INTERNATIONAL JOURNAL OF INNOVATION, ENTERPRISE, AND SOCIAL SCIENCES

ISSN 2454-6186
Volume 5, Issue 2, Pages 176-192, November, 2025
Journal Website: https://scholarnestpublishers.com/index.php/IJIESS

ANTECEDENTS OF DERIVATIVE INSTRUMENTS ADOPTION BY COMMERCIAL BANKS IN KENYA

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ABSTRACT

This study examined the antecedents of derivative instruments by commercial banks in Kenya. The specific objectives of the study were to examine the effect of contract complexity on the adoption of derivatives among commercial in Kenya, and to determine the effect of public awareness framework on the adoption of derivatives among commercial banks in Kenya. The study was anchored on liquidity preference theory, and information signalling theory. The study design was descriptive survey where the study focused on commercial banks in Kenya. The target population were all the 36 commercial banks licensed by Central bank of Kenya. Since the study target population was smaller, a census survey covering all commercial banks that operated as at 2019 was conducted. The study relied on questionnaires extensively used during data collection. The data was analysed through multivariate analysis with the assistance of the statistical Package for Social Sciences package (SPSS). The data was analysed using descriptive and inferential statistics. The study results established that the independent variables explain eighty-three-point two percent of the variation in the adoption of derivative instruments. Further, ANOVA showed that the independent variables combined have a significant effect on adoption of derivative instruments among commercial banks in Kenya as depicted by probably value less than 0.05 level of significance. The study also revealed that the effect of complexity of derivatives contract on adoption of derivative instruments was negative and statistically significant. The effect of public awareness framework on derivatives instruments adoption among commercial banks was positive and statistically significant. The study therefore concluded that complexity of derivative contract, public awareness framework and liquidity had a significant effect on adoption of derivative instruments among commercial banks in Kenya.

Key Words: Antecedents of Derivative Instruments, Contract Complexity, Adoption of Derivatives, Commercial in Kenya, Public Awareness Framework

Background of the Study

Baker (2022) define derivative as a financial contract that rely on underlying assets for value determination. Therefore, FX derivative regarded as a contract for parties involved to engage in currency exchange based on pre-specified rates as defined by the spot rates. OTC instruments on the other hand are a privately negotiated trade between stakeholders. The process is best done through telecommunications platforms (ibid) due to sophisticated business nature. OTC instruments does not have standards and are frequently crafted to meet the buyer's needs for examples FX forwards and options. OTC derivative has its counterpart risk management decentralized to give other party space. Chauhan, Mishra and Spahr (2021) argues that limits on position, leverage and margins are never imposed.

A complete view of capital markets is based on four key pillars namely securities markets, banking industry, insurance and pension funds and the derivatives markets (Dodd, Kalimipalli & Chan, 2021). Derivative markets are investment markets geared towards the buying and selling of derivatives mainly for risk management and price discovery. Business in the derivative market is either over the counter (OTC) or through exchange market. However, exchange-traded tends to have a more rigid structure compared to over the counter (OTC) approach. The exchange-traded derivatives market works through a clearinghouse which is central to its operation. Unlike exchange-traded derivatives, OTC derivatives take a more private approach that mostly two parties take (Bank vs Bank or Bank vs Customer) to adopt a more heterogeneous contract (Sanghvi, Sharma & Chandani, 2024; Mwita, 2023).

The value of one currency based on another currency is foreign exchange rate (Kheiri, Kheiri & Bakria, 2024)). Due to the instability in the market, the foreign exchange rate can be exposed to certain risks. Foreign exchange fluctuations can affect cash flow and income. Therefore, proper management of risks experienced due to foreign exchange is pivotal in ensuring the business remains profitable and sustainable. Through currency derivatives and operation strategies, the impact of foreign exchange risk can be neutralised. Based on assertion by (Pellegrino, Gaudenzi & Zsidisin, 2024) derivatives instrument applied OTC are far much beneficial and effective in emerging economies like Kenya compared to developed ones. Moreover, the FX derivative turnovers in emerging economies and market has consistently outpaced developed market, clear evidence of the continuous development OTC instrument. Currency forward and option consistent growth is a sign of how important they are during risk hedging.

According to recommendation by Al Janabi (2022) markets need to institute their own OTC foreign market derivative for the products first. This is because most countries that made the initiative and introduced their FX forwards were successful. The initiatives were critical especially during identification of major foreign exchange participants like hedgers, traders and arbitragers. Local participants have a role to play especially in assessing the benefit derived from derivative instruments. Banks are the market makers and are given the role of liquidity provision necessary for trade facilitation.

