EFFECT OF ASSET VALUATION APPROACHES ON FINANCIAL PERFORMANCE OF REAL ESTATE INVESTMENTS IN WESTERN KENYA REGION

BY

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DECLARATION

This is my original work and it has not been presented in any university for Examination.

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DEDICATION

This Project is dedicated to my Father Benard Wanjala Bifwoli, my Mother Ruth Nasimiyu Bifwoli and my brothers and sisters for in God everything is possible

ABSTRACT

The real estate sector accounted for 6.2% of U.S. gross domestic product in 2018. It's more than the $1.13 trillion in 2017 but still less than the 2006 peak of $1.19 trillion. At that time, real estate construction was a hefty 8.9% component of GDP. Real estate valuation is still a challenge in Nigeria posing a significant challenge to the country's real estate sector. Due to lack of robust valuation approaches, most Nigerian cities are overpriced, which discourages potential investors.According to Uganda Bureau of Statistics, the real estate sector on average contributed about 7.5 per cent to Uganda's GDP in 2020 as compared to 9.1% in 2017 showing a significant reduction. In the recent past, there has been progress in infrastructure advancement in Kenya. However, in the Kenyan real estate sector, financial performance has been on a declining trend with a slowed down performance of up to 18.4% in 2017, with far reaching implications in its potential contribution to the Kenyan Economy. In Western Kenya Region, real estate sector offered investors with 13% return on investments annually with the income revenue of 4.8% and yearly capital gratitude of 8.5%. This was still low compared to other regions in the country for instance information on the Kenyan real estate sector's financial performance indicate a slowed down trend with 16.2% in 2016, 15.5% in 2017, 10.1% in 2018 and 13.2% in 2019.In spite of the relative National success in the sector, real estate asset valuation still presentedsignificant problem in measuring industry performance.Incorrectly valued assets can create a number of problems to the investors and the country at large. These could range from negative or stagnant cash flows to shocks in the general economy brought about by inflation. Therefore, the main aim of this study was to examine the effect of asset valuation approaches on financial performance of real estate management investments in Western region, Kenya. Specifically, the study sought to establish contribution of asset-based valuation approach on the financial performance of real estate investments; to determine effects of the Income Approach to the valuation on the financial performance of real estate investments; and to examine effects of Market Approach to the valuation on the financial performance of real estate investments in the Western region, Kenya. This study was guided by the Q Theory of Investment which deals with Market Value and Development costs and the Real Estate Simulation Theory. The study targeted 52 registered real estate agents within the western Kenya region. The study adopted a census technique to gather all the required data from the existing population. The studyemployed a correlational research design and was targeting the real estate agencies registered in Western region of Kenya.Structured questionnaires and secondary data schedules wereused to gather the required data for analysis. Pretesting of survey instruments was conducted as an effort of ensuring that there was both content validity and reliability. Both descriptive and inferential statistics was employed for data analysis. From the study results, asset-based approaches explained 34.3% of variance in financial performance of real estate investments while income based explained 12.1% and market based explained 57.2%. Using returns on investment as measure of financial performance, the three hypotheses were rejected although income based valuation had significant negative effect on return on investment. This implied that increase in market and asset based valuation approach would result to increase in the return on investment while increase in income approach would result to decrease in the return on investment. The study therefore concluded that asset valuation approaches influence financial performance and recommended that real estate firms should use more than once approach during valuation of their assets.

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ABBREVIATIONS AND ACRONYMS

AFDB	African Development Bank
ANOV	Analysis Of Variance
CAHF	Centre for Affordable Housing Finance
CAMEL	Capital adequacy, Asset quality, Management, Earnings, Liquidity, and Sensitivity
DCF	Discounted Cash Flow
DLOC	Discounts For Lack Of Control
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
ECF	Equity Cash Flow to Equity
EMH	Efficient Market Hypothesis
EV	Enterprise Value
GA	General Appraisers
GAAP	Generally Accepted Accounting Principles
M&A	Merger and acquisition
MVEq	Market Value If Equity
MVIC	Value of the Invested Capital
NACVA	National Association of Accredited Valuators and Analysts
NPLs	Non-Performing Loans
RI	Residual Income
SPSS	Statistical Package for the Social Sciences
US	United States
VIF	Variance Inflation Factor

OPERATIONAL DEFINITIONS OF TERMS

Asset Valuation: It is the process of identifying the reasonable market or current price of assets, making use of book values, absolute valuation methodologies such discounted cash flow analyses, option pricing models, or similar

Asset-based valuation: It is a kind of evaluation used in business that places an emphasis on the worth of a firm's assets or the acceptable market value of the overall assets of the company after obligations have been subtracted from those assets.

Financial Performance: It is a thorough analysis of a company's total position in terms of its assets, equity, liabilities, costs, revenue, and overall profitability. This kind of analysis is referred to as "comprehensive assessment." It evaluates how efficiently the firm can generate income from its principal line of business using the assets it already has.

Real Estate Investments: It denotes to any residential structure preserved solely for the purpose of generating income either through rental income or through market value appreciation.

Real Estate: Encompass the physical property that comprise of land and its improvements, which contain roads, buildings, structures, fixtures, and utility systems.

Valuation: It refers to the process of determining the present worth of a company or an asset in its current state. In most cases, valuers will use methods such as taking into account the management of the firm, the potential for future profits, the current market value of the company's assets, and the makeup of the capital structure of the organization.

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CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Growth in the real estate industry is often cited as a key indicator of economic health. The importance of the real estate market resides not only in the positive externalities and spillover effects it has on a number of national economies, but also in the social and political climate it helps to foster. The real estate sector connotes to immobile property, for example land, or anything else, such as houses, that are forever devoted to it (Moko & Olima, 2014). The individual also procures a range of privileges which include ownership, control and transmission rights, when a person acquires real estate. Understanding investment in real estate is significant because it typically requires a large investment as well as a long-standing investment. The market in regard to real estate sector can also be volatile (Mariano, 2011). The understanding is mainly significant if an individual goes yonder purchasing a home to essentially investing in the real estate sector. In the real estate industry, there are many ways in which an investor can engage (Dubois & Anderson, 2010). Investment usually requires a lump sum commitment now for potential income flow sources and capital appreciation (Panle & Parag, 2011). Put in another way, it is the purchase of an asset by a person or entity, either through its income or capital gains, in order to earn returns. The preceding demonstrates how important it is to evaluate potential real estate investments based on the financial performance of the various market participants in the industry.

Real estate constitutes a large portion of the wealth of most individuals, and this is particularly true for many US homeowners. 65.1 per cent of American families held their primary residence in 2019 (US National Association of Realtors, 2020), according to the Federal Reserve's Survey of Consumer Finances. The breadth and depth of the market in the real estate industry make it an alluring and fruitful line of work for a variety of different investors. However, the improper use of household debt (sub-prime loans) and mortgage-backed securities in the US housing markets may have led mortgage lending in the US to drop more rapidly than it did in the majority of European countries.

With most of the rest of the world, German and Japanese real mortgage rates have plummeted (Hull et al., 2011). Japan was in the midst of an economic recession that lasted for more than a decade. Over-leveraged banks and subaquatic mortgages for several customers have resulted to the nation's housing market to be in a steady state of debility, even with low interest and mortgage rates (Mayer, Pence & Sherlund, 2018). According to Goldman Sachs Group Inc., the overall worth of Chinese houses and makers' inventory in 2019 reached $52 trillion which is twice the size of US suburban marketplace and surpassing even the entire US bond market. However, as the central authorities continue to emphasize the establishment of a long-term framework for the healthy growth of the sector.

Africa is witnessing an exponential population boom as a result of fast urbanization and the fact that most African nations are developing rapidly; the AFDB is unable to meet the demand for housing in African cities (2011). Sixty-two percent of the people who live in African cities live in informal housing, which has insufficient or non-existent required amenities, according to the CAHF (2012). Africa's middle class has been rising, according to the Housing Finance in Africa Yearbook (2018). In recent years, the compelling long-term investment case for Sub-Saharan Africa has attracted growing numbers of foreign investors to explore opportunities within the region. However, the restricted supply of investment-grade stocks and the opacity of markets outside South Africa have limited transactional activities.

The ever-expanding middle class in Kenya, which has larger discretionary income, has been one of the primary drivers of growth in the real estate business in Kenya during the last decade. In general, the returns that the industry has generated have most definitely surpassed those of parities and government securities. From the survey conducted by Hass Consult with regard to property, it was indicated that there was an increment of prices by 30% in the year 2006 to 2011. The Mortgage Financier Housing Finance which conceive plans to enlarge their operations in the Eastern African states, indicates that real estate sector expansion in Kenya is favored by one main component that is the high returns at a minimum cost. The sector reports denote that, good regulations from the government and appropriate investment vehicles heightened by the availability of capital contain some of the elements that place Kenya forward from the rest of East African

nations in respect with property investment. Besides, Kenya being stable economically provide greater returns on investments because of the high demand of houses.

However, the market of houses in Kenya is rapidly cooling amid to the falling demand triggered by the constrained credit admission attached with the constant surplus of high-end residential advancements. In the year 2019-quarter three, the sales index of the Hass Composite property, indicated that the sales of residential properties declined to 3.4% with a sharp contrast of a y-o-y increase of 8.1% throughout the same period of past year, grounded on the report given out by Hass Consult Limited. It was the subsequent and successive quarter of the y-o-y price reduced after declining by 3.2% in quarter two in the year 2019. This sector was one them which recorded the greatest progression in terms to non-performing loans(NPLs) past year, as both makers and owners were struggling to the repayment of their loans in accordance to Central Bank of Kenya. Consequently, cumulative amount of reclaimed houses are now being retailed at reduced prices.

According to Cytonn Investments (2018), the overall financial performance of Kenya's real estate market had a loss of 18.4% in the year 2017. The question of whether or not asset valuation methodologies boost or moderate the amount of returns (the indication of financial success) on Kenyan real estate investments is still open and has not been addressed. The bad performance of investments in the real estate market has far-reaching implications due to their poor performance. The fact that this is a significant sector that makes a significant contribution to Kenya's economy provides the foundation for this assertion. The empirical researches conducted in the past have produced mixed and conflicting results as they have failed to cater the worth mentioning subjects sufficiently. The paucity and flaws of the empirical studies specifically with the respect of asset valuation approaches and Kenyan real estate investments performance dictated this study.

As major industry players such as banks, supermarkets, hotels, and learning institutions compete for commercial space, the demand for real estate in the nation has been on the rise (Damary, 2019). The growing demand for real estate has had a ripple effect on the county's small towns and rural areas, as people are trying to put up residential properties outside the city. The impact of asset valuation approaches on the financial performance of real estate investments has not, however, been thoroughly studied, especially in the new frontiers of the real estate market, including such Western Kenya region.

An empirical investigation conducted by Cytonn Real Estate(2019) indicated that residential real estate industry in Western part of Kenya offer the investors with a sum total of 13.3% annually with a revenue of 4.8% and yearly capital appreciation of 8.5 percent. Nevertheless, there exist more pretty yields of income which is 9.6% per annum which is available in advancing the various development projects. On the same breadth, the report alludes to various constraints encountered by investing in this sector as low returns in investment, insufficient space for enlargement, poor planning, intolerance, fraud and political animosity. In spite this challenges, investors continue to venture in this business. Therefore, it is paramount to address the constraints by examining at how asset valuation approaches influence real estate investment in Western Kenya region.

Valuation is a highly important part of the management of assets in the real estate sector investments because it provides avenues for measuring and assessing facilities whose value is to be preserved or increased. This makes valuation a very important component of the management of assets (Conradie & Lamprecht, 2021). The importance of valuation cannot be overstated for any and all firms that are connected to the real estate industry. To put it in its most basic terms, it comprises figuring out the total amount that the assets will be worth on a certain day and recording that information. Investing in real estate, in particular, often involves dealing with assets that have limited lifespans and must have their prices adjusted properly. Stocks are only one example of the many types of financial assets that have an indefinite existence. At the conclusion of the "estimation phase," when these changes in asset life are taken into account, the value that is given to these attributes reflects them. In spite of this, there is a wide variety of motivations for why the value of assets is so important (Kipkurui, 2019) This includes the valuations done for the acquisition of the asset and its transfer, the assessment of taxes, the settlement of an inheritance or estate, investment, sale, financing, and expropriation.

Though the elementary notion of valuation is broad, there exist numerous quantifiable methods for treasuring assets (Mai, 2014). These methods can be categorized to offer with a direction for picking the suitable valuation methodology to achieve diverse asset management goals. A number of methods are observed for treasuring assets in the corridors of transport, financial sector and the corporate real asset administration from the perspective of the purpose of conducting valuation (Lee, Yeh & Yu, 2022). Conversely,

various methods of valuation back various drives and the significance of choosing suitable valuation approaches to attain diverse goals is debated. On this ground, some of the crucial subjects are recognized for the development of suitable valuation classification structures to connect with valuation methods with an agency's asset administration purposes and the scope which emphasize on the stakeholder's interests (Wirtz & Ehret, 2019).

It is feasible to categorize the several valuation techniques that are now in use (National Association of Accredited Valuators and Analysts (NACVA), 2012) as belonging to one of three broad categories: the Asset Based, Market, or Income valuation strategy (Oh & Park, 2022). The asset-based technique includes the Book Value Method and the Modified Net Asset Method, as well as the Premise of Replacement Cost; the Premise of Liquidation; and the Premise of Going Concern. The Capitalization of Earnings and Cash Flows Method and the Discounted Earnings and Cash Flows Method are generally the two methodologies that form the foundation of the Income Strategy. The Business Approach makes use of the Guideline Public Company Technique in addition to the Equivalent Private Transaction Method (NACVA, 2012).

The asset-based approach is a generic technique for valuing a firm, an ownership interest, or a securities by deducting liabilities and then evaluating the net worth of the remaining assets. A number of studies have examined the impact of asset-based valuation on the returns on real estate investments, and they have reached contrasting results. For example, Schulz (2013) examined asset based valuation of Germany real estate markets. The study investigated real estate returns in Germany and compares them with and U.S. and U.K. data in the same period. The econometric research makes use of a significant amount of data on Berlin's real estate market. In order to accomplish this purpose, the Hedonic House Price Index is used in this research as a proxy for real estate prices, while stock prices are used as a proxy for financial success over the period of time between 2005 and 2017. The study established that asset based valuation has insignificant effect Germany real estate markets as compared to U.S. and U.K real estate market. There was significant difference in regards to application of asset based valuation methods in Germany, U.S. and U.K real estate market. The investigation established that the asset-based method in Germany contained some demerits such that it was hard to determine the costs of replacement for the constructed houses due to the associated costs of construction for the new built houses have to be attuned for purpose of deprecation. The previous research

concentrated on real estate markets, but the one being conducted now is concentrating on real estate investment businesses; hence, it is challenging to apply the conclusions of the previous study to the present setting. In addition, financial success was evaluated based on stock prices, but the present research evaluated it using return on assets and return on investments.

Museleku (2021) carried out an assessment of asset valuation and performance real estate firms. Following a qualitative survey methodology, a sample of registered valuers were interviewed over the phone and given a questionnaire to fill out. In order to analyze the data, a content analysis and descriptive statistics were applied. Financial performance were shown to be least affected by asset value. In addition to this, valuers often fail to implement the necessary principles and procedures of valuation. Due to the qualitative character of the research, it was challenging to make conclusions about the impact that asset value has on the financial performance of real estate investment companies.

Conradie and Lamprecht (2021) conducted research in the Republic of South Africa to examine the evaluation procedures and financial performance of real estate enterprises there. This study used 11 semi-structured interviews with high-level executives from three major South African real estate firms to collect qualitative data, which was then analyzed thematically. Since the asset-based approach had an impact on financial results, it was determined to be the most appropriate method of valuation. This led to the conclusion that this strategy should be considered the most suitable. Additionally, it was discovered that the quantity of financing granted is predicated on the value of the real estate investment being adjusted by varied percentages. However, as this study was qualitative in nature, it's likely that the results might have been skewed by the researchers' preconceived notions about what the data meant. This was the case because the interpretive bias could have influenced the results of the researchth. A further drawback of the study was the fact that just three real estate businesses were chosen to participate as research participants, which may have limited the ability to generalize the results to other small real estate organizations. This study employed quantitative techniques in which data was collected from all 52 real estate investments in Western Kenya. Thus, it is very significant for the mortgage investors, financiers, researchers and the government to comprehend on how asset-based valuation affects financial performance of Kenya's real estate sector investment in Western region.

Empirical studies have been conflicting about the effect of income-based approach to valuation in real estate investment. Almabekova, Kuzmich and Antosik (2018) examined the income method to business appraisal via Russian perception. The study adopted case study research design by focusing on one construction company which was selected using purposive sampling. Data was collected using structured questionnaire. The investigation found that income valuation approach is related to performance. The present research focused on 52 real estate enterprises utilizing both capitalization of earnings and discounted Earnings, while the previous study focused on a construction company of medium size in Russia and the implementation of the cash flow discounting technique using a case study.

Gitari (2011) analysed the appraisal of the up-market Residential buildings in Nairobi City Kenya. This research was conducted in two upscale neighborhoods of Nairobi: Lavington and Riverside Estates. The purpose of this work is to investigate the topic. Both primary and secondary sources were used in this investigation. We used both descriptive and inferential statistics to code and analyze the data we gathered for this purpose. The major preferred approach of appraisal embraced in the appraisal of upper end market residential buildings in Nairobi City is the income based Approach which was significantly related location of the residential houses. The study limited itself to residential building in Lavington and Riverside Estates in Nairobi County making it difficult to generalize the finding in real estate investment in Western Kenya which encompasses of both commercial and residential properties. Further, the study did not indicate how income based valuation approach affected financial performance of real estate investment necessitating this study to be carried out.

