward the economic growth rates, through the mobilization of national savings and using them to finance productive economic sectors they also plays a major role as an engine and a key supporter to the country economy. It is generally argued that big firms possess economies of scale and better access to capital markets to achieve lower costs and higher returns. The study employed a descriptive design since the study concentrated on all commercial banks in Kenya. Survey study was conducted to get detailed information on the relationship between size and the profitability of the firm. Secondary data was used. The data was obtained from the annual central bank reports, Market Intelligence magazine bank survey report and annual financial accounts of the commercial banks. This ensured that the information obtained was not biased and depicts the real situation of the bank's performance. From the findings, the study found that there was positive relationship between profitability of banks varied with customer base, number of branches, deposit liabilities and market share as there was high positive correlation coefficient, the study further revealed that there was greater variation of profitability of commercial banks as results of change with customer base, number of branches, deposit liabilities and market share in all tiers. The study recommends that in order for commercial banks to increase their performance (profitability) there is need from commercial banks to increase size by increasing various aspect of customer base, number of branches, deposit liabilities and market share

Gleason, Mathur & Mathur (2000) studied the interrelationship between culture, capital structure, and performance: evidence from European retailers. They noted that the research has shown that capital structure influences firm performance. It is generally accepted that variables other than capital structure also influence corporate performance. While this line of research has been extended to an international setting, research on the influence of national culture on capital structure is rather sparse, an issue addressed in this article. Using data from retailers in 14 European countries, which are grouped into four cultural clusters, it is shown that capital structures for retailers vary by cultural clusters. This result holds in the presence of control variables. Using both financial and operational measures of performance, it is shown that capital structure influences financial performance, although not exclusively. A negative relationship between capital structure and performance suggests that agency issues may lead to use of higher than appropriate levels of debt in the capital structure, thereby producing lower performance.

Kamau & Ndiaye (2022) investigated the relationship between firm size, insurance penetration, and the moderating effect of economic uncertainty in African economies. Using panel data from a sample of firms across various sectors in African countries, the researchers examined how firm size interacts with economic factors, such as GDP growth rate, inflation rate, and financial market volatility, to influence insurance penetration levels. Contrary to expectations, the findings reveal a negative relationship between firm size and insurance penetration in the context of heightened economic uncertainty. Specifically, during periods of economic instability and volatility, larger firms exhibit lower levels of insurance coverage compared to smaller firms. The researchers further found that the economic environment acts as a moderating variable, exacerbating the negative impact of firm size on insurance penetration under adverse economic conditions. These results suggest that in African economies facing economic uncertainty, larger firms may prioritize cost-saving measures and liquidity management over investment in insurance products. The study underscores the importance of considering the complex interplay between firm characteristics, economic environment, and insurance penetration levels in African contexts.

Guerineau, Samuel, and Relwende (2015) in a study on the determinants of life insurance development in Sub-Saharan Africa: The role of the institution's quality in the effect of economic development analyzed the determinants of life insurance development on a panel of 20 countries in sub-Saharan Africa over the period 1996-2011. It also highlights the role of the institutions quality on the effect of economic development on the life insurance. Controlling for the presence of a possible endogeneity bias using the instrumental variable technique, we find evidence that increased of per capita income leads to an increase in life insurance premiums. The researchers show that the life insurance is a luxury good in SSA. The demographic variables such as life expectancy and the young dependency ratio influence negatively the life insurance development while the old dependency ratio has a positive effect. The researchers also found that the protection of property rights and the government stability are positively associated to life insurance. The results are robust to the introduction of more variables. Furthermore, the marginal impact of the income per capita on the life insurance varies according to the quality of the legal and political environment. Finally, the marginal effect of the economic development on life insurance is less for French legal system countries compared to Non-French legal system countries.