Firms can fix both sale of prices and cost of production through use of currency derivative. Good use of instruments can eliminate cash flow unpredictability because the exchange rate is agreed upon when the contract was signed. According to Bianchetti, Cherubini and Falco (2021) such move ensure market-makers and businesses enjoy profitability due to the mark-up. Usman, Oladejo, Adeoye and Alimi (2023) claim only South Africa, Nigeria and Ghana have turned the corner in Sub-Saharan Africa and currently has a developed financial derivative. Their strategies and approach can be emulated by other emerging countries

Statement of the Problem

Derivatives instruments are critical financial assets that can be used as vehicles for hedging corporate risks as well as for speculative purposes by investors (Eakins & Mishkin, 2012). The asset can enable the firms to hedge risks such as forex fluctuations, price fluctuations, demand fluctuation, interest rates volatility among other risk. However, the adoption derivatives have always underscored their critical position in the financial sector as risk hedging tool as well as speculative instrument (Isabwa, 2022). Most firms globally have not adopted derivatives in the same rate as other financial assets. A study in Israel showed that only 22% of the commercial banks had adopted derivatives with most banking sector avoiding the use of swaps, options contracts and currency swap contracts in its investments (Osundwa & Abayo, 2022). The commercial banks have been slow globally in adopting derivative instruments for risk hedging purposes as well as speculative purposes.

Slow rate of adoption of derivative instruments for speculative and risk-hedging purposes is not only unique to Kenya; from the global outlook very few firms are adopting derivative instruments. Chome and Willis (2024) finds that about 60% of commercial banks in Kenya use derivatives of some sort for speculative and hedging risks purposes or both. Alinoor Hamza and Okiro (2023) in a study of listed non-finance firms at Nairobi Securities Exchange finds that only 54.1% of the firms considered hedging their financial risk exposure using derivatives. Commercial banks need to adopt derivative instruments as avenues for growth in profitability in addition to the traditional banking products.

However statistical data from Kenya Bureau of Statistics (KBS) on value of derivatives in the capital market show that the value of financial derivatives in the financial sector as whole has been declining since 2016 with the figure falling from Ksh. 462.3 million in 2016 to Ksh.323.2 million in 2017 and Ksh. 219.6 million in 2018. These declining statistics shows less desire by firms in general and commercial banks in particular to hold the financial asset. The slow adoption of derivatives has been blamed by practitioners on a number of factors such as legal framework, poor development of the market, lack of awareness by investors, complexity of derivative contracts among other factors as depicted in the empirical review (Koskei, 2024). However, few scholarly works exist on the said factors in the Kenyan banking sector.

Murungi (in Hamza, Alinoor, Abdi, Nyabuti & Okiro, 2023) investigated the factors influencing financial risk hedging practices by non-finance firms that had floated shares at the Nairobi securities exchange in Kenya. The research used descriptive survey design of research. Logit regression was adopted with the outcome variable being binary in nature. The study revealed that firms that were having managers that were risk averse were more likely to engage in risk hedging compared to their counterparts that had high risk appetite. Hee and Song (in Chidaushe & Njaya, 2022) investigated the determinants of adoption of derivatives in life insurance firm in Korea. The study adopted logistic regression. The study revealed that firms that were risk averse used derivatives as a way to control the risks that life insurance companies face. Al-Slehat, Al-Sharif and Qwader (in Osundwa & Abayo, 2022) sought to examine the factors responsible for the adoption of instruments of financial derivatives in commercial banks in Jordan. The data was analyzed using e-views where the study established that complexity of the derivatives contracts and investors awareness were the key factors hindering the penetration into derivatives market in Jordan. Muhia (in Muthine, 2021) investigated the factors responsible for slow development of financial derivatives in Kenya. Data found was analyzed based on linear regression. The study revealed the main hindrances for commercial banks in adopting financial derivatives in Kenya included poor structural facilities including inaccessibility to trading platforms, weak trading rule, poor trading systems and non-existence of a central counterparty. Bansal and Kalra (in Cirappa & Tejashwini, 2022) investigated the views of investors about derivative instruments. Chi-square test was adopted to analyze the

data collected. The research showed that investors had very little knowledge concerning derivatives and their performance. Ikiao (in Mburugu, 2023) assessed the determinants that have been acting as barriers to the adoption of derivatives instruments among firms that have floated shares at the Nairobi securities exchange. The study targeted the employees of institutions in derivatives traded at the Nairobi securities exchange. The study established that low level of liquidity characterized by large changes in asset prices were major determinants of the adoption of derivative instruments.

Further, empirical review has shown a number of knowledge gaps that needs to be filled with this study. First, most of the studies on derivatives have been carried out in the developed and emerging nations with very few studies done locally in Kenya. Secondly, studies examining the determinants of the adoption of derivatives in Kenya have tended to concentrate on factors like legal framework, financial distress, under investment, financial innovations and foreign exchange risk with few studies examining the effect of public awareness frame work and complexity of derivatives on adoption of derivative instruments. The study therefore sought to bridge the gap in literature by examining the factors affecting adoption of derivatives among commercial banks in Kenya with focus on the effect of public awareness frame work, and complexity of derivatives.

General objective of the study

The general objective of this study was to examine antecedents of derivative instruments by Kenyan Commercial Banks.

Specific Objectives

The specific objectives of the study were;

i. To examine the effect of contract complexity on the adoption of derivative instruments by commercial banks in Kenya.
ii. To determine the influence of public awareness framework on the adoption of derivative instruments by commercial banks in Kenya.