From the perspective of commercial property financiers, Payne and Redman (2003) evaluated the assessment methods employed by real estate valuators for income-producing properties. Income growth and property value appreciation standards are hard and fast in every evaluation. The models routinely used by the appraisers are highlighted when they assess these predictions. When embracing valuators, the commercial financiers should be responsive of the growth-associated norms as they meaningfully affect the projected cost of any building. The present research offers a method of estimating the property's sensitivity to the two competing income growth scenarios by use of a perpetual model. However, the investigation did not reveal if the income evaluation technique impacted real estate investment returns.

The impression which exists along the market methodology is that the worth of an industry/business can be analyzed by the position to rationally comparing the guidelines stipulated by the respective firm in which the transaction values are recognized. There is lack of depth exploration of the effect of market-based method to evaluation of real estate investment.In an effort to better incorporate market approach approaches into property valuations, Tajani, Morano, Salvo, and De Ruggiero (2019) aimed to develop the innovative model. An in-depth look at one specific instance was used as the basis for this study's methodology. Two case studies have been conducted, each focusing on a different set of residential properties in Naples, where the model has been used (Southern Italy). Market charge of the treated property and the corresponding costs of the different components are accounted for, from both an empirical and mathematical perspective, by the suggested model, which makes heavy use of the operational logics of goal programming approaches. The results showed that the sophisticated valuation model had better estimate performance than the conventional market approach processes, and that it provided answers that were more consistent with the predicted rational phenomena. Although real-world simulations of real estate investments were not a part of this research, it did concentrate on models based on valuation methodologies from the market. Gaca (2018) conducted research on the impact that pricing as a quantity of market charge has on the real estate industry, as well as management of real estate and evaluation. The research used a comparative research design by concentrating on two distinct collections of undeveloped property that were planned to be used for residential purposes, one of which was meant for single-family use (Set No. 1, Subset A), while the other was intended for commercial use (Set No. 2, Subset A). The information that was analyzed was taken straight from the notarial deeds that were gathered via the state's surveying resources. The study concluded that transaction prices, which are prices that satisfy certain characteristics, are appropriate for estimating the value of real estate. This conclusion was reached while taking into account the appraisal standards that are used in Poland, as well as the European and global appraisal standards that are a direct result of those standards. This was a comparative study that focused on comparing two different kinds of real estate investments, namely residential and commercial usage, and as a result, the results cannot be extended in the context of Western Kenya since the research was carried out in industrialized countries. Further, the dimensions only accounts for singular attributes of the property omitting its respective associations with the degree of the specified prices.

Case studies of Kaptumo, Elburgon, and Sitoi Tea Estate were used for the research that was conducted by Ojijo (2019) about the valuation of wood plantations in Kenya. The method of research used in the study was descriptive. Interviews and questionnaires, using a combination of random and selective sampling methods, were used to obtain data from Valuers, farmers, and visitors to plantations. The market approach was established to be correct because their results in regard to costs were within the range of 1%-15% standard accuracy but they were not reliable because of not capturing the non-timber benefits. In addition, the analysis found that some of the constraints of wood plantation evaluation include the measurement of indirect benefits, the absence of information, the calculation of the interest rate, and the variability of forest assets. In contrast to the research being discussed here, however, the previous study did not disclose how the market value method was obtained.

The financial success of a company is generally accepted as a proxy for measuring the overall performance of the company over a certain amount of time (Ewa & Udoayang, 2012). The financial results that a company achieves are able to provide a good description of an independent measurement of the amount to which a company is able to employ assets from its core method of operation and yet generate profits. The financial returns on real estate investments in Kenya have only been the subject of a small number of studies. Kuria (2019) analyzed the cognitive biases of Kenyan real estate financiers in relation to their success. This study used a descriptive research technique and a positivist outlook on research. Nairobi, in Kenya, was the site of the studies. From a pool of 284 registered real estate agents given by the Estate Agents Registration Board, we made our selection. Data from 426 real estate investors in the Nairobi region was collected using a multistage sampling technique. Information for this research came from a questionnaire. Asset value was shown to affect the profitability of Kenyan real estate, according to the data analysis. However, because all three valuation methods were combined into one, the study was unable to identify which ones were responsible for the observed effects on performance. The goal of this study was to disentangle the results of asset valuation, income analysis, and market-based approaches.

Wataka (2018) investigated how the use of asset finance influenced the economic returns on real estate investments made in Nakuru County, Kenya. The research was conducted using a descriptive survey approach. There were a total of eighty real estate developers included in the sample for the research (real estate investment firms). A census design

was used for the investigation since the population under examination was only somewhat large. The gathering of data was made easier by the use of a structured questionnaire. The study established that asset financing affected financial performance. Even though the study focused on financial performance of the real estate investment, it did not focus on the impact of asset valuation approaches used during asset financing.

Kipkurui (2019) employed a correlation study approach to investigate the link between macroeconomic conditions and the financial performance of Stanlib Fahari real estate venture trust. Research by Kipkurui was published in the Kipkurui journal (2019). Secondary data was collected from the databases of the Nairobi Securities Exchange and the Central Bank of Kenya over the whole 36-month span of 2016-2018. The study ignored asset valuation approaches in favor of a focus on the effects of various macroeconomic conditions on the performance of the Stanlib Fahari real estate venture trust in Kenya. In addition to this, the research was limited to a single company, which makes it impossible to generalize the results.

Nyoro (2017) investigated the elements of financial success of the Kenyan real estate venture trust in a separate research. The researcher chose a method of study that was descriptive. An empirical model was also used as a guide for the investigation. The managers who are employed by real estate investment trusts in Kenya were the primary focus of the recent research; hence, the research was created with these individuals in mind. The study included data from a total of 36 distinct managers as its population for analysis. The study was set up in the same fashion as a census. The instrument that was used in order to help in the ease of data collecting was a structured questionnaire. As was the case in the earlier research, asset valuation approaches were not one of the factors that were found to be significant. As a result, the goal of the present study is to investigate the influence that asset valuation approaches have on the financial performance of real estate investments in Western Kenya in order to fill in the knowledge gap that has been identified.

From the empirical investigations, no known study which has covered asset valuation approaches and financial performance of real estate investments in Western Kenya Region. A study by Makathimo (2019) sought to address the fundamentals in determining the valuation of un registered community land in Kenya. The methods employed in valuation are mainly those applied in convectional property valuations with the specific legal adaptations for subjects addressed by the laws of Kenya. These approaches have

recorded narrow official and practical application in valuation of property and assets in Kenya. Therefore, it is unknown the contribution of asset valuation choice on financial performance. Majority of the studies reviewed while presenting different approaches to valuation have not linked the valuation approaches to real estate investment and have rather been general in their approach to valuation hence the need to conduct this study.

1.2 Statement of the Problem

Suitable asset valuation methods are the only avenue to deal with financial performance and management of properties in the real estate sector. However, since the global financial and economic crisis that rocked the international markets in 2007/2008, there has been little empirical study with varying and sometimes contradicting results on how best to employ valuation methods and techniques in market assessments. In addition, limited information has been produced to describe the effect of asset valuation approaches and financial performance of real estate investments. Even though income approach has been used during valuation of real estate investment, majority of previous studies have indicated it cannot be used alone during valuation since it suffers from subjectivity and it can be manipulated by real estate owners/manager. This has resulted to mixed outcome in regards to its effect on financial performance. Further, some studies have concentrated on cash flows ignoring other approaches associated with income valuation such as capitalization of earnings and discounted earnings. Market approach to valuation in real estate investments has gain the much needed credence, however, empirical studies have continued to report conflicting outcome in regards financial performance. This conflicting outcome have emanated from market regulations, macro-economic factors and context of the study since study from emerging economies have continuously posted insignificant effect on performance.

Inadequate valuation of assets can cause investors and the country significant difficulties in determining sector specific contribution to the GDP; which could range from negative or stagnant cash-flows, to inflation-led shocks in the general economy. With Real Estate value added contribution of 575.1 Bn. in 2017, 625.9 Bn in 2018, 675.3 Bn in 2019 and 530.4 in 2020 to the GDP, it is evident that the sector is progressively developing despite the operational environment challenges. Further, information with regard to financial performance of Kenya's real estate sector indicate a slowed downward trend with 16.2%

in 2016, 15.5% in 2017, 10.1% in 2018 13.2% and in 2019. Low profits, bad planning, insufficient area for development, political instability, and intolerance are some of the additional issues that the business faces. As a result of this, this research project was initiated with the purpose of bridging the information gap by investigating the impact that different asset valuation techniques have on the financial performance of Kenya's real estate assets located in the Western area.

1.3 Objectives of the Study

The main objective of the present study was to examine the effect of asset valuation approaches on financial performance on real estate investments in the Western region, Kenya.

The specific objectives for the study were;
i. To establish contribution of asset-based valuation approach on the financial performance of real estate investments in the Western region, Kenya
ii. To determine effects of the Income Approach to the valuation on the financial performance of real estate investments in the Western region, Kenya
iii. To examine effects of Market Approach to the valuation on the financial performance of real estate investments in the Western region, Kenya

1.4 Hypotheses of the Study

The study assumed the following hypotheses;
i. H_{01}: There is no effect of asset-based valuation approach on the financial performance of real estate investments in the Western region, Kenya
ii. H_{02}: There is no effect of Income Approach to the valuation on the financial performance of real estate investments in the Western region, Kenya
iii. H_{03}:There is no effects of Market Approach to the valuation on the financial performance of real estate investments in the Western region, Kenya

1.5 Scope of the Study

This study set out to determine how different asset valuation techniques affect the financial returns on investments in Western Kenyan real estate. Real estate investment returns in Western Kenya served as the dependent variable, with the asset-based valuation technique, income approach to valuation, and market approach to valuation as the independent variables. The research was conducted for six months in the ten counties that constitute Western Kenya, formerly the Western and Nyanza Provinces, namely Kisumu, Homa Bay, Kisii, Migori, Siaya, Nyamira, Kakamega, Bungoma, Busia and Vihiga. The Secondary data was collected between 2016 and 2020.

1.6 Significance of the Study

The study aims to address the concerns of several main stakeholders, including real estate asset managers, investors, government and regulatory agencies, and scholars and researchers. The real estate asset managers would find the study outcome helpful in informing them about the underlying variables that need to be taken into account when prospecting for real estate in the field. The results would give investors, including financial institutions providing housing such as commercial banks, Saccos, insurance firms and pension funds who have become equity investors in housing projects, a clear understanding of how property prices impact their capital inflow into real estate development in order to meet their higher yield needs. They would help us to make better decisions on investments.

Also, the results can be used by local regulators and other professional bodies as a guide for national policies (e.g. regulations) by the Architectural Association of Kenya on the supply of real estate. It is possible that the national government would find the conclusions of this research valuable for informing subsector rules in order to guarantee that there is fair competition and that rigorous professionalism is observed in this area. The study concludes by recognizing that real estate is an important area for discussion and analysis, and it hopes to aid ongoing research by adding new aspects to the delivery of real estate financing. Therefore, this study's results might pave the way for future studies and add to the corpus of academic knowledge in the subject of finance.

1.7 Conceptual Framework

A conceptual framework is a depiction of the way in which a researcher integrates information from previous studies in order to explain an event or trend. It examines the ways in which one variable is connected to other variables (Kothari, 2014). Following is a conceptual framework that illustrates the connection between the dependent variable (financial performance) and the independent factors (asset based valuation, Income approach valuation and market approach valuation). The intellectual foundation was derived from Twain and then extended and updated (2012).

Twain (2012) identified four main types of valuation and further other three types of valuation approaches. The main types of valuation approaches included income/asset approaches, Income Based Approach, Market Based Approach and Asset Based Approach. Other types of valuation approaches were excess earnings/reasonable rate method, Application of Methods for Valuing Intangible Assets and sanity checks and Pass-Through Entity Valuation. The study modified the model to include income/asset approaches to income-based valuation as well as sanity checks valuation to asset-based approach specifically, justification for purchase. The link between the variables that are reliant on the one that is doing the describing and the one that is doing the doing is outlined in the conceptual framework. The asset-based valuation technique, the income approach to valuation, and the market approach to valuation all stand in for the independent variables in this context. Financial success, measured by ROI and ROA, served as the dependent variable in this analysis. All of the features of the independent variables were analyzed in terms of how they affected the profitability of the property investment.

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┌─────────────────────────────────┐
│ Asset Based Approach            │
│   • Book Value Method           │─────────┐
│   • Adjusted Net Asset Method   │         │
└─────────────────────────────────┘         │
                                             │    ┌──────────────────────────────────┐
┌─────────────────────────────────┐         │    │ Financial Performance of Real    │
│ Market Based Approach           │         ├───▶│ Estate Investment                │
│   • Comparable        company   │─────────┤    │   • Return on Investments        │
│     transaction data            │         │    │   • Return on Assets             │
│   • Prior Sales of interest in  │         │    └──────────────────────────────────┘
│     Subject Company             │         │
└─────────────────────────────────┘         │
                                             │
┌─────────────────────────────────┐         │
│ Income Based Approach           │         │
│   • Capitalization of Earnings  │─────────┘
│   • Discounted Earnings         │
│                                 │
│                                 │
└─────────────────────────────────┘
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Independent variables   **Dependent variable**

Figure 1.1: Conceptual Framework

Source:Adapted and Modifed fromTwain (2012).

CHAPTER TWO: LITERATURE REVIEW

The purpose of this chapter is to help researchers locate unfilled areas of inquiry by reviewing the relevant theoretical and empirical literature on the most important study variables. Methods for valuing assets and their effects on financial performance are analyzed.

2.1 TheoreticalLiteratureReview

This section is devoted to a discussion of the many approaches to the idea of asset valuation. The study was anchored on three theories; Market Efficient Theory, Real estate simulation theory and Q theory of investments.

2.1.1 Market Efficient Theory

The use of market data into the pricing of financial products may be dated back to the nineteenth century. Several researchers and academics have been blamed for the propagation of practices about the worth of assets and the use of information. Two competing schools of thought evolved in the financial industry more than a century ago (Bodie, 2005): on the one hand, there are specialists in the field who hold that such data has no bearing on the pricing of securities. This school of thought undertake that investing prices assume a random walk or a drunkard style of walk in which each case would be hard to project return on investment from the asset invested. There exists a consensus in terms of opinion offered on the random walk preposition (Roberts, 1959; Kendall, 1953). This denotes that no individual using the available information can be able to assess prices of a particular asset thus making the availed information in the market to be absolutely irrelevant. This differs to the decision theory which proposes that the relevant and trustworthy data is necessary in making suitable decisions. Nevertheless, in the process this is not the case then a market bias exist thereby inconsistencies grounded on this particular school of thought.

On the same breadth, we have market efficiency theorists who are positivist with regard to information and they view this as very significant in evaluation and projection of prices of assets. The Efficiency Market Hypothesis by Fama(1965) provides with a view that it is not possible to depend upon historical data in making superior margins in the market where the investment takes place. Grounded on the EMH, it is then easy to generate

enhanced returns from adopting historical data publicly contained and also the one with insider information.

According to the tenets of EMH, people who make judgments using both publicly available and private sources of information about the market's past should be able to outperform their less informed counterparts in terms of investment returns when there is no market bias. The value of real estate investments in the Kenyan market might go up or down depending on the manifestation of market biases. Therefore, this theory is essential in explaining how real estate investment firms use market based approach to valuation to enhance their financial performance.

2.1.2 The Q Theory of Investment

The pioneer of this theory is James Tobin(1969) who coined the idea of "A General Equilibrium Approach to Monetary Theory." This means that the amount of assets should linked to Q, where it denotes to the price of capital before the asset in relation to its replacement cost. The overall ratio of the market worth of the installed or utilized capital in comparison to the cost of its replacement is the definition of this theory. A home's market price is determined by the selling price of the property as a whole, which is part of the asset market, while the cost of replacing that home is determined by the corresponding construction sector, which is also a component of the asset market. This implies that by the period the developer in perspective engage in construction industry, already they have measured the market cost of that particular house and its replacement price.

The construction price of a specific house requires to be lesser compared to the market value of that house for the project to be said that is viable for investment. This theory stipulates that the degree of investment must be connected to the total ratio which concerns to the marginal replacement price and marginal value of the capital invested. The theory further argues that the investment in a particular asset is a function of the Q ratio and the total ratio of the market valuation of the investment compared to its replacement cost(Jud & Winkler, 2003). In this study, the Q theory was instrumental in determining how real estate investment firms use asset based approach to valuation to enhance financial performance.

2.1.3 Real Estate Simulation Theory

This particular theory was developed Wie(1996) and it describes the extent in which financial markets expedite the endowment of finances to houses across the globe. Investing in housing is a huge possession therefore it requires a long-term funding and matters arising connected with a well-functioning schemes in terms of financing are the ones whichprovide with long-term funding of houses. This theory also denotes that countries which contain strong and favorable laws and regulations for providing of finances and deep credit information systems, investors and strong macroeconomic environment contain strong housing finance system. This notion was adopted by the Clements(2008) in attempt to offering explanation with regard to disparities which exist in housing finance across the globe. This analysis specifically focused on emerging economies where information for the investigation was collected in Australia. Berry and Hall(2005) study also apply to the current study where they determined the components of public policy that are specifically critical in providing low-rented housing in the developed economies which incline towards low macroeconomic uncertainty and moderately far-reaching credit information systems, variation in the forte of legal rights assist to offer explanation with regard to the magnitude of housing funds.