Wayongah & Mule (2019) studied moderating effect of firm size on the relationship between financial leverage and financial performance of non-financial firms listed in the NSE, Kenya noted that the performance of non-financial firms is perceived to be influenced by firm size and financial leverage among other factors based on the theory of economies of scale. Most studies carried out in Kenya focused on financial firms and single set of performance measures hence, limited knowledge on the combined synergetic effect of accounting and market based measures of performance for nonfinancial firms. This study therefore sought to establish the moderating effect of firm size on the relationship between financial leverage and financial performance of non-financial firms listed in Nairobi Securities Exchange (NSE) using accounting based and market based measures of performance (ROE and Tobin's) and panel methodology. The study used a correlation research design. The target population was 47 non-financial firms listed at NSE between 2012 and 2018 where 28 firms were purposively sampled and pooled for 7 years to obtain 196 firm year observations. Firm size is a significant positive predictor of performance (ROE), $\beta = 0.0972$ (P = 0.0196) and Tobin's Q, $\beta = 0.0578$ (P = 0.0006) meaning a unit change in firm size leads to a significant increase in ROE and Tobin's Q of 0.0972 and 0.0578, respectively. Model coefficient interaction term was negative but significant for (ROE) $\beta = -.0368563$, (p = 0.001) and Tobin's Q, $\beta = -.0368563$), (p = 0.001) implying that firm size negatively moderates the relationship between financial leverage and performance. The study concludes that firm size moderates the relationship between financial leverage and financial performance. The study recommends that management of the non-financial firms listed at NSE should take into consideration the size of their firms in making leverage choices since firm size moderates this relationship negatively.

Kaen & Baumann (2003) studied firm size, employees and profitability in U.S manufacturing industries. The study examined the relation between profitability and size for sixty-four manufacturing industries between 1990 and 2001. Three measures of profitability: Earnings before interest, taxes, depreciation and amortization as a percent of sales (EBITDA margin); earnings before interest and taxes as a percent of sales (EBIT margin) and EBIT as a percent of total assets (EBIT/TA) were used. The measure of firm size was the natural log of the number of employees. The study found the following: (1) In about half of the sixty-four industries firm profitability increases at a decreasing rate and eventually declines as firms become larger. (2) For the remaining half of our manufacturing industries, no relationship exists between size and profitability. (3) For a given level of total assets, firms with fewer employees exhibit greater profitability. (4) For a given level of sales, firms with fewer employees exhibit greater profitability. The results are consistent with theories of firm size that specify trade-offs between economies of scale and organizational costs and with theories that ascribe certain competencies to firms that allow them to offset the advantages often ascribed to large firms such as economies of scale.

Kigen (2014) in a study on the effect of firm size on the profitability of insurance companies in Kenya noted that insurance services are now being integrated into wider financial industry and the insurance sector plays an important role in service-based economy of Pakistan. Profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner`s wealth and profitability is very important determinants of performance. This study investigated the effect of size on the profitability of insurance companies of Kenya. Specifically, this study examined the effects of total assets, leverage and market share on profitability (ROA). A key indicator of insurance companies' profitability is return on assets (ROA), defined as the before-tax profit divide by total assets (TA). Profitability is dependent variable while total assets, leverage and market share are independent variables. A census study of 48 general and long-term insurance companies which cover the period of 2009 – 2013. Secondary data obtained from the financial statements of insurance companies and annual reports of Insurance Regulatory Authority (IRA). The study was quantitative in nature. Regression model was used to analysis the secondary data collected for the insurance companies. The findings show that there is no relationship between profitability and total assets of the insurance companies and there is significantly positive relationship between size as measured by market share of the insurance companies and profitability. The result also shows leverage had significant on profitability of insurance companies. The study recommends that in order for both general and long-term insurance companies to increase their profitability, the companies should engage in activities which will lead to increase in market share. This includes recruiting more agents and increase in marketing through print and social media.

Charumathi (2012) studied on the determinants of profitability of Indian life insurers – an empirical study. Proceedings of the World Congress on Engineering. The study noted that Indian life insurance industry is the least profitable market for its shareholders among all Asian countries due to fall in new business premium in 2010-11 in spite of the fact that it has reported net profit of Rs. 26.57 billion in 2010-11 as against net loss of Rs. 9.89 billion in 2009-10. However, the life insures' characteristics that are related to profitability have not been studied in the Indian conditions. In this context, the

present study tried to model the factors determining the profitability of life insurers operating in India taking return on asset as dependent variable. This is an empirical study. The sample for this study include all the 23 Indian life insurers (including 1 public and 22 private) and it used the data pertaining to 3 financial years, viz., 2008-09, 2009-10 and 2010-11. For this purpose, firm specific characteristics such as leverage, size, premium growth, liquidity, underwriting risk and equity capital are regressed against Return on Assets. This study led to the conclusion that profitability of life insurers is positively and significantly influenced by the size (as explained by logarithm of net premium) and liquidity. The leverage, premium growth and logarithm of equity capital have negatively and significantly influenced the profitability of Indian life insurers. This study does not find any evidence for the relationship between underwriting risk and profitability.