LITERATURE REVIEW

Theoretical Review

Markowitz's Modern Portfolio Theory (MPT)

The major outstanding proponent of Modern Portfolio theory is Markowitz (1952) that presents the expected returns and risk of portfolio of assets. The theory explains that portfolio risk can be measured by calculating the variance of returns of the portfolio. The theory postulates that the total risk of a portfolio of assets can be reduced through diversification such that the portfolio has a mix of financial assets with varying income and risk characteristics. The theory explains that expected returns of a portfolio is the sum of product of returns of individual assets and the weight of the asset in the portfolio (Markowitz (1952). The risk facing the portfolio is a function of risk of specific assets under the portfolio as well as the covariance in returns between all possible pairs of assets that can be formed under the portfolio (Surtee & Alagidede, 2023)

The Modern Portfolio Theory (MPT) demonstrates a portfolio of financial assets can be constructed such the expected risk of the portfolio is at it minimum and the expected returns is at maximum. The construction of portfolio is a continuous process where some assets are offloaded while other are purchased until the firm can achieve optimal portfolio (Berk & Tutarlı, 2021). The process of investment portfolio construction goes through major steps from portfolio objectives, selection of financial assets, valuation of financial assets, allocation of

assets, evaluation of performance of portfolio and portfolio change. The goal of portfolio theory is to construct a portfolio that has a portfolio risk that is lower than any individual security (Lindquist, Rachev, Hu & Shirvani, 2022).

The theory is relevant for the current study on factors affecting adoption of derivative instruments among commercial banks in Kenya. The risk managers of commercial banks can rely of the theory in diversifying their portfolio of financial assets by including the derivative instruments in the portfolio. The commercial banks can rely on the theory in constructing investment portfolio that ensures returns are optimized and risk diversified across assets in the portfolio including having derivatives such as options, futures and swaps among the portfolio of assets. The theory therefore is relevant on the dependent variable: the adoption of derivative instruments as part of other financial assets held by commercial banks.

Information Signaling Theory

The information signalling theory was first proposed by Lintner in 1956. The theory holds that prices of company shares respondents to changes in the payment of dividends. Even though Modigliani and Miller in 1961 did initially favor dividend irrelevant position, they later held that in a real capital market, market prices of shares is a function of dividend announcements through information signaling. Information signaling theory has of late become a leading theory in explaining the relationship between dividends and market price of shares. Connelly, Certo, Reutzel, DesJardine and Zhou (2025) argued that the dividend announcement act as information that is relied on by investors when making decisions on the purchase of shares.

The information act as a signal of future cash inflows promised to the shareholders through cash dividend payments. The theory explained that increases in dividend payout ratio might indicate that managers of a company are expecting a higher level of cash flows in the future. Theory is based on the presupposition that investors have no complete information about future capital gains and dividend cash floors. Further, Information signaling theory presupposes that tax on dividends is high compared to what is charged on capital gains. Bafera and Kleinert (2023) also explains that even under these conditions of the tax burden associated with dividends; Firms still prefer to pay dividends to act as a positive signal of the bright future of the firm, especially to the shareholders.

The theory is relevant for the current on factors affecting adoption of derivative instrument. The theory is specifically relevant on the relationship between public awareness framework and adoption of derivative instruments as it explains how information on underlying assets about derivatives affects the returns and value of derivatives. Theory explains that dividend announcements send a signal to the public that the company promises higher cash flows and capital gains in the future hence derivatives associated with such stock would demand more driving prices high. The dealings in the derivatives is dependent on the information about underlying assets especially if they are traded in the capital market.

Conceptual framework

The conceptual framework in figure 2.1 shows the interaction between independent variables (contract complexity, public awareness framework) and dependent variable adoption of the derivatives instruments.