In any coherent model, the advancement evaluation is only a quantification of processes. It undertakes input variables and put them to generate an answer. The contributions should be the foundation for the period and the effort consumed comprehending the decisions (Keeney, 2002). Development evaluations are very sensitive to the accuracy of the respective input. A small variation in any the input variables which are time, interest rate, rent, cost and yield which can suspiciously influence the resulting figure(profit or value), interpreting the method exposed to, at greatest delusion and, at worst, cautious manipulation. The presence of informational gaps impedes the development of direct models that might elucidate the relationships in the real estate market (Berry & Hall, 2005). The real estate market is not a flawless system in which the processes and affiliations may be projected with a certain degree of perspective and human components, both of which contribute to the random character of associations in the system. This sort of system is insufficient due to the difficulty in accessing data, which is a difficulty that property evaluators experience on a daily basis in normal practice.

The real estate market is notoriously unpredictable, which makes it difficult to develop comprehensive analytical models that can accurately predict how the market will behave. The use of simulation modeling as a technique may provide assistance to persons who have been charged with the decision making process in evaluating circumstances that are fraught with uncertainty. It consists of a tool that can generate market processes in a setting that is controlled for experimentation. It does this by categorizing the anomalies that are brought about by the random factors, and it also takes care of the generation of supplemental information about the real estate environment. With an eye on mortgage aspects like the cost of taking out a mortgage as a limit in finance for both the interested parties and the developer, this related theory was financially useful in establishing the obstacles that impact real estate successes. This theory was also used to provide insight into the unique impacts of direct and indirect backings, such as interest deductibility-factors, which have a substantial influence on the actual pricing and overall performance of housing projects. This theory was instrumental in guiding the study on how real estate developers deal with uncertainties when determining the value of real estate investments.

2.2 Concept of Asset Valuation Approaches

This section presents a review of key concepts that underpinned this study. Specifically, the study presented the concept of Asset-based valuation approach, income based approach and market based approach of real estate investments.

2.2.1 Asset-based valuation approach of real estate investments

This technique is universally accepted as a means of evaluating the worth of a firm, an ownership stake in a corporation, or a security by using many methods that all revolve around the value of the investments remaining after obligations have been paid. An asset-based approach, as defined by Haková, Machová, Hejda, and Brabenec (2020), involves determining whether or not a company's present commitments are more than the value of the company's assets (both registered and unrecorded, physical and intangible). According to Revenue Ruling 59-60, the value of investments, especially stock, is exactly proportionate to the value of the tightly contained assets of a real estate property business, regardless of whether or not the corporation is controlled by a family (Garven, McLean & Pattoni, 2016).

The valuer of such a company should place more weight on the fair market value of the firm's interests in real estate or other tightly held assets than would otherwise be the case, whether or not family possessed, than any of the additional regular indices of evaluation for example the incomes and the ability of paying of dividends (Brandolini, Magri & Smeeding, 2010). Even though the quoted statement above can be applicable to property firms, the asset-based methods can as well be effective in the setting of a firm which perform poorly financially. The significant contemplation is when expending an asset method is grounded of value in both cases for the firm and individual investment (Pinto, 2020).

The two primary approaches that make up the asset-based evaluation technique are the attuned net investment and the net assets approaches. The equity of the shareholders is determined by deducting the book value of the assets from the book value of the liabilities. The notion of financial accounting serves as the backbone upon which the net investments method is built. Even while most market professionals agree with the concept, there are a few who believe the method is seriously flawed. In accordance with the Generally Accepted Accounting Principles (GAAP), a great number of investments are recorded using their past costs minus, where applicable, cumulative depreciation or collective deficits (Wirtz & Ehret, 2019). These methods were never envisioned by accounting profession to mirror the present value of investment. Likewise, the long-term liabilities for example payable and bonds are documented using the current value of that particular liability expending the rates in which the liability was realized. In GAAP, these particular amounts are not fixed to mirror the market shift. Lastly, GAAP does not allow the credit of several and regularly valued investments for instance the internally advanced trademarks, goodwill, logos, trade names and patents. As a result, the GAAP-compliant balance statements make no effort to either include or accurately evaluate the value of the multiple investments that are included (Izuhara, 2016). Hence, by description, the owners' equity will not ordinarily produce an effective quantity of the worth of the firm. In spite of these important curbs, this method can regularly be found in buying and selling agreements.

When valuing a company, one method that is used is called the adjusted net investments approach. This approach calculates a company's worth by subtracting its obligations from the market value of its assets. This technique makes use of the liquidation or replacement

value of a company's investments less its commitments, but this is conditional on a resolution or setting that is essential to the assessment. Experts frequently alter the book value of assets to reflect their real market worth, which is either liquidation or replacement value. Then, the expert subtracts the fair market value of all declared and unreported liabilities from the total fixed value of the assets. When calculating the total value of fixed net investments, both assets that can be touched and investments that are easily recognized are taken into consideration. If the expert will rely on the other qualified valuators of particular tangible assets, then the expert has to be alert and knowledgeable of the specific standards of value that are commonly employed for valuation. This strategy may be used to produce an overall picture of the aggregate total worth of the trade or the constituents of the firm. An efficient method for determining the value of a non-operating trade or company such as property or asset firms is the Adjusted Net Assets Process.

This technique is also applicable for estimating the worth of a corporation or business that is predicted to continue losing money or to go bankrupt in the near future. During a company's bankruptcy proceedings, the Adjusted Net Assets approach is often used to determine a "floor value" for the company's total value. When determining the fair market value of a regulatory interest in a continuing concern, the regulatory owner must provide an explanation for why they would accept less than the business's expected investment value. Assuming a value lower than the value of the fixed net investments but greater than the value of the assets if they were liquidated might occur if the investments are underperforming. Before the transaction is finalized, this approach has acknowledged the floor value on which should be regarded by the valuator on the likelihood of overestimating the value of investments due to the existence of non-operating assets and other extra faults in the expert decision. This approach has the disadvantage of concealing any profits that may have been made through daily business activities in the specific company. Thus, it is not suitable to employ this approach to charge intangible investments for example the copyrights and patents which are normally treasured on grounds of some kind of the operating earnings for example royalties. Nonetheless, additional cost methodology can be applied in assessing standards of specific intangibles for instance the patents.

2.2.2 Income approach to the valuation of real estate investments

The phrase "universal technique" refers to a strategy that can be used to any investment, whether it be a securities, a stake in a company, or an intangible asset, by combining two or more approaches that convert future monetary advantages into a single sum (Oh & Park, 2022). In periods the trustworthy market information is difficult to get, the expert connected to valuation exercise may resort to adopt this type of an approach (Baum et al., 2013).It does this by converting the anticipated future monetary advantages, which are often the cash flow, into the present value that exists within the context of the corporate environment. Because this method bases value on the trade's or business's potential to provide immediate monetary advantages, it is often of the utmost importance for businesses or companies that are already well-established and lucrative.

The Capitalization of Earnings Technique encompass the income-oriented method. This technique is usually applied to assess an enterprise or business grounded on the upcoming appraised benefits generally by the use of some amount of rates or the cash streams to be produced by the firm. The projected upcoming monetary benefits are at that point exploited by using suitable rate of capitalization (Almabekova et al., 2018). This approach undertakes sum total of the investments including intangible and tangible which are the faint quantities of the trade/business by not attempting to detach their present values. In same vein, the pivotal element to the worth of that particular business is the capacity to produce superior results in terms of earnings or flow of cash. The maximization of remunerations process benefits from the projected monetary benefits using a suitable proportion of yield. The professional in perspective deliberate the alterations for such objects as voluntary expenses for instance the above or below the market owner's recompense) nonrecurring returns and expenditures, infrequent issues of tax or the accounting procedures and modifications in the capital structure (Park et al., 2012).

This type of an approach is suitable for firms which contain stability in their rates and cash flow from the investments developed. It is paramount that any revenue or expenditure items made from both sides of liabilities and non-operational investments be detached from the projected monetary benefits preceding the application of this approach (Ishan & Noordin, 2015).The total worth of the transaction is increased by the fair market

value of the non-operating investments and commitments, which is the consequence of maximizing profits. This method works well in theory when valuing a prosperous business for which the investor is intent on receiving a satisfactory rate of return in exchange for his or her capital, and where the expected level of future financial benefits and incomes is sufficient or is expected to increase gradually (Kucharska-Stasiak, 2019).

The discounted cash flow(DCF) approach is also accounted under the income method of asset valuation. This type of an approach permits a number of conceivable descriptions of earnings. It is not limited to only descriptions of earnings to cash flows (French & Gabrielli, 2018) This type of method is grounded on a theory of the sum total worth of an enterprise, a trade or business, is the current worth of its expected upcoming earnings fovourable to the current worth of terminal worth(Park et al., 2012). The use of this method necessitates the formulation of a terminal-worth concept. Instead of employing the capitalization structure, an appropriate discounted rate is used in order to bring the total projected profits and terminal worth down to their present value. This brings the total down to the current value.

Moreover, to the elements measured in the maximization of revenues approach, the professional offer explanations for the expected cash flows over the distinct period of time for instance three to five years and a terminal worth at the closing discrete period (Oh & Park, 2022). All the upcoming cash flows which include the terminal worth are discounted to the current worth by the use of discounting rates as an alternative of capitalization rates. The Discounted Earnings Method, commonly known as the Discounted Cash Flow Method, is an accounting technique that suggests cash flow explanations (such as discretionary cash flow, after-tax cash flow, or operational cash flow) should be the sole kind of income valued. When applied to cash flows, the Discounted Earnings Method is also known as the Discounted Cash Flow Method (Ishan & Noordin, 2015). This method provides a more all-encompassing explanation of the types of revenues that have to be accepted. As is the case with the market technique, the income strategy may generate either a control-level or minority-level value depending on whether or not the discretionary changes are made to the forthcoming monetary rewards.

2.2.3 Market approach to the valuation of real estate investments

Market method provides an explanation with regard that the worth of an enterprise, trade or a business can be assessed by referring to rationally analogues procedures and guidelines for an organization or a firm in which the business transactions are well-known (Hamilton, 2011). The worthiness of the business may be known due to these enterprises trade publicly or they were presently sold out where the terms of engagements were revealed. This kind of strategy is often used in situations particularly when the end user of the expert's account does not have specialist business evaluation expertise. Obvious parallel exists for lay people to accessing with the respective real estate proxy preceding to the listing of your house for selling to investigate the quoted amounts of the same houses/homes sold in the same environment. This encompass the commonly embraced approach by the valuators of real estate (Meitner, 2006). Valuators of real estate normally contain, in their list, several of hundreds of comps to select from. In this particular scenario, a good collection of comps could consist of as little as two or three companies, and in certain instances, there might not be any similar data available for the firm. Investigating these aspects primarily serves the purpose of determining whether or not businesses that are comparable have the same risk profile. There are three different subject-based paths that comparable company transaction information may take. These include the transactions involving private companies, those involving the subject firm in the past, as well as the transactions involving public companies.

This type of an approach grounds itself on the worth of the business matter on the sales which are comparable trades or business interests. It is particularly significant when prizing public firms or big private firms which have been contemplated going public due to information with regard to comparable public businesses is already in the public domain. In the same breadth, this approach enables the skilled individual to find out the current, arm's length   trades by involving the same public or private companies and then advances the valuing multiples. Various approaches are availed which include the Guideline public company approach- It ponders the price in the market of the comparable public firm stocks (French & Gabrielli, 2018). Appraising multiple is generated by allotting the equivalent price of stock by the individual economic variable for instance is the net income or operational cash flow. The Merger and acquisition (M&A) approach also contain another technique where the specialist compute the pricing multiples

grounded on the real-practical trades comprising the entire comparable corporations or functioning components that have been traded. This type of valuing multiples is then embraced connecting to the formulated subject of the firms' monetary variables(for instance, is the functional cash flow and net income of the company)

On this method, the degree of worthiness that is obtained rely on whether the formulated subject of the firm's monetary variables have been attuned to meet the discretionary items for example the money spent to the connected parties (Tajani et al., 2019). If the specialist brand the discretionary modifications available to solely control of shareholders, it might prevent the submission of premium controls. If not, the primary cost can comprise an implied DLOC. Offer capital in the numerator must be compensated with the anticipated money in the denominator, thus it is vital to create a link between the appropriate price and the right signal. In a capitalist economy, where dividends are paid to stockholders before interest and taxes are paid to bondholders, the price/earnings before interest and taxes (P/EBIT) ratio may be thought of as a measure of the value of invested capital (MVIC). Considering just market value of equity (MVEq) in the calculation of price/net income is appropriate since net income is calculated after interest payments to debt holders and therefore represents the whole amount that may be distributed to shareholders (Bernstrom, 2014). Any denominators that omit interest rate (EBIT or EBITDA) must frequently remain with the corresponding numerator (MVIC).

In certain instances, the Dividend Paying Capacity Method will also include an income-associated method, but will be analyzed as a market approach due to its foundation in market data. It is associated with the so-called "capitalization of profits" method (Lim et al., 2015). Differences between this and the capitalization of earnings approach come down to which types of profits are included in computations and which rate of capitalization is employed. This method bases its judgments on the dividends that will soon be distributed, or on the company's capacity to provide dividends. Then, it optimizes the incentives by factoring in the average yearly dividend payments of five similar companies over a five-year period (Makarim & Noveria, 2014).

2.2.4 Concept of Financial Performance

Financial performance is embraced as universal pointer to the general financial performance of a firm or corporation in a given period, according to Ewa and Udoayang (2012). It can be used to link various firms in the same sector of operation or compare different classes of sectors in an economy. A particular measure on how well the company can employ its respective investments and assets from its basic mode of the business and be viable in terms of revenue generation is defined in financial results. It is a metric used to assess a company's financial health over a certain time frame. As a result, it may be aggregated for use in comparing businesses within the same market segment. The calculation of return on investment, level of profitability, and return on assets include financial performance (Gatuhu, 2013).

Several studies have shown that the cost-to-income ratio, operating costs, and the ratio of equity to total assets affect the output of the financial sector (Ivey, Gropper, & Rutherford, 2005; Shipho & Olweny, 2011; Said & Tumin, 2011; Oladele & Sulaimon, 2012). Profitability is also a significant measure of economic success frequently used by both investors and academics. Some of the current studies that have used profitability as a measure of financial performance include the profitability level used by Muiru, Oluoch and Ajang (2018) to measure financial performance among microfinance institutions. Oigo (2015) used financial indices such as profitability, stock price, resource-consumption balance, and asset value to assess bank financial efficiency, based on the ideas of bank financial experts.

The types of financial performance data nominally pursued by market analysts in the real estate sector and illustrated in annual reports include Return on Equity, Return on Invested Capital, Debt to Equity ratio, Price to Earnings ratio of stocks that are derivatives of the CAMEL model. Sophisticated segments such as the real estate market; however, recognize that there are several other areas of profitability impacting business performance that must also be evaluated and controlled. Statistics that summarize properties owned or leased, work order completion rates, room allocation/chargeback data, employee turnover rates or other aspects of these operations must also be evaluated and enhanced in the realm of real estate, infrastructure, and facility management, with each department identifying its own set of metrics that assess the success or lack thereof

and ultimate.Interest rates, another aspect with a major impact on the real estate markets' financial success, is worth mentioning. (Obondy, 2015; Nguyen, 2019), prices (Kitti, 2012; Kibunyi, 2015) and funding options such as mortgage financing (Mbula, 2013; Mungai, 2016) and loans to fund private properties (Wataka, 2018). Government policies and legislation can improve or impede real demand, including tax incentives, deductions, and subsidies (Singh, 2015). All of these demonstrate that many factors influence real estate values, affordability, investment opportunities and financial results.

2.3 Empirical Literature Review

Many researchers have researched to ascertain the effect asset valuation approaches on financial performance of real estate investments. This section presents a review of previous studies and their methodology and findings as per the specific objectives so as to isolate knowledge gaps.

2.3.1 Asset-Based Valuation Approach on the Financial Performance

Schulz (2013) examined asset based valuation of Germany real estate markets. The study investigated real estate returns in Germany and compares them with and U.S. and U.K. data in the same period. The econometric research makes use of a wealth of information on the Berlin property market. Here, the Hedonic House Price Index is used as a stand-in for real estate prices while the stock market provides a stand-in for economic success from 2005 to 2017. The study established that asset based valuation has insignificant effect Germany real estate markets as compared to U.S. and U.K real estate market. There was significant difference in regards to application of asset based valuation methods in Germany, U.S. and U.K real estate market. The investigation established that the asset-based method in Germany contained some demerits such that it was hard to determine the costs of replacement for the constructed houses due to the associated costs of construction for the new built houses have to be attuned for purpose of deprecation. Since the study was conducted with REITs and not with real estate markets as a whole, it is difficult to generalize the findings to the current environment. In addition to stock prices, ROA and ROI were used as measures of financial success in the present study.