V.   Research Methodology

5.1 Research Design

The study was anchored on positivism philosophical foundation. Moreover, the study applied longitudinal research design. The main objective of a longitudinal research design is to collect and generalize numerical data through groups of people or to clarify a particular phenomenon (Garg & Kothari, 2014). The target population for this study included all of the 26 licensed Life Insurance Companies in Kenya that were operational between 2011 and 2022 and filed their audited financial statements with the insurance regulatory authority for the period (IRA, 2020). The analysis intentionally took 18 insurance companies as the acceptable sample size to achieve the set goals.

5.2 Data Collection Instruments

A research instrument is described by Parahoo (2014) as a tool used to gather data. An instrument is a system designed to test perception, attitude, and abilities. The analysis used secondary data from the audited financial statements of 18 Life Insurance Companies and economic environment (GDP, inflation and interest rate) from the Kenya Economic Survey through 2011 – 2022. A secondary data collection template was used to collect secondary data which was quantitative in nature. There is a need to build a data collection method to help with data collection, according to Kothari (2011). Primary data which is qualitative in nature was also collected using a questionnaire.

VI.   Study Findings

6.1 Firm Size

The first objective of the study was to examine the effect of firm size on insurance penetration in Kenya. Firm size was measured using the value of the total assets of the firms. Table 4.10 presents data pertaining to the average total assets of the insurance sector in Kenya over an 11-year period, from 2011 to 2022. Descriptive statistics have been calculated to summarize the distribution and characteristics of the total asset values.

Table 1: Descriptive Statistics of Firm Size (Total Assets)

Descriptive Statistics	Total Asset
Minimum	36579
Maximum	137768000
Mean	16693699.78
Std. Deviation	25827468.8
N	216

The descriptive statistics presented in Table provide a concise summary of the distribution, central tendency, variability, skewness, and kurtosis of average total assets within the insurance sector in Kenya over the period of the study. The minimum value of shs. 36,579 represent the smallest recorded average total asset value during the study period. This indicates the lowest financial standing of insurance companies in terms of their total assets. The maximum value of shs. 137,768,000 represent the highest recorded average total asset value during the same period. This indicates the peak financial standing of insurance companies in terms of their total assets. The mean (average) total asset value of approximately shs. 16,693,699.78 reflect the central tendency of the data. On average, insurance companies in Kenya had this amount in total assets over the 12-year period.