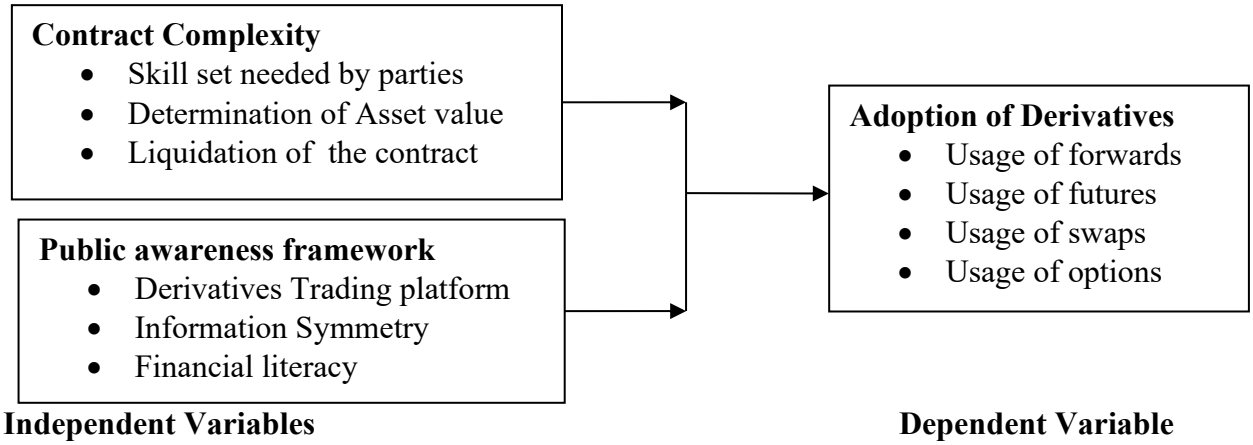

Figure 2. 1: Conceptual Framework

Contract Complexity

Contract complexity concerning derivatives are the conditions that parties to derivatives contracts have to abide by. Derivatives are a form of contract between parties that have laid down rules from the valuation, acquisition, use up to liquidation (Callens, 2022). The contract in derivatives explains the principles regarding the operation of derivatives instruments. Contracts regarding derivatives use are complicated since derivatives do not have their own independent valuation with the value depending on the underlying asset. The process of valuation of derivatives is complicated requiring complex models to navigate. Additionally, the movement in the process of derivatives is also complicated requiring advised technology for its trade and operations (Miyamoto & Kubo, 2021). Even the skills set for trade in derivatives is advanced requiring advanced training which are not readily available to parties involved in derivatives trade from the investing public, brokers and dealers in derivatives and the regulatory authority for trade in derivatives. Contract complexity will be measured using indicators such as skill set needed by parties, determination of value of derivatives, ease of liquidation of the derivative contract and advanced technology of trade in derivatives.

Public Awareness Framework

Public awareness Framework in the context of derivatives market is the public's level of understanding about the importance and implications of use of derivatives as an investment vehicle and tool of risk management among businesses (Kaakandikar, 2022). Public regarding derivatives involves explaining issues and disseminating knowledge to people so that they can make their own decisions regarding investment into derivative instruments. High public awareness occurs when a significant proportion of society agrees that knowledge on derives is critical in risk management and development of derivatives market. Low public awareness occurs when a majority of people do not know or do not care about the use and significance of derivative instruments as a risk hedging tool and channel of investment (Panda & Kohli, 2024). There are two forms of public awareness. First, there is general public awareness, which involves widespread understanding and acknowledgement of the issues of derivatives on a societal level. Second, there is self-awareness, which occurs when individuals understand how derivatives work and appreciate the position they play in the general economy. Public awareness framework are the channels through which information on derivatives reaches the investing public to enable them make informed decisions regarding derivative instruments.

Umamaheswari, Anand and Nithya (2022) established that investors are less aware about the equity futures and options and finally they feel that market movements affect their investment pattern. Public awareness framework will be measured using indicators like derivatives trading platform, derivatives information symmetry, public financial literacy and specialized departments by firm firms to handle derivatives.

Empirical Literature Review

Contract Complexity and Adoption of Derivative Instruments

Al-Slehat, Al-Sharif and Qwader (in Muthine, 2021) sought to examine the factors responsible for the adoption of instruments of financial derivatives in commercial banks in Jordan. The study focused on complexity of contracts and investor awareness system. Structured questionnaires were self-administered among the 13 Jordan commercial banks to collect information for the study. The data was analyzed using e-views where the study established that complexity of the derivatives contracts and investors awareness were the key factors hindering the penetration into derivatives market in Jordan.

Njoroge, Matumo and Maina (in Tobias, Egessa & Dennis, 2024) investigated the factors affecting the adoption of derivative instruments among listed firms in Kenya. The study adopted primary data collected using structured questionnaires filled by the respondents. The study revealed that use of derivatives among listed firms in Kenya is mainly influenced by market environment complexity, legal and regulatory framework and operational efficiency of the derivative market. Complexity of market environment for derivatives was established to be critical in the adoption of derivatives instruments and that more effort was needed to ensure the staff are well trained and developed to ensure the staff can understand the complex derivative instruments. Further, the study established that operational inefficiency contributed to the complexity of the derivative instruments.

Muhia (in Gathua, 2023) investigated the factors responsible for slow development of financial derivatives in Kenya. The study was based on primary data collected using structured questionnaires. Data found was analyzed using SPSS and linear regression. The study revealed that Kenyan market for derivatives was still developing and that most of the trading for derivatives were over the counter and non-over the online plat form. the most common derivatives were options, forward contracts and swaps and that the trade in credit derivatives and structured notes were not existing anywhere at the Nairobi securities exchange. The research revealed that the main hindrances for commercial banks in adopting financial derivatives in Kenya included poor structural facilities including inaccessibility to trading platforms, weak trading rule, poor trading systems and non-existence of a central counterparty. The challenges made the trade in the complex contractual instruments hard. Study further revealed that the parties involved in trade in derivatives ought to have advanced channel for trade in the complex financial instrument.

Study by Ameer, Mohd and Abdulla (in Haron & Othman, 2021) established that there is an inadequate expertise in existing among the parties handling derivatives. The inadequate expertise has made it almost impossible for most parties dealing with derivative to understand the complex derivative products. Training on how to handle complex derivative instruments is thus. The adoption of complex derivatives which is not matched with requisite and necessary expertise increases the inherent risk in the instrument implying all staff handling the derivatives should be highly trained. Pengelly (in Hasan, 2023) in a study among financial managers and investors showed that lack of in-depth knowledge about derivatives instruments was affecting their adoption negatively.