Conradie and Lamprecht (2021) looked at the appraisal procedures and financial results of real estate firms in the Republic of South Africa. In terms of technique, eleven semi-

structured interviews were conducted with top-level executives at three of South Africa's largest real estate firms, and the resulting qualitative data was subjected to a thematic analysis. Since the asset-based strategy had an impact on financial results, it was determined to be the best valuation technique overall. In light of this, it was decided that this was the best method for valuing the company. It was also found that the value of the real estate investment is changed by varying percentages to determine the amount of financing supplied. The conclusions produced throughout the study, however, might have been impacted by the interpretation bias of the authors owing to the qualitative character of the research. This was the case because the interpretive bias could have influenced the results of the research. There was also a limitation to the study since just three real estate firms were included in the analysis. This may have prevented any conclusions from being generalized to other small real estate companies. This study employed quantitative techniques in which data was collected from all 52 real estate investments in Western Kenya.

Ionescu, Toma and Founanou (2018) assessed the effect that asset appraisal may contain on the fiscal position and the financial performance of firms and the employed inquiry of asset appraisal choices. A case study was adopted on the impact of methods of depreciation ofimmobilized assets on the operating result in 240Romanian enterprises. The study relied on secondary collected between 2013 and 2017. The analysis of the findings obtained both in the theoretical and practical inquiry validates the chief assumption that asset appraisal choices contain various effects on financial conditions and financial performance of the organization. The study adopted case study approach meaning some of the firms were not sampled besides been carried out in Romania. Further, asset based valuation approaches was hinged on depreciation without considering other asset based approaches such as book value method and adjusted net asset method.

Ankobiah (2001) conducted research on the influence that an evaluation of port investments may have on the operational costs that contribute to the financial performance of ports, which ultimately have a consequence for the economy of the country. This was dependent on whether the primary source of the cash flow came from sources located outside or sources located inside the country itself. The administrative and financial ledgers of Tema and Takoradi, which are both ports in Ghana, served as the primary sources for the information that was gathered. This data was improved by

comparing compiled data from several sources for particular ports located in Europe and key cargo handling equipment Manufactures-Kalmar. Based on the findings of the empirical research, it was determined that asset appraisal can result in effective management and deployment of existing assets, which can increase availability or cash flow for daily operations of the port, cash reserves for replacement of outdated equipment, and also foster foreign exchange earnings, all of which will contribute to an improvement in BOP and GNP in the economy. The previous research concentrated on one sort of real estate investment, port investment, but the present study focused on commercial, residential, as well as mixed use real estate investments.

Research conducted by Mbogo (2016) aimed to investigate the impact various real estate valuation methods have on the bottom lines of Kenyan investment firms. This study used a descriptive research approach to examine a sample of investors from 50 formal investing clubs in Nairobi. The research relied on primary data, acquired via questionnaires sent to Nairobi-based investment organizations. Both the buy-and-hold and the own-and-operate strategies had a significant impact on financial success, and asset-based valuation methods were positively correlated with performance. However, the present research focuses on real estate investment businesses and measures financial success via return on assets and returns on investments, while the prior study examined financial performance of investment groups through profits before interest and taxes and quantity of capital.

2.3.2 Income-Based Valuation Approach on the Financial Performance

Gitari(2011) analysed the appraisal of the up-market Residential buildings in Nairobi City Kenya. This research was carried out in two affluent neighborhoods in Nairobi called Lavington and Riverside Estates. Construction homes in certain affluent areas were the focus of the study. This work represents an analytical investigation. Both primary and secondary sources were used in this investigation. Both descriptive and inferential statistics were used in a systematic coding and analysis of the data obtained for this purpose. The empirical investigation established that the important components that define that worth of residential buildings in the same locality was the stipulated market rent and the size of the plot. The major preferred approach of appraisal embraced in the appraisal of upper end market residential buildings in Nairobi City is the income based Approach which was significant related location of the residential houses. The study

limited itself to residential building in Lavington and Riverside Estates in Nairobi County making it difficult to generalize the finding in real estate investment in Western Kenya which encompasses of both commercial and residential properties. Further, the study did not indicate how income based valuation approach affected financial performance of real estate investment necessitating this study to be carried out.

Ilsjan and Kask, (2005) investigated a number of actual issues with the use of the income technique in the evaluation process for the purposes of financial recording in Estonia. The list of all general appraisers in Estonia who were in possession of an appraiser certification that was still active in 2004 is included in the survey sample. This is a comprehensive survey with both open-ended and closed-end questions. Based on the results, it seems that the accounting-related assessment may be applied to the major cities in Estonia. Overconfident in their own abilities and showing more than normal pride in their work, valuers' actions were not supported by the data. As seen by the results, valuers exhibit an attitude of overconfidence on the success of their projects. However, one of the primary reasons for this is that some of the speculative laws in terms of standards are too general and need some definition in order to result in consistency among appraisers on their conduct in practice. This is one of the reasons why this is the case. This gap was addressed by the present research, which did not concentrate on the behavioral aspects of valuers or appraisers throughout the valuation process, but rather on how income-based valuation methodologies influenced financial performance.

Triono (2020) aimed to afford information with regard to the market rate of Standard Charter Towers in Jakarta. The study adopted correlation research design. Information is gathered from a variety of literary studies, including yearly reports, publications from research institutes, and others. The investigation adopted the income method where discounted cash flow(DCF) was embraced in the appraisal exercise. DCF was employed due to its effectiveness for appraising investments with income method. The material that was analyzed was obtained via a literature study that included yearly reports, reports from research institutes, and other relevant sources of data that were readily accessible. According to the findings of the research, one may draw the conclusion that the primary reason assets are valued is for the goal of selling them. The investigation used a case study research design; hence its findings cannot be generalized to the present study.

From the perspective of commercial property financiers, Payne and Redman (2003) analyzed the numerous approaches real estate evaluators use when estimating the value of income-generating real estate. Payne and Redman (2003) made their assessment from this perspective. The rules that are created with reference to the increase in income and the appreciation in property value are always included in any evaluation. These anticipations are evaluated with an emphasis on the models that the evaluators utilize on a consistent basis. When embracing valuators, the commercial financiers should be responsive of the growth-associated norms as they meaningfully affect the projected cost of any building. The present analysis offers a method of using a perpetuity model for the purpose of estimating the sensitivity of the property's value to the competing income growth scenarios. However, the investigation did not reveal whether or not the income evaluation technique had an effect on the financial success of real estate investment.

Almabekova, Kuzmich and Antosik (2018) examined the income method to business appraisal via Russian perception. The study adopted case study research design by focusing on one construction company which was selected using purposive sampling. A standardized questionnaire was used throughout the data collection process. The investigation came to the conclusion that the prime of income method is the most accurate way to evaluate the costs associated with running a business. This conclusion is supported by the observation that this method is the only one to take into account the dynamic aspects of the development of the business, which enables a comparison of the current investor-related costs with the anticipated future returns while also taking into account the length of time that the revenue has been received and the risk factors that are specific to the trade or business under investigation. Despite this, the research demonstrated the income approach's dependability in valuing businesses in the midst of Russia's economic crisis. Further, a case study of a mid-sized construction firm was utilized to illustrate how to put the cash flow discounting technique into practice. However, 52 real estate enterprises were the focus of the present research, which used both capitalization and discounted profits in its analysis.

2.3.3 Market Based Valuation Approach on the Financial Performance

The goal of Tajani, Morano, Salvo, and De Ruggiero's (2019) work was to create a better, more inventive model that could be employed in market approach approaches for

property appraisals. Case studies were used as the method of analysis for this research. Two case studies dealing with illustrative examples of residential real estate in Naples, Italy, have been used to test the validity of the concept (Southern Italy). The proposed model substantially borrows on the working logics of goal programming techniques to find a way to reduce the market charge of the treated property and the related costs of the different features. This is due to the fact that, from both an empirical and mathematical standpoint, the operating logics of goal programming approaches are more suitable. The findings characterized the superior estimation performance of the sophisticated valuation model, which was able to go beyond the conventional market approach's application parameters and provide results that are very reliable with the anticipated rational occurrences. The market-based valuation methodologies and models were the primary focus of this research; actual real estate investment situations were not simulated.

Mai (2014) examined market method to cost also called the sales evaluation method. The study adopted comparative research design. Data was collected using qualitative techniques specifically interview schedules administered to valuers and appraiser of two real estate firms. The market methodology examines the cost which is asset related on the selling price ofthe comparable investments in safeguarding with the monetary codes of exchange. The basic approach appraised entail the residual cost technique which assigns the attainment of price of an enterprise to various components. The two supplementary methods measured are cost extraction approach that links sales similar in practical terms with the concession of gathered labor force in place and direct sale of the gathered labor force by itself. This was a comparative study, focusing on comparing two types of market-based valuation approaches and therefore, the study did not show how market valuation affected financial performance of real estate investment. Further, the results of the study was based on qualitative techniques while the current study focused on quantitative techniques which allowed testing of null hypotheses.

Davis, McCluskey, Grissom and McCord (2012) sought to determine the prospective for the basic market charge and the non-market rate grounded methods to be exploited for the residential buildings tax purposes. The investigation encompassed the analysis of information of both sales of property and the property quality statistics extracted from the UK District Council area. A number of simplified approaches were adopted to generate various tax base situations and outflowing tariff occurrence was linked with the one in the

complex industry standard market charge method. According to the findings of the research, the simplified technique of generating a property tax base is capable of executing extensively in a manner that is comparable to the more composite systems that are now being achieved in the advanced markets; as a consequence, an indicator of equifinality exists. This method is distinct from that used in earlier research in that it is implemented at the level of the actual tax bill. This makes it possible to compare value-based, non-value-based, and banded methods, whereas the earlier work focused on the ways in which market-based methods impacted the financial performance of real estate investment companies. In addition, the scope of the study was limited to structures that served exclusively residential functions, while the focus of the present investigation would be on determining the extent to which financial gains were realized through investments in Kenyan real estate. The previous research focused mostly on problems that arise with regard to the payment of property taxes.

Ojijo (2019) conducted research on the valuation of wood plantations in Kenya using a case study methodology. The research focused on the Kaptumo, Elburgon, and Sitoi Tea Estates. The research design used in this study was descriptive. Interviews and questionnaires, using a combination of random and purposeful sampling techniques, were used to obtain the necessary information from plantation visitors, farmers, and valuers. The market approach were established to be correct because their results in regard to costs were within the range of 1%-15% standard accuracy but they were not reliable because of not capturing the non-timber benefits. The analysis also revealed that the constraints of wood plantation evaluation include the calculation of the interest rate and the heterogeneity of timber assets, as well as the measurement of indirect benefits. However, unlike the present research, it did not detail the steps used to arrive at the market value method.

Gaca (2018) conducted research on the impact that pricing as a quantity of market charge has on the real estate industry, as well as management of real estate and evaluation. The research used a comparative research design by concentrating on two distinct collections of undeveloped property that were planned to be used for residential purposes, one of which was meant for single-family use (Set No. 1, Subset A), while the other was intended for commercial use (Set No. 2, Subset A). The information that was analyzed was taken straight from the notarial deeds that were gathered via the state's surveying resources. According to the findings of the investigation, the cost of real estate can be

evaluated on the basis of prices that meet conditions, which are referred to as transaction prices. This conclusion was reached while taking into account the appraisal standards that are used in Poland, as well as the European and global appraisal standards that are a direct result of those standards. This was a comparative study that focused on comparing two different kinds of real estate investments, namely residential and commercial usage, and as a result, the results cannot be extended in the context of Western Kenya since the research was carried out in industrialized countries. Further, the dimensions only accounts for singular attributes of the property omitting its respective associations with the degree of the specified prices.

CHAPTERTHREE: RESEARCHMETHODOLOGY

This chapter provide a description of approaches which was embraced to conduct the research. Therefore, the design to be used is explained here then followed by the site of the study and the population to be covered. This section also includes a discussion of the study's methodology, including a breakdown of the research's data collection and analysis techniques and presentation of its findings. According to Cooper and Schindler (2006), an inquiry comprises doing a logical study of the phenomena in question with the goal of coming up with answers that may be used in decision-making. According to them, an investigation is necessary in order to collect specialized and in-depth data since it goes beyond common knowledge. In light of this, it should come as no surprise that investigations adhere to a predetermined protocol, the components of which include strategies and procedures pertaining to the population under investigation, the collection of data, and various sample formats, amongst other ways (Mugenda & Mugenda, 2003). Research techniques is therefore the means in which data is gathered in a research (Kothari, 2004).

3.1 ResearchDesign

In order to achieve the goals that were established for this study, the current research used correlational research designs. The employment of correlational statistical tests is an integral part of the correlation design. These tests are used to determine the degree to which the variables that are the subject of the inquiry are related to one another (Leedy & Ormrod 2010). According to Mugenda and Mugenda (2008), the primary focus of the

correlational study design is on analyzing the correlations that exist between the variables. As a result, it is predicated on the notion that if a statistically significant association exists between two variables, then it is feasible to forecast one variable using the information that is available on another variable. This is the foundation around which it is built. The research was able to discover the associations between the independent factors and how they impacted the dependent variable thanks to the use of correlational analysis.

3.2 StudyArea

The investigation was surveyed in Western parts of Kenya where it specifically targeted real estate firms in the region. The region comprises of ten counties of Siaya, Busia, Nyamira, Vihiga, Bungoma, Migori, Kisumu, Homa Bay, Kakamega, and Kisii. The region lies between latitude 330 East and 350 East and 20 North and 30 South. Agriculture is the most common kind of economic activity and the principal employment of people who live in this area, which is situated on average at a height of 1800 meters above sea level. The Kenya Housing Survey (2009) estimates that the overall population of the area is 9,776,913 people. There has been a surge in economic activity in the western area of Kenya, and as a result, there has been a rise in real estate investments, especially in the county capitals. This is also evident by increase in number of real estate companies and agents (Cytonn, 2018). However, according to Cytonn Real estate investment outlook 2020, the region performs marginally low as compared to coast, Nairobi, Mount Kenya and Central Rift Region. The region has about 52 real estate companies and agencies.

3.3 TargetPopulation

According to Cooper and Schindler (2006), the term "population" refers to the collection of factors from which conclusions are drawn. The owners and managers of the 52 real estate investment enterprises in Western Kenya that were registered as part of the population were chosen. As a result, this study target respondent in management level as they are aware of aware of asset valuation approaches and financial performance. According to Muli (2020), this may be linked to the fact that managers have a greater

expertise on matters pertaining to valuation techniques when compared to other cadres. The distribution of real estate companies and agents is as follows; Kakamega County (5), Bungoma County (3), Kisumu County (28), Busia County (2), Kisii County (11) and Homa Bay County (3).

3.4 SamplingSizeandSampling Techniques

A sample size, as defined by Mugenda and Mugenda (2011), is a set of observations gathered from the main population using techniques that are explicitly explained. An inference is drawn about the aggregate as a whole based on the selection of some portion of the overall aggregate as the foundation for making the conclusion (Kothari, 2014). The present research used a census methodology due to the small number of the population that was used. In this method, all of the units (52 real estate businesses) were investigated. This confers with Mugenda and Mugenda (2011) who indicated that a population of 1 to 100 taking a sample of 100% is deemed as the sample size.

3.5 DataTypeandCollectionMethods

In the course of the research, both primary and secondary sources of data were consulted. The primary data came from respondents who were asked to fill out structured questionnaires, while the secondary data came from the financial records of various real estate businesses and agents. A questionnaire for a survey is a series of questions that analyzes the views, opinions, attitudes, and factual facts of a group of individuals (McMillan& Schumacher, 2001). They were used in the process of data collection in relation to the independent and dependent variables. The secondary data came from the records that were maintained by all of the real estate businesses and agents operating within the region that was being researched. After being entered into a data collecting sheet and processed, the secondary data that was gathered was examined. The Secondary data was collected between 2016 and 2020. This is the period when financial performance of real estate investment has decreased from 16.2% to 13.2%.

3.6 DataValidityandReliability

The first stages of an investigation are collectively referred to as "pilot research," and they are often carried out in advance of the main study in order to evaluate the reliability and validity of the survey instrument (Kothari, 2014). The general rule of thumb is that between 5 and 10 percent of the sample being targeted should be appropriate for the pilot research (Cooper & Schindler, 2011). During the phase of the research project known as the pilot study, a total of five questionnaires were given out to a random sample of five real estate companies and agents from the county of Uasin Gishu. This was done in order to determine whether or not the instrument was suitable for use before it was actually used. The objective of piloting was to detect any ambiguities in the questionnaire.

3.6.1 InstrumentValidity

In order for a survey instrument to be considered valid, it needed to be able to reliably measure the variables that were intended to be examined and produce information that provided answers to certain questions that were deemed essential (Mugenda & Mugenda, 2003). Internal validity and external validity were the two distinct types of validity that were present in the world. When it could be shown that the research result was dependent on the factors that were taken into consideration in the investigation, a study was regarded to have internal validity. However, the amount to which the study's findings may be extrapolated to other contexts, stimuli, individuals, and times was what was meant by "external validity." Two professionals in the field of finance from Maseno University's Department of Accounting and Finance and five officials from five real estate businesses and agents in Uasin County participated in the pilot research, assessing the questionnaire's construct and content validity. These individuals participated in the study.

Factor analysis was used to examine the construct validity, which aimed to determine whether the research phenomena could be measured by the instrument, and confirmatory factor analysis was performed to double-check the construct validity. This strategy is suggested for procedures with big sample sizes (n>50), since it yields more reliable findings (Aila & Ombok, 2015). The Average Variance Extracted was used to test for convergent validity in this study (AVE). According to Ab Hamid, Sami, and Sidek, the AVE threshold value must be more than 0.5 for the buildings to be regarded acceptable

(2017). The Average Variance Extracted was used to test for convergent validity in this study (AVE). Ab Hamid, Sami, and Sidek claim that for the constructions to be defendable, the AVE threshold value must be more than 0.5, as indicated in Table 3.1. (2017).