The standard deviation of around shs. 25,827,468.8 quantifies the degree of variability or dispersion in the total asset values. A higher standard deviation suggests greater variability in the data points, indicating that the total asset values are spread out from the mean.
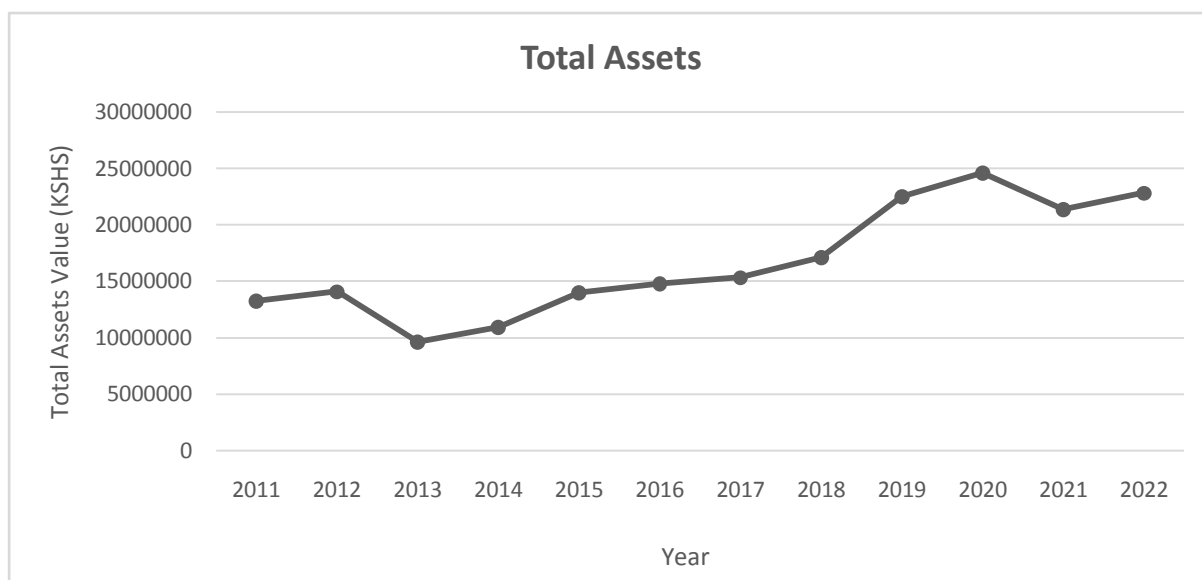
Figure 1: Variation in Average Total Assets for Insurance Industry between 2011 and 2022

The provided data represents the average total assets of insurance firms in Kenya for each year from 2011 to 2022. The trend in total assets exhibit a generally upward trend over the years. From 2011 to 2013, there was a decrease in average total assets, followed by a consistent increase from 2014 onwards. From 2014 to 2022, there is a noticeable and relatively steady growth in average total assets. The values appear to increase with some fluctuations, indicating a positive trajectory.

The increasing trend in average total assets suggests that insurance firms in Kenya had, on average, experienced growth and improved financial stability over the years. This growth could be a result of factors such as increased customer demand for insurance products, improved economic conditions, and effective financial management. The consistent growth in average total assets might signify an expanding market for insurance services in Kenya. This could indicate that more individuals and businesses were recognizing the value of insurance coverage, leading to increased business opportunities for insurance companies. Finally, the trend could also further imply that insurance firms were able to accumulate higher levels of capital, which was crucial for meeting regulatory requirements and ensuring their ability to cover potential insurance claims. Kimani and Njuguna (2016) also studied insurance firms in Kenya and noted that the economic variables should be well handled for insurance firms to remain dominant in the industry. Further, Van Reenen (2018) claimed that large corporations had market power to set prices above the economic costs involved in their operations, resulting in increased benefit for larger companies.

This study further collected primary data on each of the study variables to assess the perception of managers in insurance sector in Kenya on the effect of firm size on and insurance penetration in Kenya. Table 2 presents the results from descriptive analysis of the primary data collected.

Table 2: Descriptive Analysis of Firm Size

	SD	D	N	A	SA	Mean	Std Dev
Value of total assets of the firm has a significant influence on insurance penetration in Kenya	22.2%	0.0%	0.0%	38.9%	38.9%	3.72	1.56
Insurance firms market capitalization determines insurance penetration in Kenya	5.6%	11.1%	0.0%	83.3%	0.0%	3.61	0.92
Larger insurance firms often have a broader market presence and distribution network	5.6%	11.1%	0.0%	0.0%	83.3%	4.44	1.29
Larger insurance companies have the capacity to offer a diverse range of insurance products to enhance insurance	5.6%	11.1%	0.0%	38.9%	44.4%	4.06	1.21

Aggregate score	3.96	1.25

The findings from primary data suggests that the larger insurance firms often having a broader market presence and distribution network have the strongest influence on insurance penetration in Kenya with an aggregate mean of 4.44. This is followed by, larger insurance companies having the capacity to offer a diverse range of insurance products to enhance insurance (4.06). Value of total assets of the firm has the, with an aggregate score of 3.72 then follows. This is then followed by insurance firms' market capitalization (3.61).