In a study by Das (in Dzung, Thanh & Anh, 2021), on factors influencing trade in derivative instruments. The study revealed that knowledge on the derivative market was inadequate making the trade in derivatives to be considered disastrous. Other practitioners have stated that

that derivatives market and world was a world of beautiful lies. The study states further that the main reason the derivatives instruments are not adopted by majority of investors and investing institutions is that the number of people who understand and use the instruments in the right manner are limited. The expertise needed for successful trade in derivatives is limited and number of people aware of the derivatives have limited knowledge and exposure. The study recommended there is an urgent need for dealers in derivatives to possess adequate knowledge on the operation of the derivatives.

Public Awareness Framework and Adoption of Derivatives Instruments

Bansal and Kalra (in Jisha, Sumathy & Jayalakshmi, 2022) investigated the views of investors about derivative instruments primary data was collected using structured questionnaires administered to 70 investors. Chi-square test was adopted to analyze the data collected. The research showed that investors had very little knowledge concerning derivatives and their performance The study further revealed that the adoption of derivatives were dependent on the level of knowledge and awareness among investors.

Njoroge, Matumo and Maina (in Tobias, Egessa & Dennis, 2024) examined the effect of factors influencing the development of financial derivatives instruments in Kenya among the listed firms. The study established that most of the staff Capital Market authority, listed firms and investment brokerage firm were not aware of financial derivatives. The resultant effect is that investors would not be informed of the basic understanding of the instruments available and the terms of transactions in the market.

Tripathi Gunjan (in Mageswari & Sasirekha, 2024) investigated the awareness level and attractiveness of various derivatives among 100 retail investors in India using structured questionnaire. The research adopted chi square test to examine the association between different variables and investment in derivatives among the retail investors. The study revealed that the retail investors preferred and information framework like the stock market movement to enable them know the performance deviation of derivative instruments. The study also revealed that brokers should make the derivative investment popular through marketing to enhance the probability of their adoption among investors.

Kamenchu (in Isabwa, 2022) examined the factors affecting the adoption of financial derivatives among commercial banks. The study was a census of all commercial banks licensed by central bank of Kenya. The study focused on five factors making the independent variable including technology for information on derivatives, trade liberalization, regulatory framework, macroeconomic factors and Savings/investment ratio. The study revealed that about eighty percent of commercial banks in Kenya use derivative s of some sort for hedging risks and speculative purposes or both. The study further revealed technology, legal framework and trade liberation were leading factors influencing adoption of derivatives among Kenyan commercial banks.

Kukreja (in Kaur, 2024) carried out a study to examine the views of investing public towards the use of derivative instrument in the capital market in India. The study revealed that derivative instruments are not popular among individual average investor. The study revealed than only investors who are highly educated getting the help of brokers were in a position to invest in the derivative instruments. The study revealed that the major hindrance in investing in derivative market was inadequate information of derivatives and complex nature of derivatives. Other investors also had wrong premises about derivatives.

Shrikrishna and Rakesh (in Kumar, Mehraj & Parray, 2025) sought to establish the factors influencing investment behavior in derivatives by retail investors. The study examined their psychology, level of knowledge about equity futures and options and objectives. The study relied on Primary data collected from fifty retail investors. The research also examined the determinants of derivative adoption such as their awareness level and duration of investment.

The research established that study revealed investors are less aware about the equity futures and options and finally they feel that market movements affect their investment pattern.

According to Atkin (2024) the lack of information about the secondary market and the process of trading is among the key hindering factor for investors trading in the secondary market. Retail investors should therefore understand the risks and advantages of trading in commodities futures before making an investment. After gaining an understanding of the challenges facing an industry, the attributes that are considered are information which is also obtained from financial statements and financial analysis, including forecasts and ratios, along with non-quantitative information obtained through site visits to assess quality of management, quality of product, and customer satisfaction.

RESEARCH METHODOLOGY

The study adopted a descriptive research design to examine how complexity of derivative contracts and public awareness frameworks, influence the adoption of derivative instruments in Kenya's commercial banking sector. This design enabled a systematic assessment of associations among the key variables while capturing the current state of derivative use within the industry. The study targeted all 40 licensed commercial banks operating in Kenya as at 31 December 2019. Because the population was small and well-defined, a census approach was used, ensuring full coverage and eliminating sampling error. Financial risk managers were selected as respondents because of their direct involvement in derivative policy, implementation, and operational decisions.

Data was collected using structured, close-ended questionnaires, chosen for their efficiency, standardization, and suitability for quantitative analysis. A pilot study involving 10% of the population was conducted to refine the instrument, enhance clarity, and confirm validity and reliability before full deployment. The collected data was analyzed using descriptive statistics to summarize variable distributions and inferential techniques, including correlation and multivariate regression modeling, to determine the effect of the four explanatory variables on derivative adoption. The study further conducted normality, linearity, and multicollinearity tests to ensure the robustness and adequacy of the Ordinary Least Squares model.

RESULTS AND DISCUSSION

The study issued 36 questionnaires to the commercial banks head offices in Nairobi after 4 banks were let out for having participated in the pilot testing. The questionnaires that were adequately filled and returned were 32 representing questionnaire return rate of 80%. The return rate was more than adequate for the purpose of the study.