Table 3. 1: Validity Statistics

Construct	AVE	N of Items
Asset based approaches	0.577	10
Market based approaches	0.553	10
Income Based Approach	0.509	10

3.6.2 InstrumentReliability

A survey instrument's reliability may be defined as the degree to which it yields the same or very similar findings over several trials. Hence, propensity to consistency which is established in the repetitive measurements is termed as reliability (Carmines & Zeller, 1979). In order to determine whether or not the survey instrument exhibited internal consistency, this analysis used the Cronbach alpha approach. The scores of Cronbach alpha range from 0.00 to 1.00, and values of 0.7 or above are often used as the benchmark for determining appropriate levels of internal consistency. The significance level of 0.7 was chosen as the cutoff for this investigation. Cronbach's alpha was used to evaluate the questions' internal consistency in order to draw those conclusions (Cronbach,1951).

Table 3. 2: Instrument Reliability

Cronbach'sAlpha	Internal
Consistencya≥0.9	Excellent
0.7≤a≤0.9	Good
0.6≤a≤0.7	Acceptable
0.5≤a≤0.6	Poor
a<0.5	Unacceptable

Source:Cronbach,1951

As per literature, the study consists of variables and they're respectively; Asset based approaches (Independent Variable), market-based approaches (Independent Variable), Income based approaches (Independent Variable) and financial performance (Dependent

Variable). All the variables showed a Cronbach Alpha value above 0.7 indicating the tests to be strongly reliable.

Table 3. 3: Reliability Test

| Construct | Reliability Statistics | |
	Cronbach's Alpha	N of Items
Asset based approaches	.763	10
Market based approaches	.808	10
Income Based Approach	.810	10

The results as indicated in table 3.3 hows that Cronbach alpha coefficients for all the variables, based on a threshold of 0.7 *(*Kendell & Jablensky, 2003*)*, states that if reliability coefficient is greater than 0.7 for social sciences then it is considered as reliableTherefore, the study variable interaction is formally within the requirement of the threshold; implying that the variables can be exposed to further analysis.This suggested that the items on the 5-point scale that were utilized to assess the research components were reliable and appropriate for the subsequent analysis.

3.7 Data Analysis

Kothari (2014) describe data analysis to include techniques involved in processing and packaging of the gathered information in order to structure the main components in a manner that the results can be certainly transmitted. Data analysis involved a number of steps, including data cleaning and description, data editing, data coding, and tabulations to detect any anomalies in the responses given and allocate the specific values to responses for further inspection of the edited, complete, and consistent survey questionnaires. It was imperative that these measures be taken to guarantee that the data collected were reliable and consistent. In addition, the information that was obtained was coded and reviewed for accuracy and completeness (Cooper & Schondler, 2003). The research produced descriptive data such as frequency tables, percentages, averages, and standard deviations. [Citation needed] In addition, inferential statistics were used for the purposes of correlation and multiple regression analyses. Because of this, it was possible to analyze the link between the different asset valuation techniques and the financial performance of real estate investments in the Western Kenya Region. For the purpose of conducting data analysis, the inquiry used SPSS Version 23.0, a statistical tool designed

specifically for use in the social sciences. The generated information was reported through, percentages, tabulations and measures of central tendency. This provided the generalization of the findings.

3.8 AnalyticalModel

Multiple regression, as described by Cooper and Schindler (2011), is a versatile method of data inquiry that is appropriate whenever quantitative variables are investigated in relation to any component which is stated as independent variables. To determine the relationship between asset valuation procedures (independent factors) and real estate investment returns (dependent variables), a multivariate regression model was used (dependent variable).

$$y = \beta_0 + \beta X_3$$

While,

$$r = \frac{(\sum) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

With   rbeingcorrelationcoefficient

Nbeingthenumberofscores(samplesize)

$\sum$xybeing the productsof pairedscores

$\sum$xbeing thesumof x scores

$\sum$ybeing thesumofyscores

$\sum$x^{2}beingthe sumofsquaredxscores

$\sum$y^{2}being thesumof squaredyscores

$y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_1$

$y_2 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_1$

Where:

Y=Financial Performance,measuredinReturn on Investments(Y_1)andReturn on

Assets(Y_2)

β_0=aconstant,thevalue ofYwhenallX valuesarezero

$\beta_1\ldots\beta_3$ =slopeoftheregression coefficient,thatis,measuringthesensitivityofthe
dependentvariable (Y)tounitchange in the predictorvariablesX_1,X_2 andX_3.

$X_{1=}$ Asset Based Approach

$X_2 =$ Market Based Approach

$X_3=$ Income Based Approach

3.9 TestsforStatisticalAssumptions

The hypotheses of Pearson correlation and multiple regression analyses were tested using diagnostic analysis before the inferential statistics were analyzed. This comprised normality test by use of Shapiro-Wilk test (the significance should be greater than 0.05; $P>0.05$), Multi Collinearity test by use VIF & Tolerance (VIF threshold is 10), linearity test by use of scatter plot.

3.9.1 Multi-collinearity

This entails the relationship that already exists between the independent variables. It takes place once there is a significant degree of correlation between the independent variables ($r=0.9$ or above). Because of the complexity of multiple regressions on this issue, it is essential to provide considerable consideration before including two variables that together compose a bivariate correlation of 0.7 or higher in an investigation that is otherwise analogous (Tabachnick & Fidell, 2001). Testing for multicollinearity was done using the Variance Inflation Factor (VIF). As a general rule, there will not be an issue with multi-collinearity if the VIF values are lower than 10. The values of VIF were all under 10 at any point in time. The findings are shown in Table 3.1 below.

Table 3. 4: Multi-collinearity Test Results

Variable	Tolerance	VIF
Asset based	.753	1.328
Market based	.315	3.174
Income based	.377	2.656

3.9.2 Normality and Linearity

The projected scores on the dependent variable must have uniformly distributed residuals for the normality test. In order for a connection between the observed values of a dependent variable and its anticipated values to be called linear, there must not be any substantial deviations from the normal distribution of those values (Zou, Tuncali & Silverman, 2003). In the present investigation, normality test was conducted using Shapiro Wilk test.

Table 3. 5: Normality Tests

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Asset based approaches	.115	45	.169	.979	45	.181
Market based approaches	.113	45	.176	.964	45	.173
Income based approaches	.115	45	.161	.971	45	.175
Return on Assets	.115	45	.163	.963	45	.157
Return on Investment	.117	45	.153	.974	45	.177
a. Lilliefors Significance Correction						

The Shapiro-Wilk test was used to ensure normality, since this test is able to find outliers caused by either skewness or kurtosis, or both. The Shapiro-Wilk Test was used to examine the assumption of normality (S-W). The normalcy assumption is not met when the significance level is less than 0.05, but it is met when the level is larger than 0.05. Parametric testing may be used since no variables in Table 3.5 had P values less than 0.05, indicating that normality was attained.
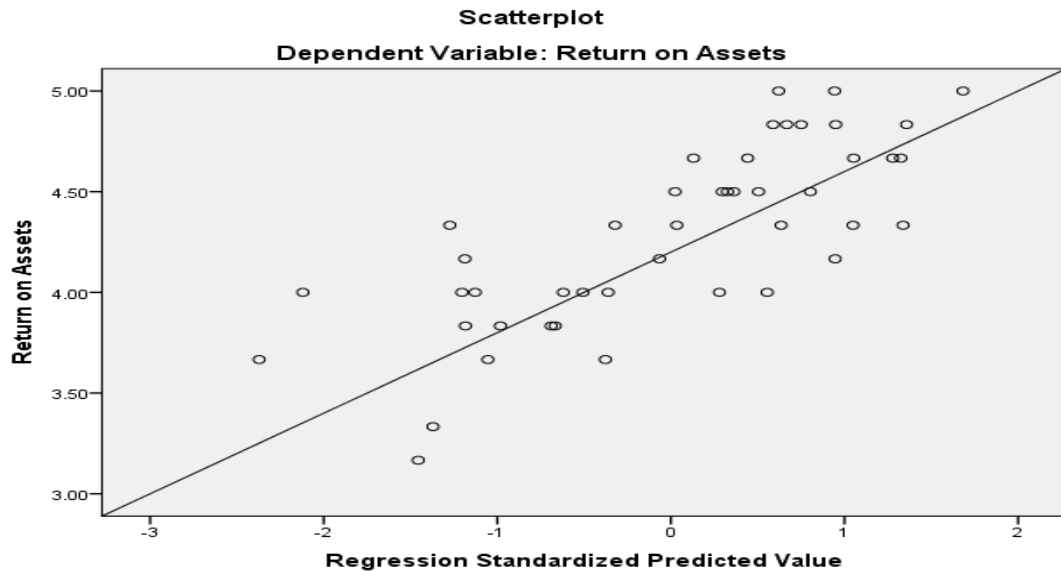
Figure 3. 1: Scatter Plot for Linearity

3.9.3 Autocorrelation

Independent observations and error factors were tested for using the Durbin-Watson statistic. The Durbin Watson test confirmed that the residuals of the models were not auto-correlated, which is a necessary condition for the independence of the residuals, a central hypothesis of regression analysis (Akter, J 2014). Table 3.6 displays the outcomes.

Table 3. 6: Autocorrelation

Dependent Variable	Durbin-Watson
Return on Investment	1.724
Return on Asset	1.606

Predictors: (Constant), Income based approaches, Asset based approaches, Market based approaches

The research outcomes are shown in Table 3.6. Since both the ROA and ROI Durbin-Watson coefficients (1.606 and 1.724, respectively) were within the range of 1.5–2.5, indicating the absence of autocorrelation in the residuals of the data, respectively. A Durbin-Watson number close to 2 indicates no serial correlation, since this value is the sweet spot (Alsaeed, 2005 Cameron, 2005; Curwin & Slater, 2008; Garson, 2012).

3.9.4 Unit Root Test

A time series's stationarity may be established with the use of a unit root test. The term "stationarity" refers to the characteristic of a time series in which the distribution does not

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vary as a function of time; non-stationarity may be caused by the presence of unit roots. To be considered stationary, a variable must not have a unit root. The Dickey Fuller Test, sometimes known as the Dickey Pantula Test, is a linear regression-based statistical technique. The Augmented Dickey-Fuller (ADF) test may be employed when serial correlation is suspected; it is based on hypothesis testing.

Ho: All panels contain unit roots

Ha: At least one panel is stationary

Table 3. 7: Unit Root Tests without Difference (Augmented Dickey-Fuller (ADF))

	Statistics	P-Value	Significant
Return on Assets	6.4644	0.0000	**
Return on Investment	12.8706	0.0000	**

* sig at 5% level, ** sig at 1% level

Table 3.7 compiles the results of the Stationarity test. If the p-value for the improved Dickey-Fuller test is more than 0.05, then unit roots (H0) exist, and if it is less than 0.05, then H0 does not exist. The results showed that no variables in the study had a unit root.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Introduction

The study's findings are presented in this section, beginning with those most directly related to the study's stated goals. This study employed data from the Western area of Kenya to establish the contribution of the asset-based valuation strategy on the financial performance of real estate investments, the impacts of the Income Approach on this performance, and the effects of the Market Approach on this performance. Results from the experiment were 90% successful.

4.1 General Frequency of demographic factors of the respondents

The repetition of an occurrence is represented by its frequency. Observation frequency may be used as a proxy for importance in characterizing event outcomes (Kawulich, 2005). Questions about rank and founding date make up the bulk of the questionnaire's frequency-based problems.

4.2.1 Position

Business owners comprised the majority of the study participants (53.3%) while managers comprised the minority of the study participants (46.7%).The results are shown in Figure 4.1
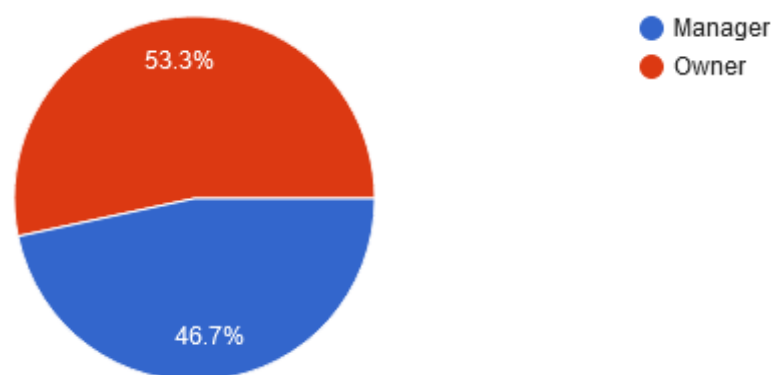
Figure 4. 1: Position of the Respondents

From the results, there was no significant difference between managers and owners and therefore, the study was able to collect adequate data from the population units which enhance reliability of the findings. Senior management is charged with the responsibility

to ensure the organization has a strategy in place (Carmichael et al., 2011). Senior management role is to set the direction for the organization to follow and thus are in charge of the overall business strategy (Wheelwright & Clark, 2007). As a result, this study was targeting respondents in management level as they are aware of aware of asset valuation approaches and financial performance.Managers, according to Muli (2020), have an advantage over other groups since they are better familiar with appraisal methods.

4.2.2 Date of Inception

Figure 4.2 explains the real estate practitioners on the basis of firm life where 63.6% has been in operation for 20 to 24 years, 13.6% for between 10 and 14 years, 13.6% for between 15 and 19 years while 9.1% for over 25 years.The results are displayed in Figure 4.2.
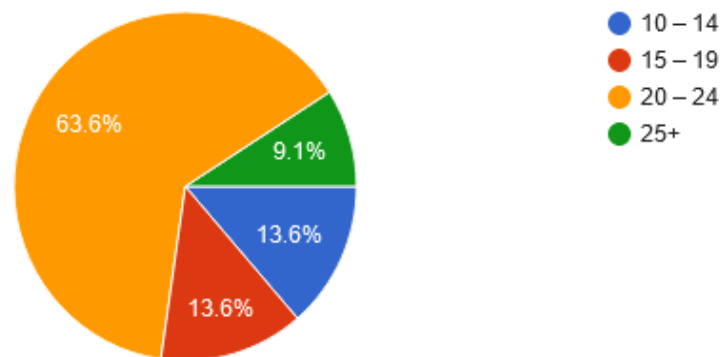
Figure 4. 2: Date of Inception

Therefore, in western region, Kenya the majority of the practitioner is 63.6% meaning there is growth in that sector and further 9.1% for over 25 years. The results postulated that over a third of the respondents are from real estate firms with more than 20 years in operation and therefore, they are in position to understand how asset valuation approaches influence financial performance. The centrality of real estate in Kenya's blueprint Vision 2030, the big 4 government goal, and the passage of laws that have provided favorable circumstances for development in the industry are all reflected in this increase in investment over the last few years. There may have been a rise in new firms in the recent five years due to the greater willingness of investors to take risks in the real estate market. The fact that all the companies had been operating for over five years suggested that the information gathered was credible as a consequence of the owners' familiarity with the local real estate market.

4.2.3 Level of education

The following figure explains that most of the study participants were from college (64.4%) followed by those from university (33.3%). The least statistics was observed for those with secondary education (2.2%).The results are shown in Figure 4.3.
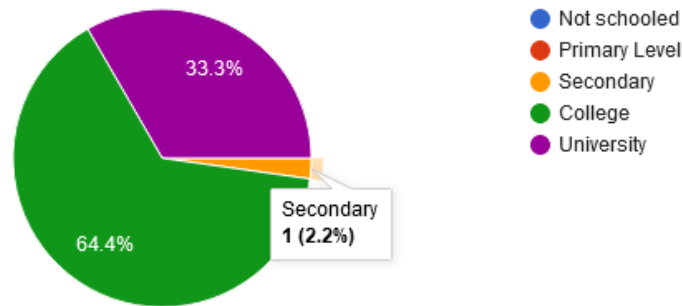
Figure 4. 3: Level of Education

Even though most of the respondents were literate and therefore, hastened data collection exercise, however, there is need for further training on real estate since only 33.3% have university degrees. This will enhance their knowledge on extensive tenets of asset valuation approaches.The results showed that the nation places a premium on the leadership of real estate investment firms. According to Nduta (2021) universities and colleges have introduced courses related to real estate investment to enhance their management.

4.2.4 Gender

Males comprised the majority of the study participants (59.1%). Females comprised the minority of the study as shown by 40.9%.%. The results are shown in Figure 4.4.
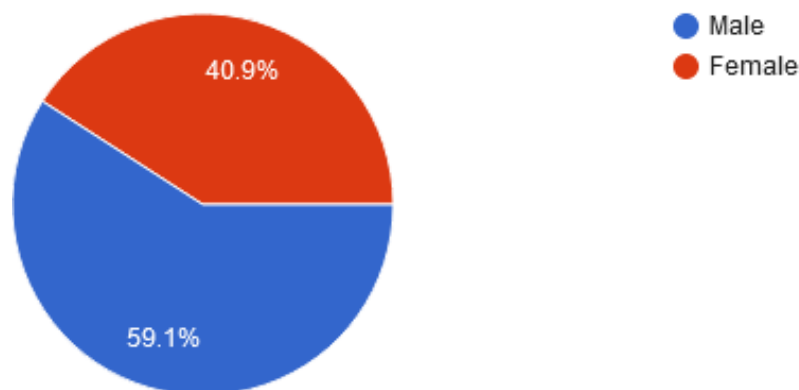
Figure 4. 4: Gender of the Respondents

The gender distribution shown above demonstrates that the research included a sufficient number of participants from both the male and female genders. Nevertheless, there was a large gender gap between males and females, with the underrepresented gender making up more than 30% of the total. Gender has been associated with valuation approaches. According to Li and Zeng (2019), a more diverse workforce, in which women are represented at all levels of the business, is connected with better average returns.