It is important to note that the standard deviation is relatively low for all variables, indicating that there is not a lot of variability in the data. This suggests that the findings are likely to be generalizable to the wider population of insurance firms in Kenya. The implications of these findings are that insurance firms in Kenya should focus on increasing their total assets, expanding their market presence and distribution networks, and offering a wider range of insurance products in order to increase insurance penetration in the country.

6.2 Insurance Penetration Rate

The Insurance Penetration Rate is a significant metric that measures the level of insurance coverage within a specific market or economy, in this case, Kenya. It reflects the proportion of the total population or GDP that is covered by insurance products. The Insurance Penetration Rate was calculated by dividing the total insurance premiums (both life and non-life) by the total population or GDP of the country. The Insurance Penetration Rate provides insights into the extent to which individuals, households, and businesses in Kenya are financially protected against various risks through insurance products. A higher penetration rate implies better financial protection, increased economic stability, and opportunities for the insurance industry to grow and innovate. Table 3 presents the descriptive statistics of insurance penetration rates.

Table 3: Descriptive Statistics of Insurance Penetration Rate

Insurance Penetration Rate	Descriptive Statistics
Minimum	2
Maximum	3.7
Mean	2.642
Std. Deviation	0.575
N	216

The minimum Insurance Penetration Rate value of 2 indicated the lowest recorded average penetration rate during the period implying that only around 2% of the population or economy was covered by insurance products. The maximum value of 3.7 represents the highest average penetration rate observed. This implies that, at its peak, approximately 3.7% of the population or economy had insurance coverage. The mean (average) Insurance Penetration Rate of approximately 2.642 indicates the overall average penetration rate for the entire period. This value gives an overview of the general level of insurance coverage within the country over these years.
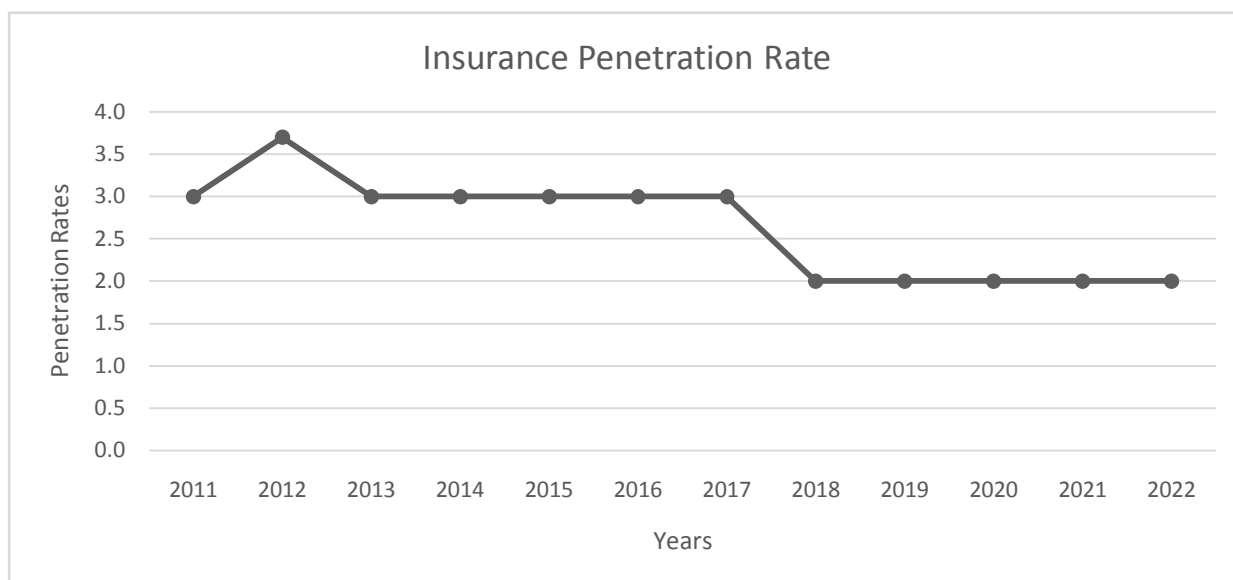
Figure 2: Variation in Average Insurance Penetration Rates in Kenya between 2011 and 2022

Figure 2 illustrates the yearly trends in the average insurance penetration rate in Kenya from 2011 to 2022. The insurance penetration rate represents the proportion of the population or economy that is covered by insurance products. The Insurance Penetration Rate was at 3.0 in 2011 and increased to 3.7 in 2012, indicating a relatively high level of insurance coverage during this period. It then decreased back to 3.0 in 2013. The consistent high penetration rate in the early years during this period suggests that the insurance market was relatively mature, with a significant portion of the population or economy already covered by insurance.