Descriptive Analysis

The study utilised the descriptive analysis to examine the variables. The independent variables included complexity of derivatives contract, public awareness. The dependent variables were adoption of derivatives instruments. The study utilised Likert type scale to examine various statements where the respondents were required to rate various statements about factors affecting adoption of derivative instruments.

Complexity of Derivatives Contract

The study sought to evaluate the perception of commercial banks on complexity of derivatives contracts as presented in Table 1. The statements about perception on complexity of derivatives contract have been ordered from the most supported to the least supported based on mean score. The most supported statement was that there is inability to liquidate the contract, derived when necessary, with the least possible losses as depicted mean and standard deviation ($\mu x = 4.56$ and $\sigma x = .669$). The responses are leaning towards strong agreements with statements implying

that most commercial banks view that it is complicated to liquidate the derivatives at any time when it becomes necessary without losing a part of the value in the instruments plus other legal liabilities associated with the contract. The least supported statement was Contract for derivatives trade are very complex as depicted by mean and standard deviation (μx= 4.00 and σ = .508) leaning towards just agreement with statements. The overall mean score on all the statements of μx = 4.30 showed that the respondents were of the opinion that derivatives instruments are associated complex processes right from evolution of risk, acquisition of the derivative and liquidation at the strike price and period.

Table 1: Perception on Complexity of Derivatives Contract

Complexity of Derivatives Contract	Min	Max	Mean	Std. Dev
There is inability to liquidate the contract, derived when necessary, with the least possible losses.	2	5	4.56	.669
There is difficulty in determining the asset value at the beginning of the contractual period	3	5	4.53	.567
There is information asymmetry on future market prices of underlying assets	2	5	4.44	.669
Most investing public do not understand the derivatives contracts	3	5	4.38	.554
The information for risk quantification in banks is inadequate	1	5	4.31	.780
The consequences of wrong risk projections is hash in derivative contracts	3	5	4.25	.622
There is Lack of an advanced technological environment to facilitate the clearing process of complex derivatives.	2	5	4.22	.706
There is absence of designed models for derivative contracts in a manner that would limit the manipulation of these contracts.	3	5	4.22	.608
There is absence of an effective system for monitoring performance and the use of derivatives that are selected.	3	5	4.09	.641
Contract for derivatives trade are very complex	3	5	4.00	.508
Overall Mean Score			**4.30**	**.632**

Public Awareness Framework

The study also sought to evaluate the perception of commercial banks in Kenya on status of public awareness framework existing in the commercial banks and the derivatives market as a whole for the benefit of the investing public as presented in Table 2. The statements about perception on status of public awareness framework have been ordered from the most supported to the least supported based on mean score. The most supported statement was that there is a weak channel of sharing information on derivatives in the financial market as depicted mean and standard deviation (μx= 4.44 and σx= .669). The responses are leaning towards strong agreements with statements implying that most commercial banks view that the investing public have tended to ignore the derivatives instruments when making investment decisions probably due to inadequate information and awareness framework on the instruments. The least supported statement was derivative market has been overlooked by potential participants looking for investment opportunities (μx= 3.87 and σx= .421) leaning towards just agreement with statements. The overall mean score on all the statements of μx = 4.18 showed that the respondents were of the strong opinion that there is weak public awareness framework for trade in the derivatives both in the commercial banks and the derivatives market

as a whole. The weak status of public awareness framework could be blamed for poor adoption of the derivatives by the commercial banks.

Table 2: Perception on Public awareness Framework

Statements on public awareness framework	Min	Max	Mean	Std. Dev
There is a weak channel of sharing information on derivatives in the financial market	3	5	4.44	.669
Investors are not ready to learn how to trade in derivatives in the financial Market.	1	5	4.28	.991
The banking sector does not have the intention to establish specialized departments in the field of derivatives instruments to advise prospective investors	1	5	4.28	.851
The level of awareness of the public on derivatives market in Kenya is low	1	5	4.28	.851
there is lack of awareness of the importance of these instruments in the market by investing public	2	5	4.22	.792
The absence of a free market, characterized by transparent, fairness and disclosure is affecting adoption derivatives	3	5	4.16	.574
Information being shared on derivative instruments in the market is not relevant to investors	3	5	4.13	.554
There is information asymmetry between the parties involved in trade in derivative instruments.	1	5	4.00	.880
Derivative market has been overlooked by potential participants looking for investment opportunities	2	4	3.87	.421
Overall Mean Score			**4.18**	**0.731**

Adoption of the Derivatives

Finally, descriptive statistics was employed to examine the level of adoption of derivatives among the commercial banks in Kenya as presented in Table 3. The statements about adoption of derivatives have been ordered from the most supported to the least supported based on mean score. The most supported statement was the banks avoid dealing with future contracts in any of their investment instruments as depicted mean and standard deviation (μx= 4.22 and .792). The responses are leaning towards strong agreements with statement implying that most commercial banks have not adopted futures contracts as a derivative instrument for hedging financial risks they may be facing. The least supported statement was the banks do not deal with purchase options contracts in their banking Investments (μx= 3.75 and σx= .842). The responses were tending towards just agreement with statements implying that options were more relatively adopted compared to other derivatives instruments. The overall mean score on all the statements of $\mu x = 4.03$ showed that the respondents were in agreement that the adoption level of derivatives instruments were low compared to other financial instruments. The low adoption could be attributed to high risk tolerance level in commercial banks, the complexity of derivatives instruments, the weak public awareness framework and strong liquidity among the commercial banks studied.