4.2.5 Experience

Most of the study participants have experience of between 6-10 (68.9%) years followed by those with over 10 years' experience (17.8%). Participants with experience between 3-6 years comprised 8.9% of the study population. The least statistics was observed for participants having between 1-3 years of experience.The results are shown in Figure 4.5.
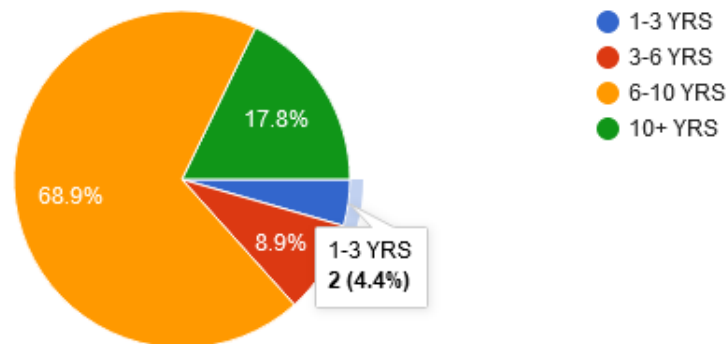
Figure 4. 5: Experience of the Respondents

Most of the participants had been working in the field for more than five years, proving that they had first-hand knowledge of the effects of asset valuation methods on business outcomes. This improved on the reliability of study findings, conclusion and recommendations hence external validity.The results shed light on the significant amount of expertise had by the management and owners of the real estate investment organization. This is also in agreement with Night Frank's Africa Report to the Nations, (Knight Frank, 2015), which demonstrates that Africa has developed into a continent that leads the globe in terms of real estate market expansion and opportunities. This is consistent with the findings of Nyoro (2017), who discovered that the majority of the managers working for real estate investment businesses in Nairobi had more than five years of experience.

4.2.6 Age

Most of the study participants were between 30- and 39-years age category (51.1%) followed by those who were between 40 and 49 age categories (28.9%). Participants in 24-29 age category comprised 17.8% of the study participants. The least statistics was observed for those in the 18-23 age categories (2.2%).The results are indicated in Figure 4.6
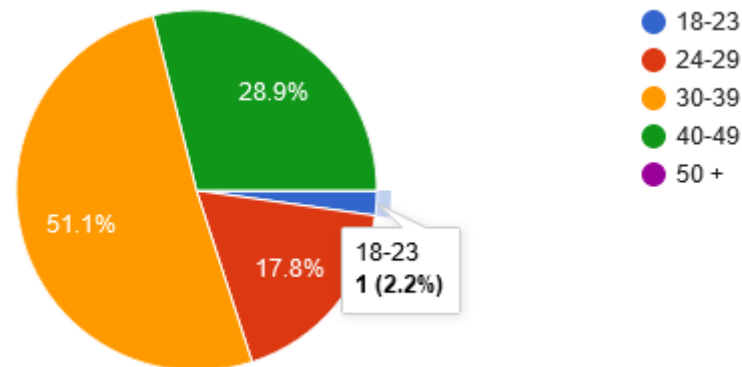
Figure 4. 6: Age of the Respondents

It is evident that there is age diversity in real estate investments in Western Kenya Region which has proven to enhance generation of idea and at the same time to ensure robust succession plan. Young generation is quick to adopt technology in asset valuation approaches which enhances accuracy and predictability.The data may have been used to explain why real estate investment companies place such a strong focus on the average age of their management teams. This was presumably owing to the fact that there is a favorable correlation between age and professional experience. Nyoro (2017) also found out that majority of real estate investment firms are over 35 years in Nairobi County.

4.5 Descriptive Statistics

Descriptive analyses were performed on all of the study variables; the mean was used to indicate central tendency, and the standard deviation was calculated to get a feel for the dispersion of the data. In order to gauge respondents' opinions on the three valuation approaches (asset-based, income-based, and market-based), we used a five-point likert scale with the following options: 1-Strongly disagree, 2-Disagree, 3-Not certain, 4-Agree, and 5-Strongly agree.

4.5.1 Descriptive Statistics on Asset Based Valuation Approaches.

The descriptive findings on asset-based valuation approaches are as shown in Table 4.3.

Table 4. 1: Descriptive Statistics on Asset Based Valuation Approaches

Asset based Valuation	Mean	Std. Deviation
Taking into account the price of development and how it affects investment policy	4.27	.688
Your investment group's development tactics will be different depending on the location of the investment project.	4.40	.780
The degree to which anticipated profits from the construction of a real estate project encourage financial commitments.	4.49	.506
Taking into account the degree of risk associated with the investment	4.36	.529
The capital growth potential of a given real estate project impacts the purchase choices of investing projects	4.56	.503
Your ability to run the project is the primary factor that should guide your decision on whether to invest in a residential or commercial real estate project.	4.58	.543
The strategy of investing in projects that are already up and running has had a significant impact on the amount of money brought in.	4.36	.609
Your investment budgets and the financial considerations that go into them are influenced by the price of the real estate project.	4.51	.727
Your investment budgets and the financial considerations that go into them are influenced by the price of the real estate project.	4.38	.614
When determining a company's owners' equity, one must first determine the book value of the company's liabilities, then subtract this number from the book value of the company's assets.	4.24	.830
The calculation is based on the disparity between the assets of the company and the sum total of its liabilities at the current fair market value.	4.13	.548

Average level of Asset based approaches	Mean	Std. Dev.	Minimum	Maximum
	4.4121 (84.3%)	0.37009	3.00	4.91

According to the findings shown in Table 4.3, the majority of respondents (Mean = 4.27, standard deviation =.688) agree with the statement that investment policy should take into account the cost of development. Also, the respondents reached a consensus on the statement that the location of an investment project has an effect on the development tactics used by your investment group (mean = 4.40, standard deviation =.780). In addition to this, they were in agreement about the extent to which returns from the development of a real estate project inspire investment (mean = 4.49, standard deviation =.506). Consideration of the degree of risk associated with the investment was unanimously agreed upon by the respondents (Mean = 4.36, Standard deviation =.529).

In addition, the participants had a strong consensus that the potential for capital growth of a particular real estate project influences the purchasing decisions of investment projects (Mean = 4.56, Standard deviation of.503), and on the other hand, the participants had a strong consensus that the participants had a strong consensus that Your ability to manage the property is the deciding factor in whether you should put your money into a residential or commercial real estate venture (Mean = 4.58, Standard deviation =.543). According to the findings of the survey, the respondents were in agreement that the strategy of investing in projects that are already operational has had a significant impact on the revenues (Mean = 4.36, Standard deviation =.609).

The respondents strongly agreed on Price of real estate project influences financial decisions of your investment budgets (Mean= 4.51, Standard deviation= .727). The respondents agree on Price of real estate project influences financial decisions of your investment budgets (Mean=4.38, Standard deviation= .614), they also agreed on Owners' equity is determined by subtracting the book value of a company's liabilities from the book value of its assets (Mean =4.24, Standard deviation=.830) and lastly the participants agreed on It is based on the difference between the fair market value of the business assets and its liabilities (Mean=4.13, Standard deviation= .548).

According to Haková et al. 2020, the fair market value of a company's assets is used to calculate the company's present value using an asset-based valuation method. The asset-based approach is a collection of valuation approaches that use the company's balance sheet as its primary data source. Companies dealing in real estate investment in Western Kenya clearly relied heavily on asset-based tactics. Investments in real estate are motivated by a number of factors, including the expected return on the initial investment,

the projected rise in value of the property over time, the competence with which the property may be managed, and the availability of alternative budgetary allocations. When it comes to the value of real estate, the age-old maxim "location, location, location" is as relevant as ever and continues to be the single most essential determinant. Real estate prices are heavily influenced by factors such as proximity to facilities, the presence of green space and picturesque vistas, as well as the prestige of the surrounding area.

In actuality, however, the application of asset-based approach methodologies to the valuation of a company, a professional practice, or a securities is something that many analysts quickly dismiss. These experts come to the conclusion that this strategy cannot be used with the privately owned firm in question because it is either too challenging, too time intensive, too disruptive to the customers, or just not relevant. In point of fact, the majority of analysts do not give the asset-based approach considerable consideration when it comes to the normal valuation of a tightly held firm or investment. This is due to the fact that these analysts do not have an adequate level of familiarity with the processes and procedures that are commonly recognized within this approach to company valuation. In addition, many analysts continue to live under the misapprehension that they know when it is appropriate to employ this valuation technique and when it is not appropriate. In addition, many analysts have false beliefs on the proper way to evaluate the quantitative findings obtained from the asset-based valuation method. (Brandolini et al., 2010).

4.5.2 Descriptive Statistics on Market Based Valuation Approaches.

The descriptive findings on market-based valuation approaches are as shown in Table 4.4.

Table 4. 2 Descriptive Statistics on Market Based Valuation Approaches

Market Based Valuation Approaches	Mean	Std. Deviation
The market technique gives a rough estimate of worth by looking at how the item stacks up against others with similar characteristics and prices.	4.22	.850
Market proof of transactions involving similar assets is sometimes difficult to come by due to the diverse character of many assets.	4.31	.596

Where the comparable market information does not apply to the same or nearly same asset, a reasonable foundation for comparison with and reliance upon similar assets is required for the market approach.	4.27	.720
When using the market method, market multiples that are obtained from a collection of comparable are often used. There is a possibility of multiples being in ranges, with a unique multiple for each comparison.	4.24	.830
The similar transaction approach is able to make use of a wide range of comparable evidence, which are also referred to as units of comparison since they are the fundamental building block of the comparison.	4.36	.802
When doing an evaluation, the market strategy need to serve as the main point of reference.	4.24	.802
Adjustments need to be made for any significant variations that exist between the subject asset and the similar transactions by a qualified expert.	4.49	.757
Adjustments may not be necessary since pricing in traded marketplaces already factor in credit risk, additional credit risk.	4.38	.576
Reference is made to fairly similar guideline firms for whose transaction values are available, and these companies' values are used to calculate the worth of a company.	4.22	.850
In this particular instance, the transaction multiples that are being utilized are the ones that were indicated in the earlier deals that included the subject firm itself.	4.31	.596

Average level of Market based approaches	Mean	Std. Dev.	Minimum	Maximum
	4.3091	0.42614	3.27	5.00

According to Table 4.4's survey results, the majority of respondents think that getting a sense of an asset's worth may be achieved by a comparison to similar assets for which prices are publicly accessible (Mean= 4.22, standard deviation = .850). Respondents also agreed that it is difficult to uncover market proof of transactions involving similar assets because of the many types of assets out there (Mean= 4.31, Standard deviation =.596). Additionally, they reached consensus on the following: where the similar market information does not pertain to the identical or roughly the same asset, there has to be a legitimate basis for comparison with and reliance upon comparable assets in the market method (Mean =4.27, standard deviation= .720.

The respondents all agreed that market multiples produced from a collection of comparable are often used in the market approach. It's possible that the multiples will be spread out across a broad range, with a unique multiple for each comparative (Mean=4.24, Standard deviation= .830). Furthermore, there was widespread consensus that the similar transaction approach permits a wide range of units of comparison to serve as the foundation for comparisons (Mean=4.36, Standard deviation of .802), and on the other hand participants were unanimous that the market method was the best way to value anything (Mean= 4.24, Standard deviation=.802). Results showed that respondents were in agreement with the statement In the event of significant dissimilarities between the subject asset and the comparable transactions, an expert should be consulted to make appropriate changes (Mean=4.49, Standard deviation=.757).

However, respondents agreed that modifications may not be necessary if prices in traded marketplaces already accounted for credit risk and increased credit risk (Mean= 4.38, Standard deviation= .756). Respondents think that the best way to establish a company's fair market worth is to compare it to recently traded businesses with similar characteristics (Mean=4.22, Standard deviation= .850), they also reached consensus on the fact that the transaction multiples being employed here are those that were implicit in deals involving the subject firm in the past (Mean =4.31, Standard deviation=.596).

The market technique to estimating property worth involves making comparisons between the subject property and other, comparable properties that have recently been put up for sale (Almabekova et al., 2018). Due to the fact that sales are determined by the activities of buyers and sellers in the market, the sales comparison technique often results in the production of the most credible evidence. This strategy is based on the assumption that the average purchaser would investigate previous sales and current asking prices in order to make the most cost-effective purchase (and Adetiloye & Eke, 2014). Based on the findings of the study, it was determined that the transaction multiples that are used in the market-based approach are the same ones that were implied in the prior transactions that involved the subject company itself; prices in traded marketplaces will almost always factor in credit risk; increased credit risk; changes may not be necessary; and professionals account for discrepancies between the relevant asset and similar transactions.

Contrarily, the results showed that the market approach is the way that should be employed as the main basis of an assessment. A valid foundation for comparison with and reliance upon similar assets in the market technique is also required in cases when the comparable market information does not apply to the same or nearly identical asset. As long as this is lacking, the market-based approach cannot be relied upon. Furthermore, due to the unique character of many assets, it may be difficult to locate market evidence of transactions involving assets that are comparable to those under inquiry. The premise of both the asset-based strategy and the market technique is that different products may be swapped for one another. According to this notion, a prudent purchaser would not pay more for a piece of real estate than they might have paid for a similarly sized and attractive house elsewhere.

One major drawback of relying on market value is that it is only possible to make a direct comparison between cost and market value when markets are in equilibrium. To make matters worse, finding a happy medium in the real estate market may be difficult. In most cases, there is either an excess of or a shortage of a particular type of property. This means that prices will either drop below or rise above the cost to reproduce the property. This can be influenced by the local scarcity of land, which can affect the price of land as well as cost inflation or deflation in the building cost component. Although there are potential solutions to this problem, they all require making modifications to the cost estimate in order to account for any potential disequilibrium.

4.5.3 Descriptive Statistics on Income Based Valuation Approaches.

The descriptive findings on income-based valuation approaches are as shown in Table 4.5.

Table 4. 3: Descriptive Statistics on Income Based Valuation Approaches

Income Based Valuation Approaches	Mean	Std. Deviation
Predictions of net income are based on past performance and real leasing agreements.	4.31	.596
The projections of future income and the rate at which leases will be renewed are cautious, consistent with market trends, and based on solid evidence.	4.20	.815

The best estimates of future costs, or "pro forma expenditures," are those that take into account past results as well as the terms of any applicable contracts, tax rates, and utility rates now in place.	4.22	.850
The assumed rate of expenditure increase is consistent with past inflation patterns and is reasonable in light of the assumed rate of income growth.	4.20	.757
The selected cap rate is reasonable and is backed by market data and similar sales.	4.29	.695
The projected vacancy rate is in accordance with actual performance and recent market tendencies.	4.38	.490
Capitalization rates are calculated using N.O.I. that has been allowed to stabilize. Lease termination fees and tax credits are two examples of the kinds of one-time costs that are not included.	4.24	.802
The return on investment is commensurate with the level of danger posed by the property.	4.49	.757
Capitalization of the expected future benefits is done at a suitable rate.	4.38	.576
Any profit would have to be categorized as cash flow, whether it be operational cash flow, after-tax cash flow, or discretionary cash flow.	4.31	.821

Average level of Income based approaches	Mean	Std. Dev.	Minimum	Maximum
	4.2756	0.47057	3.20	5.00

Results in Table 4.5 indicated that the respondents agreed on Income estimates are based on actual leases and historical performance (Mean= 4.31, standard deviation = .596). Further, there was consensus that the projected rates of income growth and lease renewal are modest, in accordance with market trends, and backed by evidence (Mean= 4.20, Standard deviation =.815). In addition, they reached consensus that Pro forma expenditures should account for past results in conjunction with information about current supplier contracts, property tax rates, and utility bills (Mean =4.22, standard deviation= .850. The respondents all agreed that the projected increases in both expenses and income were reasonable and consistent with past inflation patterns (Mean=4.20, Standard deviation= .757).

The panelists also agreed that the selected cap rate is reasonable in light of market conditions and is consistent with similar sales data (Mean=4.29, Standard deviation of .695), and On the other hand, the panelists reached a unanimous consensus that the

vacancy assumptions are consistent with both past performance and the most recent developments in the market (Mean= 4.38, Standard deviation=.490). The conclusion of the research indicates that the respondents were in agreement that the cap rate is applied to a stable net operating income. It does not include one-time payments that are customary, such as lease termination fees or tax incentives (Mean=4.24, Standard deviation=.802).

Nevertheless, the respondents reached a consensus that investors get compensation that is proportional to the degree of risk connected with the property (Mean= 4.49, Standard deviation= .757). The responders are in agreement that the expected future benefits have been capitalized using the appropriate rate of capitalization (Mean=4.38, Standard deviation= .576), they also reached a consensus that the only category of profits that should be considered when valuing a company was cash flow, in one of its many forms, such as operational cash flow, after-tax cash flow, or discretionary cash flow (Mean =4.31, Standard deviation=.824).