The insurance penetration rate remained constant at 3.0 from 2014 to 2017. This period reflects a consistent level of insurance coverage, suggesting that the market reached a saturation point in terms of the percentage of the population or economy covered by insurance. Starting from 2018, the Insurance Penetration Rate experienced a decline, reaching 2.0 and remaining at this level from 2018 to 2022. The decrease in the Insurance Penetration Rate from 2018 to 2022 suggests a potential shift in consumer behavior or external factors that influenced the demand for insurance products. These findings are consistent with a report by IRA, (2019) that indicated that insurance continued to be a relatively niche sub-sector under the Third Medium Term Plan (2018-2022), with the level of use remaining below 3% of the population and contributing 1.5% to GDP in 2019.

Table 4: Descriptive Analysis on the level of Insurance Penetration in Kenya

	Very Low	Low	Moderate	High	Very High	Mean	Std Dev
Insurance Premiums as a Percentage of GDP	55.6%	16.7%	5.6%	5.6%	16.7%	2.11	1.57
Number of Insured Individuals and Policies	38.9%	33.3%	5.6%	5.6%	16.7%	2.28	1.49
Penetration of Different Insurance Types	44.4%	38.9%	0.0%	16.7%	0.0%	1.89	1.08
Insurance Awareness and Understanding	44.4%	38.9%	0.0%	0.0%	16.7%	2.06	1.43
Aggregate score						**2.08**	**1.39**

The results in Table 4 suggests that insurance penetration in Kenya is currently low, with an aggregate score of 2.08 and relatively high standard deviations indicating some variance in perceptions across different measures. The results show that 55.6% of respondents categorized this as "very low," highlighting that insurance spending contributes minimally to the national economy. This indicates relatively low overall insurance adoption. A similar pattern emerges here, with 38.9% categorizing the number of insured individuals and policies as "low." These points to a limited reach of insurance services across the population.

Penetration of different insurance types shows the most extreme result, with 44.4% indicating "very low" penetration of different insurance types. This suggests a lack of diversity in the types of insurance products offered or purchased, further limiting overall market penetration. While slightly higher than the previous measures, 44.4% still categorize awareness and understanding as "low." This highlights the need for better education and information dissemination to improve public knowledge about insurance benefits and options.

6.3 Correlation Analysis

The study undertook correlation analysis to examine the relationship between firm size and insurance penetration in Kenya. The findings from the analysis were as presented in Table 5.

Table 5: Relationship between Firm Size and Insurance Penetration

		Firm Size
Insurance Penetration Rate	Pearson Correlation	0.766**
	Sig. (2-tailed)	0.000
	N	**216**

**Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis show that firm size had a correlation value r=0.766 which indicate positive and strong association between firm size and insurance penetration in Kenya. These finding imply that larger firms tend to have higher insurance penetration rates. This could be due to their greater resources, wider market reach, and ability to offer differentiated products. The finding support those by Van Reenen (2018) who claimed that large corporations had market power to set prices above the economic costs involved in their operations, resulting in increased benefit for larger companies. Based on the findings, the study rejected the null hypothesis and concluded that there is statistically significant evidence that firm size does have a positive effect on insurance penetration in Kenya.

VII.   Conclusions and Recommendations

Based on the findings, the study concluded that larger firms tend to have a greater influence on insurance penetration. This could be due to several factors such as greater financial resources, better risk management capabilities, and potentially more stable employment conditions for employees, leading to increased willingness to invest in insurance products. The study recommended that the management of insurance firms should invest in comprehensive data collection and analysis efforts to better understand the drivers of insurance penetration in Kenya. This includes collecting data on firm size, financial characteristics, economic indicators, and insurance uptake trends to inform evidence-based policymaking and practice improvement initiatives.

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