Table 3: The Adoption of Derivatives Instruments

Statements on adoption of derivatives instruments	Min	Max	Mean	Std. Deviation
The banks avoid dealing with future contracts in any of its investment instruments.	2	5	4.22	.792
The banks does not use swap contracts in interest rates.	2	5	4.22	.792
The bank does not deal with Forward contracts in the currencies.	2	5	4.09	.893
The banks avoid dealing with currency swap contracts in swapping their currencies or loans.	1	5	4.00	.916
The banks faces difficulty in using selling options contracts in the banking investments.	2	5	3.91	.777
The bank does not deal with purchase options contracts in its banking Investments.	1	5	3.75	.842
Overall Mean Score			**4.03**	**0.835**

Correlation Analysis

The study sought to establish the association between complexity of derivatives contract, public awareness and the adoption of derivatives instruments among commercial banks in Kenya. The study adapted bivariate Pearson correlation coefficient. The association between complexity of derivatives contract and adoption of derivatives instruments was negative, moderate and statistically significant at 0.05 level of sifinificance (r = -.620, p-value = .000<0.05). The correlation between public awareness framework and adoption of derivatives instruments was strong, positive and statistically significant at 0.05 level of significance (r= .790, p-value =.000< .05).

Table 4: Bivariate Pearson Correlation Coefficients

		Complex Derivatives Contract	Public Awareness Framework	Adoption of Derivatives
Complex Derivatives Contract	Pearson Correlation	1	-.279	-.620**
	Sig. (1-tailed)		.061	.000
	N	32	32	32
Public Awareness Framework	Pearson Correlation	-.279	1	.790**
	Sig. (1-tailed)	.061		.000
	N	32	32	32
Adoption of Derivatives	Pearson Correlation	-.620**	.790**	1
	Sig. (1-tailed)	.000	.000	
	N	32	32	32

Regression Analysis

The study adopted multivariate regression analysis to examine the effect of complexity of derivatives contract, and public awareness on the adoption of derivatives instruments among commercial banks in Kenya. The study revealed that the effect of complexity of derivatives contract on adoption of derivative instruments was negative and statistically significant at 0.05 level of significance (β2 = -0.157, t = -3.098 and p-value = 0.005<0.05). The effect of public awareness framework on derivatives instruments adoption among commercial banks was positive and statistically significant at 0.05 level of significance (β3 = .475, t = 7.451 and p-value = 0.000<0.05).

$$Y = 3.418 - .157 X_2 + .475 X_3$$

Table 5: Regression Coefficients of the Independent Variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.418	.492		6.948	.000
	Complex Derivatives Contract	-.157	.051	-.305	-3.098	.005
	Public Awareness Framework	.475	.064	.627	7.451	.000

Discussion of Results

Complexity of Derivatives Contract and Adoption of Derivative Instruments

The descriptive analysis revealed that the overall mean score on all the statements was (μx = 4.30) leaning towards strong agreement showing that the respondents from the commercial banks were of the opinion that derivatives instruments are associated with complex processes right from evolution of risk, acquisition of the derivative and liquidation at the strike price and period. Correlation analysis further showed that the association between complexity of derivatives contract and adoption of derivatives instruments was moderate and negative (r = -.620) implying inverse relationship. In addition, regression revealed that the effect of complexity of derivatives contract on adoption of derivative instruments was negative and statistically significant (β2 = -0.157, t = -3.098 and p-value = 0.005<0.05) implying that the more complex the derivative contract becomes, the less chances of adoption of the derivative instrument among the commercial banks. The coefficient (β2=-0.157) of complexity of derivative contract measures the responsiveness of adoption of derivative instrument to a percentage change in the complexity of the derivatives contract and that one unit change in complexity of derivatives contract leads to 0.157 units change in the adoption of derivatives in the opposite direction. The effect was negative and significant meaning that complexity of derivatives contract is major determinant for the adoption of derivatives instruments among commercial banks in Kenya. The study further concludes that as the derivative contract becomes more complex, the adoption rate of the said derivative instrument falls hence the negative relationship as the bank staff finds it hard to adopt what they do not understand.

The findings are in congruence with study Al-Slehat, Al-Sharif and Qwader (in Muthine, 2021) that established that complexity of the derivatives contracts and investors awareness were the key factors hindering the penetration into derivatives market in Jordan. Njoroge, Matumo and Maina (in Tobias, Egessa & Dennis, 2024) revealed that use of derivatives among listed firms in Kenya is mainly influenced by market environment complexity was critical in the adoption of derivatives instruments and that more effort was needed to ensure the staff are well trained and developed to ensure the staff can understand the complex derivative instruments. Muthine (2021) revealed that the main hindrances for commercial banks in adopting financial derivatives in Kenya included poor structural facilities including inaccessibility to trading platforms, weak trading rule, poor trading systems and non-existence of a central counterparty. Ameer, Mohd and Abdulla (in Haron & Othman, 2021) established that there is an inadequate expertise in existing among the parties handling derivatives. The inadequate expertise has made it almost impossible for most parties dealing with derivative to understand the complex derivative products.