An investor's estimation of a property's value may be made using the income method, a kind of real estate evaluation based on the property's rental revenue. The term "income capitalization approach" may be used interchangeably with "income capitalization technique" (Yeh & Hsu, 2018). The reasoning behind using an income method to value an investment property is straightforward: value is determined by the sum of income it is expected to provide and the probability of actually getting that sum. The justification for income capitalization follows the same line of thinking. If one were to use the subject approach as a method for valuing anything, they will have to guess about the value of the right to receive an unlimited stream of income. But the accuracy with which rental rates, capitalization rates, discount rates, and other factors indicative of the market sector represented by a property under assessment are assessed is crucial to the trustworthiness of the computations. These analyses have shown that the expected future benefits are capitalized at a rate that is appropriate for the level of risk associated with the property, that the anticipated income is based on the actual leases, and that the investors get sufficient compensation for this risk. According to Chadda and Vardia's (2020) research, one of the shortcomings of the income-based method to valuation is that it requires the previous sales of properties that are sufficiently similar. This is not often a problem for

residential houses with only one family living there, but it frequently is for commercial ones.

4.5.3 Financial Performance

Financial performance was measured using return on Assets and return on Investments. Secondary data was collected from 2015 to 2019. It is evident that both return on assets and return on investments decreased from 2015 to 2017 then increased from 2017 to 2018 afterwards reduced from 2018 to 2019. The trend is as shown in Figure 4.7.
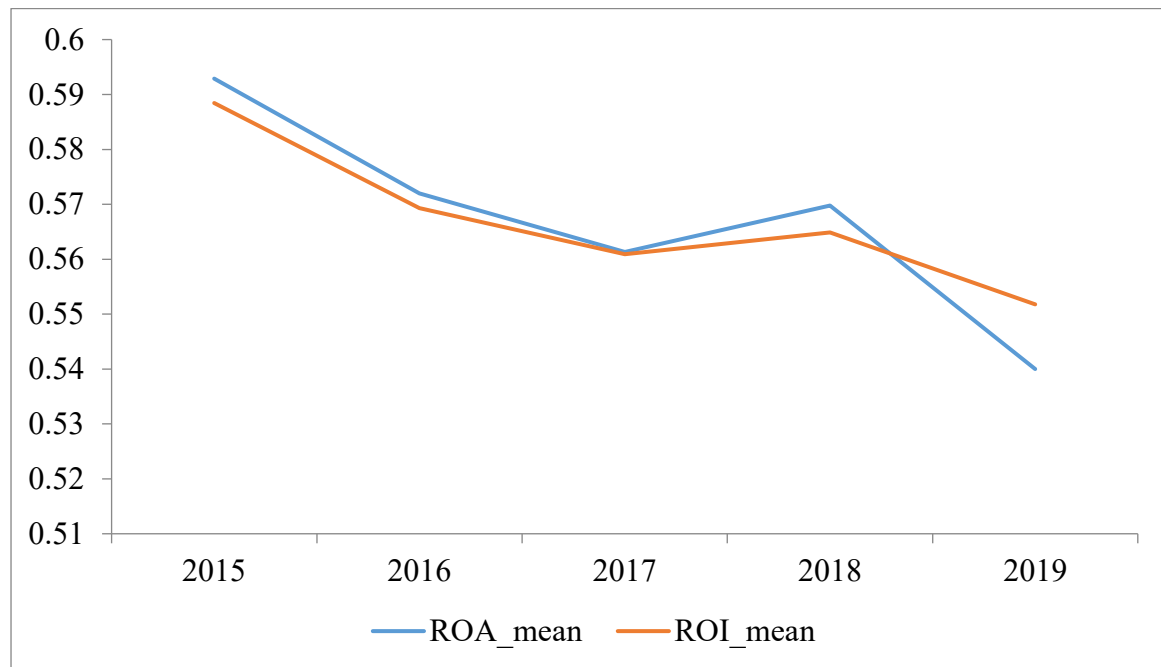
Figure 4. 7: Financial Performance between 2015 and 2019.

Table 4.6 shows the summary of study variables. Asset based valuation approaches ranged from 3.0 to 4.91 with an average of 4.4121 and S.D of 0.37009. Market based valuation approaches ranged from 3.27 to 5 with an average of 4.3091 and S.D of 0.42614. Income based valuation approaches ranged from 3.20 to 5 with an average of 4.2756 and S.D of 0.47047. Financial performance was measured using two indicators, ROA and ROI. Return on assets ranged from 3.17 to 5 with an average of 4.2852 and S.D of 0.44894. Return on investments ranged from 2.0 to 5 with an average of 4.3370 and S.D of 0.57460.

Table 4. 4: Summary of Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation

Asset based approaches	45	3.00	4.91	4.4121	.37009
Market based approaches	45	3.27	5.00	4.3091	.42614
Income based approaches	45	3.20	5.00	4.2756	.47057
Return on Assets	45	3.17	5.00	4.2852	.44894
Return on Investment	45	2.00	5.00	4.3370	.57460

From Table 4.6, it is evident that among the three approaches used for valuation in real estate investment in Western Kenya, Asset based approaches had the highest mean indicating that real estate investment firms favored asset approaches, it was followed closely by market based approaches then income based approaches. All the three approaches had an overall mean of above 4.0 meaning they are used at great extent. Another critical observation was that there was no significant difference among the three, implying real estate firms used more than one approaches during valuation of their real estate investments.

Transforming Continuous Data to Categorical Data

Dependent variable, herein financial performance was collected using secondary data to measure return on asset (ROA) and return on investment. The nature of this data (dependent variable) was continuous while independent variables were measured in five point likert scale hence categorical data. To undertake inferential regression, moreso, Pearson correlation and linear regression, continuous data was converted into categorical data.; less than 0   as 1; from 0.1 to 2.0 as 2; from 2.1 to 3.0 as 3; from 3.1 to 3.5 as 4 and from 3.51 and above as 5. This is in line with Wu (2007) who indicated the need to transform categorical data to continuous data as well as continuous data to categorical data. This technique was successful adopted by Kuria and Otinga (2021) in their study on the influence of Loan Portfolio on Financial Performance ofCommercial Banks Listed On Nairobi SecuritiesExchange, Kenya. The independent variable was collected using primary sources while secondary data was collected from secondary sources.

4.7 Correlation Analysis

The following correlation analysis was generated by using statistical software designed for use in the social sciences: In light of this, the asset-based methods, the market-based approaches, and the income-based approaches' respective values for the financial performance correlation coefficient are shown below. As can be seen in the table, techniques that are based on assets, approaches that are based on markets, and approaches that are based on income all exhibited a substantial positive connection ranging from modest to high.

Table 4. 5: Correlation Analysis

		Asset based approaches	Market based approaches	Income based approaches
Asset based approaches	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	45		
Market based approaches	Pearson Correlation	.446**	1	
	Sig. (2-tailed)	.002		
	N	45	45	
Income based approaches	Pearson Correlation	.206	.774**	1
	Sig. (2-tailed)	.174	.000	
	N	45	45	45
Return on Assets	Pearson Correlation	.375*	.747**	.685**
	Sig. (2-tailed)	.011	.000	.000
	N	45	45	45
Return on Investment	Pearson Correlation	.585**	.756**	.348*
	Sig. (2-tailed)	.000	.000	.019
	N	45	45	45

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From the correlation Table 4.8, Asset based approaches is positively correlated to financial performance of real estate investments in Western Kenya region the coefficient is 0.375 (p value < 0.05) this is significant at 95% confidence level for return on assets and 0.585 (p value < 0.01) this is significant at 99% confidence level for return on investments. Thus, increase in asset based approaches would make performance of financial performance of real estate investments also to increase significantly. In this regards, if the investors are motivated by the extent to which returns from developing a

real estate project, the capital growth potential of a particular real estate project, the capacity to operate the project and financial decisions of investment budgets, financial performance will increase. However, return on investments will increase more than return on asset. These are supported by Tajani, Morano and Ntalianis (2018) who found that asset-based valuation approaches enhance financial performance of real estate firms in Italy, an assertion which was further supported by Jenkins and Kane (2006) and Ankobiah (2001). The results contradicted Kok, Koponen and Martínez-Barbosa (2017) who found out that asset-based approaches have insignificant effect of real estate performance. Similar results were reported by Bongaerts, De Jong and Driessen (2017) as well asOmboi (2011).

Similarly, there is positive correlation between market-based approaches and financial performance of real estate investments in Western Kenya region the coefficient is 0.747 (p value < 0.01) this is significant at 99% confidence level for return on assets and 0.756 (p value < 0.01) this is significant at 99% confidence level for return on investments. This implies that an increase in market-based approaches would make performance of financial performance of real estate investments also to increase. Market-based approaches that make use of transaction multiples, prices in liquid markets that account for credit risk, incremental credit risk, and the expertise of professionals who account for material differences between the relevant transactions and the subject asset all contribute to improved financial results. Nonetheless, investment returns will rise more rapidly than asset returns. The results are supported by Almabekova, Kuzmich and Antosik (2018) who revealed that income based appraisal is the most preferred approach of real estate valuation due to sustained returns. Similar studies with same results are Payne and Redman (2003), Leopoldsberger et al (2011) and Adetiloye and Eke (2014).The results are not supported by other studies. For instance, Ghosh et al. (2020) on the effect of market value method on performance of real estate firms in the EU. Similar results were also reported by Chattopadhyay, Braden and Patunru (2005), Lee, Yeh and Yu(2022) as well as Danbolt and Rees (2003).

Lastly, income-based approaches is positively correlated to financial performance of real estate investments with coefficient a coefficient of 0.685 (p value < 0.01) which is significant at 99% confidence level for return on assets and 0.348 (p value < 0.05) this is significant at 95% confidence level for return on investments. Based on this hypothesis,

real estate investments in Western Kenya would do far better financially if they adopted a more income-based strategy. The financial performance will improve if investors are reimbursed fairly for the amount of risk related to the property, and if the expected future benefits are capitalized using an appropriate capitalization rate, all based on real leases and previous performance. However, return on assets will increase more than return on investment. This results have been supported by other studies on the relationship between income-based approaches and financial performance (Yeh & Hsu, 2018; Kucharska-Stasiak & Źróbek, 2015). However, some studies have found insignificant effect of income approach valuation on financial performance (Chadda & Vardia, 2020; Alford, 1992).

4.8 Asset-Based Valuation Approach on the Financial Performance of Real Estate Investments

The primary goal of this research was to determine the effect of the asset-based valuation method on the profitability of real estate investments in Western Kenya. Correlation and regression analysis were used to display the findings. The results were listed in Table 4.9.

Table 4. 6: Model Summary for Asset Based Approaches

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.585ᵃ	.343	.327	.47127	.343	22.411	1	43	.000

Table 4.9 reveals that the asset-based valuation methods account for 34.3% of the variance in the financial performance of real estate investments in the Western area of Kenya, which supports the hypothesis that these methods are useful. In addition, the disturbance term accounts for 65.7% of the residual variance. Additionally, the F-statistical value is significant ($F=22.411$, $p<.001$), which indicates that the model is accurate. In other words, the asset-based valuation methodologies are a strong predictor of financial success of real estate investments in the Western area of Kenya, as shown by the research model's substantial F value.

Table 4. 7: Regression Coefficients for Asset Based Approaches

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.

	B	Std. Error	Beta		
(Constant)	.327	.850		.385	.702
Asset based approaches	.909	.192	.585	4.734	.000
a. Dependent Variable: Return on Investment					

Furthermore, the regression coefficient provides a positive and statistically significant predictive power (β=0.909, P=0.000). With a standard error of 0.192, this means that for every one unit rise in Asset based techniques, the financial performance of real estate investments in the Western area will improve by 0.909 units. This connection may be represented by the diagram below:

$$y = 0.327 + 0.909X_1$$

Where;

Y= Financial Performance

X_1= Asset based approaches

Clearly, the financial results of real estate investment enterprises in Western Kenya may be better understood when asset-based techniques are taken into account. Thus, asset based techniques strongly predict the financial success of real estate investment enterprises in Western Kenya. Statistical methods such as correlation and description corroborate this. Investors are inspired to take on a real estate project based on the expected returns, the possibility for capital appreciation, the feasibility of the project's operation, and the financial considerations relating to the investment budget. These are reinforced by the findings of Tajani, Morano, and Ntalianis (2018) as well as the research of Jenkins and Kane (2006) and Ankobiah, who discovered that asset-based valuation methodologies improve the financial performance of Italian real estate enterprises (2001). Although some studies have supported the findings of this study, other have recorded contradictory outcome. Some of the reason identified was the type of data used, research context and conceptualization of asset-based valuation approaches The results contradicted Kok, Koponen and Martínez-Barbosa (2017) who found out that asset-based approaches have insignificant effect of real estate performance. This study used primary data to measure performance while current study adopted secondary data. Similar results were reported by Bongaerts, De Jong and Driessen (2017) which was done outside Kenya with different regulation as far as asset valuation approaches as concerned. Omboi (2011) measured performance of real estate in term of prices while the current study used return on asset and return on investments.

4.9 Effects of the Income Approach to the valuation on the Financial Performance of Real Estate Investments

The second goal was to analyze how using the Income Approach to valuation will impact the profitability of real estate investments in Western Kenya. Regression and correlation analyses were used to display the findings. The data is shown in Table 4.11.

Table 4. 8: Model Summary for Income Based Approaches

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.348ᵃ	.121	.100	.54496	.121	5.916	1	43	.019

Table 4.11 presents a summary of these tests, showing that income-based valuation methodologies account for 12.1% of the variance in the financial success of real estate investments in Kenya's Western region. 87.9% of the variance was attributable to elements beyond the scope of this investigation. The F-statistic from the ANOVA tests was found to be statistically significant (F=5.916, p<.005), demonstrating the model's viability. Financial performance of real estate investments in the Western area of Kenya was shown to be significantly predicted by income-based valuation methodologies, as indicated by a large F value in the study's model. This suggest that subsequent studies should consider inclusion of other factors that may improve the coefficient of income-based approaches to financial performance.

Table 4. 9: Regression Coefficients for Income Based Approaches

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.521	.751		3.358	.002
Income based approaches	.425	.175	.348	2.432	.019
a. Dependent Variable: Return on Investment					

Further, regression coefficient yields a positive and significant predictive power (β=0.425, P=0.019). This indicate that a unit increase in income based approaches will lead to 0.425-unit increase in financial performance of real estate investments in the Western Kenyaregion with a standard error of 0.175. The relationship can be presented as shown in the model below.

Hence

$$y = 2.521 + 0.425X_2$$

Where;

       Y_1= Financial Performance

       X_2= Income based approaches

The findings showed that the financial performance of real estate investment enterprises in Western Kenya might be better described using an income-based approach. Therefore, real estate investment enterprises in Western Kenya may benefit greatly from income-based methodologies in predicting their financial success. The outcomes of both the correlation and the descriptive statistics were comparable. Market-based approaches employ transaction multiples that account for credit risk, additional credit risk, and any major changes between the subject asset and the similar transactions. The results have been heavily supported by Yeh and Hsu (2018) who examined real estate valuation models and return on investment in South Korea and Kucharska-Stasiak and Źróbek (2015) in Poland. Nevertheless, Chadda and Vardia (2020) indicated income valuation approach has insignificant effect on performance of non-financial assets. Similar results were also obtained by Alford (1992) in examining the relationship between income based approaches and return on investment in the United Kingdom.

4.10 Market Approach to the Valuation on the Financial Performance of Real Estate Investments

The third aim was to analyze how the Market Approach to valuation affected the profitability of real estate investments in Western Kenya. Correlation and regression analysis were used to display the findings. The results are shown in Table 4.13.

Table 4. 10: Model Summary for Market Based Approaches

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.756ᵃ	.572	.562	.38043	.572	57.375	1	43	.000

Table 4.13 displays an R-squared value of 0.571, suggesting that the market valuation method can account for 57.1% of the variance in the financial returns on investments in real estate in Kenya's Western area. In addition, the disturbance term accounts for 42.9%

of the residual variance. The F-statistic from the ANOVA tests was found to be significant (F=57.375, p<.001), indicating that the model is accurate. In other words, the research model's large F value demonstrates that the Market Approach to the Valuation predicts the financial success of real estate investments in Kenya's Western area.

Table 4. 11: Regression Coefficients for Market Based Approaches

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	-.056	.583		-.096	.924
Market based approaches	1.019	.135	.756	7.575	.000
a. Dependent Variable: Return on Investment					

Further, regression coefficient yields a positive and significant predictive power (β=1.019, P=0.000). This indicate that a unit increase in Market based approaches will lead to 1.019-unit increase in financial performance of real estate investments in the Western region with a standard error of 0.135. The relationship can be presented as shown in the model below

$$y = -0.056 + 1.019X_3$$

Where;

Y= Financial Performance

X_3= Market based approaches

The findings showed that the financial success of real estate investment enterprises in Western Kenya might be better explained by using a market-based approach. As a result, real estate investment enterprises in Western Kenya might benefit greatly from market-based techniques in terms of forecasting their financial success. The outcomes of both the correlation and the descriptive statistics were comparable. Specifically, financial results will improve if investors are fairly paid for the level of risk involved with the property, and if the expected future gains are capitalized using an appropriate capitalization rate, both of which are based on real leases and previous performance.The results are supported by Almabekova, Kuzmich and Antosik (2018) who revealed that income based appraisal is the most preferred approach of real estate valuation due to sustained returns. Similar studies with same results are Payne and Redman (2003), Leopoldsberger et al

(2011) and Adetiloye and Eke (2014) on real estate valuation and optimal pricing techniques.The results are not supported by other studies. For instance, Ghosh et al. (2020) on the effect of market value method on performance of real estate firms in the EU. Lee, Yeh and Yu(2022) revealed that market based valuation has insignificant effect real estate valuations performance. Similar results were also reported by Chattopadhyay, Braden and Patunru (2005) as well as Danbolt and Rees (2003).