Public Awareness Framework and Adoption of Derivative Instruments

The study also sought to establish the relationship between public awareness framework and adoption of derivative instrument among commercial banks in Kenya. The descriptive analysis revealed that overall mean score on all the statements ($\mu x = 4.18$) showed that the respondents were of the strong opinion leaning towards strong agreement that there is weak public awareness framework for trade in the derivatives both in the commercial banks and the derivatives market as a whole. The weak status of public awareness framework could be blamed for poor adoption of the derivatives by the commercial banks. The correlation analysis also revealed that relationship between public awareness and adoption of derivatives instruments was strong and positive ($r= .790$) implying that the stronger the public awareness framework, the higher the chance of adoption of derivatives. Further, regression analysis revealed that public awareness framework has a positive and significant effect on adoption of derivatives instruments among commercial banks in Kenya ($\beta 3 = .475$, $t = 7.451$ and p-value $= 0.000<0.05$). The positive relationship means that the more the public is made aware of the trade and operations in the derivatives market, the better will be the adoption of derivatives among the commercial banks. The coefficient ($\beta 3=0.475$) of public awareness framework was positive implying that for every unit increase in public awareness framework, the better will be the adoption of the derivative instruments by 0.475 units in the same direction. The effect was statistically significant hence, it can be concluded that public awareness framework is major determinant of the rate of adoption of derivative instruments among commercial banks in Kenya.

The findings are in agreement with Bansal and Kalra (in Jisha, Sumathy & Jayalakshmi, 2022) that showed that investors had very little knowledge concerning derivatives and their performance The study further revealed that the adoption of derivatives were dependent on the level of knowledge and awareness among investors. Njoroge, Matumo and Maina (in Tobias, Egessa & Dennis, 2024) established that most of the staff Capital Market authority, listed firms and investment brokerage firm were not aware of financial derivatives. The resultant effect is that investors would not be informed of the basic understanding of the instruments available and the terms of transactions in the market. Tripathi Gunjan (in Mageswari & Sasirekha, 2024) revealed that the retail investors preferred and information framework like the stock market movement to enable them know the performance deviation of derivative instruments. Kamenchu (in Isabwa, 2022) revealed that about eighty percent of commercial banks in Kenya use derivative s of some sort for hedging risks and speculative purposes or both. The study further revealed technology, legal framework and trade liberation were leading factors influencing adoption of derivatives among Kenyan commercial banks.

Conclusion of the Study

the study findings from correlation analysis showed existence of a negative and statistically significant relationship between contract complexity and adoption of derivative instruments. Further, regression analysis indicated a negative and statistically significant relationship between contract complexity and adoption of derivative instrument. The study concludes that contract complexity has a major effect on adoption of derivative instruments by commercials banks in Kenya. According to a similar study by Muthine (2021), the main hindrances for commercial banks in adopting financial derivatives in Kenya were poor structural facilities including inaccessibility to trading platforms, weak trading rule, poor trading systems and non-existence of a central counterparty. Also, Haron and Othman (2021) concluded that there is an inadequate expertise existing among the parties handling derivatives which made it almost impossible for most parties dealing with derivative to understand the complex derivative products.

The study findings from correlation analysis showed existence of a positive relationship between public awareness framework and adoption of derivative instruments. Further,

regression analysis indicated a positive and statistically significant relationship between public awareness framework and adoption of derivative instrument. The study concludes that public awareness framework has a major effect on adoption of derivative instruments by commercials banks in Kenya. The conclusions were in agreement with Jisha, Sumathy and Jayalakshmi (2022) who concluded that investors had very little knowledge concerning derivatives and their performance. Similarly, Tobias, Egessa and Dennis (2024) concluded that the adoption of derivatives was dependent on the level of knowledge and awareness among investors.

Recommendations

The study concluded that the effect of contract complexity on adoption of a derivative contract was negative and significant. This implies that the more complex the derivative contract becomes, the less chances of adoption by commercial banks. The study recommends simplification of derivative contract process right from evolution of risk, acquisition and liquidation of the contract.

The study concluded that the public awareness framework on derivatives instruments adoption among commercial banks was positive and statistically significant. This implies that the stronger the public awareness framework, the higher the adoption rate. The study thus recommends that regulatory agencies such as Central Bank of Kenya and Capital Market Authority should intensify derivatives public awareness and marketing campaigns. Further, information pertaining derivatives process of trading and secondary market should be made available to investors. This would not only educate the public/investors on advantages of investing in derivative contracts but also increase subscription rates.

Suggestions for Further Research

This particular study was exhaustive in assessing factors that influence the adoption of derivatives instruments among commercial banks in Kenya. However, further studies focusing on factors influencing the adoption of other forms of derivatives such as commodity derivatives for oil and coffee need to be carried out. Secondly, a research study using regulatory agencies such as Central Bank of Kenya and Capital Markets Authority as respondents need to be carried out. This would aid in increasing awareness of the factors influencing adoption of derivative instruments by commercial banks in Kenya.

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