4.11 Multiple Linear Regression Analysis

To see whether many independent variables can be used to predict a single dependent one, researchers use a technique called multiple regression analysis (Mugenda & Mugenda, 2008). The data set required repeated regression analyses due to the large number of relevant components. This research aimed to determine whether or not there was a difference in the financial performance of real estate investments assessed using an asset-based approach, an income-based valuation technique, or a market-based valuation strategy for properties located in Western Kenya. As potential predictors of the ways in which financial success of real estate investments in the Western area of Kenya, the three independent variables were taken into consideration jointly (in the form of a single equation). To determine whether or not the influence of the independent factors on the dependent variable was statistically significant, a multiple linear regression model was used.

Each term's p-value is a test to see whether the null hypothesis, that the coefficient is zero, is correct (no effect). A small p-value (less than 0.05) shows that the alternative to the null hypothesis should be considered. Therefore, if a predictor's p-value is low, it is likely to play a significant role in the model. This is due to the fact that changes in the predictor value correlate with shifts in the response variable. Due to this fact, it is essential that the predictor be included into the model. A big but insignificant p-value indicates that there is no correlation between the changes in the predictor and the responder variables.

4.11.1 Multiple Regression using Return on Investment

Table 4. 12: Model Summary based on Return on Investments

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson

1	.865ᵃ	.749	.731	.29822	1.724

a. Predictors: (Constant), Income based approaches, Asset based approaches, Market based approaches

b. Dependent Variable: Return on Investment

The amount of variation in the dependent variable (Return on investment) that can be predicted from the independent variables is denoted by the "R-Square" statistic (Income based approaches, Asset based approaches, Market based approaches). According to the adjusted R2 that is shown in Table 4.15, all of the predictor factors that were investigated for this research can account for 73.1% of the variance in return on investments that real estate businesses report. The remaining 26.9% of the variation may be attributed to other variables that are outside the scope of this research.

As shown by the modified R-square statistic, the more predictors are included in the model, the more variance in the dependent variable may be accounted for. As more and more predictors are added to the model, the predictors' capacity to explain the dependent variable increases. The purpose of the adjusted R-square is to give a more precise estimate of the R-squared for the population. The R-square statistic was calculated at 0.749, while the Adjusted R-square statistic yielded a value of 0.731.

Table 4. 13: ANOVA Table based on Return on Investments

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	10.881	3	3.627	40.782	.000ᵇ
Residual	3.646	41	.089		
Total	14.527	44			

a. Dependent Variable: Return on Investment

b. Predictors: (Constant), Income based approaches, Asset based approaches, Market based approaches

In addition, the F-statistical value is significant (F=40.782, p<.001), as shown in table 4.16 of the ANOVA findings, validating the model's fitness. In other words, the considerable F value in the research model indicates that the Income-based, Asset-based, and Market-based methods are genuinely distinct from one another and have diverse impacts on the dependent variable.

Basing on the findings in Table 4.17, the study observed that the asset valuation

approacheshad a significant partial influence in predicting return on investment of real estate investments in the Western region, Kenya as indicated by the significant standardized beta coefficients: Asset based approacheshad $\beta = 0.220$, $t = 2.442$, p-value = $0.019 < 0.05$ which was considered to be significant at 5% level of significance wher3as market based approaches had $\beta = 1.058$, $t = 7.589$, p-value = $0.000 < 0.01$ and Income based had $\beta = -0.517$, $t = -4.052$, p-value = $0.004 < 0.05$ which were considered to be significant at 1% level of significance. Since the constant was determined to be negligible $\beta = -.621$, $t = -1.004$, p-value = $0.321 > 0.05$), this suggests that there are more factors (beyond the three asset valuation methodologies) that may affect the ROI of Western real estate investments but are not currently part of the model.

Table 4. 14: Regression Coefficients based on Return on Investments

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
(Constant)	-.621	.618		-1.004	.321		
Asset based	.342	.140	.220	2.442	.019	.753	1.328
Market based	1.426	.188	1.058	7.589	.000	.315	3.174
Income based	-.631	.156	-.517	-4.052	.000	.377	2.656
a. Dependent Variable: Return on Investment							

Multiple Linear Regression model equation that was used to predict the return on investment of real estate investments in the Western region when given the asset valuation approaches was:

$$y_1 = -0.621 + 0.342X_1 + 1.426X_2 - 0.631X_3 + 0.618$$

Where;

Y	=	return on investment of real estate investments
X₁	=	Asset Based Valuation approach
X₂	=	Market Based Valuation approach
X₃	=	Income Based Valuation approach

Y = return on investment of real estate investments

X_1 = Asset Based Valuation approach

X_2 = Market Based Valuation approach

X_3 = Income Based Valuation approach

Normalization of all variables to have a mean of zero and a standard deviation of one is assumed for the calculation of standard errors in a regression equation. Variables with the largest impact on the projected value have larger standardized coefficients since they are all stated in the same units. The unstandardized coefficients demonstrate that this is not

always the case. To evaluate the impacts of the variable on the prediction, it may be difficult to use unstandardized coefficients since their magnitude may vary greatly depending on the units of the variables. The sign of the coefficients (positive or negative) remains the same regardless of how significant the differences are between the standardized and unstandardized versions.

The results revealed that asset based approaches has significant positive effect on financial performance as measured by return on investment. These are supported by Ankobiah (2001) who indicated that asset based approaches enhances financial performance, an assertion which was further supported by Jenkins and Kane (2006) who demonstrated that for privately held firms' asset-based valuation approaches result to increase in financial performance. However, Schulz (2013) as well as Ionescu, Toma and Founanou (2018) found that asset-based valuation does not always result to improvement in financial performance.

The results revealed that income based approaches has significant negative effect on financial performance as measured by return on investment. These findings are not consistent with the result of a study byIlsjan and Kask, (2005) also revealed that the appraisal for purposes of accounting was relevant for main cities in Estonia. Further, Almabekova, Kuzmich and Antosik (2018) examined the income method to business appraisal via Russian perception and revealed that income based appraisal is the most preferred approach of real estate valuation.

The findings indicated that market-based strategies significantly improved financial performance as assessed by ROI. The results are in line with those of a research by Tajani, Morano, Salvo, and De Ruggiero (2019) that aimed to create a novel model that could be included into existing market approach methodologies for property appraisals.However, Bernstrom (2014) indicated that market-based Valuation approaches do not always lead to increased financial performance. Data that is both similar and current is crucial when using a market-based strategy, yet this kind of information may be challenging to track down, as was observed in the research.

4.11.2 Multiple Regression using Return on Assets

The study also conducted multiple linear regression using return on assets as measure of financial performance of real estate investments

Table 4. 15: Model Summary based on Return on Asset

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.771[a]	.595	.565	.29605	1.606

a. Predictors: (Constant), Income based approaches, Asset based approaches, Market based approaches

b. Dependent Variable: Return on Asset

Table 4.18 displays the corrected R2 for all the investigated predictor variables, which indicates that they explain 59.5% of the variance in the return on assets of real estate enterprises. Other variables outside the scope of this research account for the remaining 40.5% of the variation. An effort to more accurately estimate the population's R-squared, modified R-squared seeks to do precisely that. R-square was calculated to be 0.595, whereas Adjusted R-square was calculated to be 0.565.

Table 4. 16: ANOVA Table based on Return on Asset

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	5.274	3	1.758	20.060	.000[b]
Residual	3.593	41	.088		
Total	8.868	44			

a. Dependent Variable: Return on Asset

b. Predictors: (Constant), Income based approaches, Asset based approaches, Market based approaches

In addition, the F-statistic is significant ($F_{(3,44)}$= 20.060, p<.001), as shown in table 4.19 of the ANOVA findings, proving the model is accurate. In other words, the considerable F value in the research model indicates that the Income-based, Asset-based, and Market-based methods are genuinely distinct from one another and have diverse impacts on the dependent variable.

Basing on the findings in Table 4.20, the study observed that the asset valuation approacheshad a mixed significant partial influence in predicting return on Asset of real estate investments as indicated by the standardized beta coefficients: Asset based approaches had β = 0.127, t = 0.910 p-value = 0.368> 0.05 and Income based had β = 0.287, t = 1.857, p-value = 0.071 > 0.05 which was considered to be insignificant at 5% level of significance whereas market based approaches had β = 0.493, t = 2.642, p-value = 0.012< 0.05which was considered to be significant at 5% level of significance. The

constant was found to be insignificant, that is, β =0.376, *t =0.612,* p-value = 0.55> 0.05; this indicates that apart from the three asset valuation approaches, there are other variables, not included in the model, that could possibly influence Return on Asset of real estate investments in the Western region.

Table 4. 17: Regression Coefficients based on Return on Asset

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**Tolerance**	**VIF**
(Constant)	.376	.614		.612	.544		
Asset based	.127	.139	.104	.910	.368	.753	1.328
Market based	.493	.187	.468	2.642	.012	.315	3.174
Income based	.287	.155	.301	1.857	.071	.377	2.656
a. Dependent Variable: Return on Asset							

Multiple Linear Regression model equation that was used to predict the Return on Asset of real estate investments in the Western region when given the asset valuation approaches was:

$$y_2 = 0.376 + 0.127X_1 + 0.493X_2 + 0.287X_3 + 0.614$$

Where;

Y	=	Return on Asset of real estate investments
X₁	=	Asset Based Valuation approach
X₂	=	Market Based Valuation approach
X₃	=	Income Based Valuation approach

Y = Return on Asset of real estate investments

X_1 = Asset Based Valuation approach

X_2 = Market Based Valuation approach

X_3 = Income Based Valuation approach

The results revealed that asset based approaches has insignificant positive effect on financial performance as measured by return on asset. The findings are consistent with the results ofSchulz (2013) as well as Ionescu, Toma and Founanou (2018) found that asset-based valuation does not always result to improvement in financial performance. However, Ankobiah (2001) who indicated that asset appraisal can result to effective management and deployment of existing assets to increased availability or cash flow for daily operations of the port. Similar results were obtained by Jenkins and Kane (2006) who demonstrated that for privately held firms' asset-based valuation approaches result to increase in financial performance.

Financial performance, as measured by return on asset, was shown to be significantly improved by adopting an income-based strategy. These results are in line with those found by Almabekova, Kuzmich, and Antosik (2018), who looked at the income technique to company evaluation from a Russian perspective and found that income-based appraisal is the most favored methodology of real estate value owing to continuous returns. A research by Demirakos, Strong, and Walker(2010) revealed no statistically significant relationship between the accuracy of income-based valuation target prices and the performance of foreign investment houses for 94 UK-listed corporations between July 2002 and June 2004.

In this study, we tested the hypothesis that market-based strategies will improve financial performance by increasing the return on assets. The study shows that using market-based valuation procedures has a considerable effect on a business's bottom line. The results are in line with those of a study by Tajani, Morano, Salvo, and De Ruggiero (2019), which set out to develop a novel model that could be included inside the market approach methodology used in property valuations. However, Bernstrom (2014) indicated that market-based Valuation approaches do not always lead to increased financial performance. According to the findings of the research, it is essential to collect comparable and current data when employing the market strategy; yet, this information might be challenging to locate. In particular, it is often a lot harder for private firms to get trustworthy comparable data since it is not as easily accessible as it is for government agencies. The market approach presents a variety of challenges, one of which is related to the quantity of identical businesses operating inside the market. It is possible to have a tough time locating a significant number of firms that are similar to the one being researched. It is possible that there is a lack of data in this situation, making it impossible to use the market strategy.

4.12Hypothesis Testing and Interpretation of the Findings

The first objective of the study sought to test for the following hypothesis;

H_{01}:*There was no effect of asset-based valuation approach on the financial performance of real estate investments in the Western region, Kenya.*

Basing on the results indicated in table 4.17, β= 0.342, *p=0.019<0.05*, hence for every unit increase in the predictor variable of asset-based valuation approaches, the predicted variable (return on investment) experiences an increase of 0.342, p = 0.019. This finding shows that of asset-based valuation approaches significantly explains changes in ROIof real estate investments by 0.342 units. The study also established that on its own, asset-based approaches explained 34.3% of variance in financial performance of real estate investments. This result reveals that as capital growth potential of a particular real estate project and returns expectation increases, return on investment also increases.

The findings are consistent with the results of Ankobiah (2001) who indicated that asset appraisal can result to effective management and deployment of existing assets to increased availability or cash flow for daily operations of the port, cash reserved for replacement of outdated equipment and also foster foreign exchange earned which contributed to the improvement of both BOP and GNP in the economy. Similar results were obtained by Jenkins and Kane (2006) who demonstrated that for privately held firms' asset-based valuation approaches result to increase in financial performance. Also, Hašková, Hejda and Brabenec (2020) as well as Conradie and Lamprecht (2021) found out thatasset-based valuation approaches increase financial performance. However, Schulz (2013) as well as Ionescu, Toma and Founanou (2018) found that asset-based valuation does not always result to improvement in financial performance.

H₀₂:There was no effect of Income Approach to the valuation on the financial performance of real estate investments in the Western region, Kenya.

Basing on the results indicated in table 4.17, β= -0.631, *p=0.000<0.01*, hence for every unit increase in the predictor variable of market-based valuation approaches, the predicted variable (return on investment) experiences a decrease of 0.631 units.The second null hypothesis was rejected. The significant negative effect implies that income-based approaches have results to decrease on the return on investments. The study also established that on its own, income-based approaches accounted for 12.1% of variance in financial performance of real estate investments. Existing income valuation approaches have caused return on investment to decrease when other valuation approaches (Asset and Market based approaches) are controlled in the model.Increase in the utilization of

Income estimates is based on actual leases and historical performance reduces return on investments. Further, chosen cap rate that are fully supported by comparable sales data, and makes sense in the market do not results to increase in return on investments.

The conclusion obtained by Almabekova, Kuzmich, and Antosik (2018), who studied the income approach to firm valuation from a Russian perspective, is at odds with these findings. The study's results lend credence to the idea that the income technique is the only way to calculate a company's worth since it factors in the ever-changing nature of a business. This technique allows investors to compare current expenses with projected future profits; it also accounts for when those profits will be received and the standard risks associated with the business's industry. Further, Ilsjan and Kask, (2005) also revealed that the appraisal for purposes of accounting was relevant for main cities in Estonia. The results suggested that valuers acted arrogantly, with an elevated sense of self-worth that was not supported by the data.

H_{03}:There was no effect of Market Approach to the valuation on the financial performance of real estate investments in the Western region, Kenya.

Basing on the results indicated in table 4.17, β= 1.426, *p=0.00<0.01*, hence for every unit increase in the predictor variable of market-based valuation approaches, the predicted variable (return on investment) experiences an increase of 1.426 units.The third null hypothesis was rejected.Market-based strategies alone accounted for 57.2% of the difference in financial success of real estate investments, the survey also found. The use of market multiples based on a set of comparable, primary basis transactions, expert adjustments for any material differences between the comparable transactions and the subject asset, and the incorporation of credit risk, incremental credit risk adjustments in traded market prices were all found to be positively correlated with improved financial performance among real estate investments.

Market-based valuation procedures, the study found, may significantly affect a business's bottom line. Results from the research conducted by Tajani, Morano, Salvo, and De Ruggiero (2019) to develop a new model that can be included into market approach techniques for the valuation of assets are consistent with the model's predictions. The solution, the market value of the subject property, and the implicit prices of the various

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factors affecting it are all calculated using goal programming techniques, which have been shown to be more accurate from a mathematical and empirical standpoint, and thus are incorporated into the proposed model. The findings demonstrate that the created appraisal model is highly compatible with the anticipated empirical facts, has a strong valuation performance, and can overcome the application restrictions of traditional market approach approaches.

However, Bernstrom (2014) indicated that market-based Valuation approaches do not always lead to increased financial performance. According to the findings of the research, it is essential to collect comparable and current data when employing the market strategy; yet, this information might be challenging to locate. In particular, it is often a lot harder for private firms to get trustworthy comparable data since it is not as easily accessible as it is for government agencies. The market approach presents a variety of challenges, one of which is related to the quantity of identical businesses operating inside the market. It is possible to have a tough time locating a significant number of firms that are similar to the one being researched. It is possible that there is a lack of data in this situation, making it impossible to use the market strategy.

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CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter catalogues key findings revealed by the study through data analysis, conclusions, recommendations and suggestions for future researchers.

5.1 Summary of the Findings

Thestudyunearthed evidence through data analysissupportingthe fact that asset valuation approaches had significant effect on financial performance of real estate investments in the Western region, Kenya. Breaking down the analysis to keyfindings,

Concerning the first objective, the research revealed that asset-based valuation had a statistically significant association with financial performance. This demonstrated, in a nutshell, that the degree to which the Returns from Developing a Real Estate Project Motivates Investment is considerably significant. Whether an investor decides to buy into a residential or commercial real estate project depends on whether or not the project has the capacity to be run. The potential for capital growth associated with a specific real estate project is a factor that influences buying decisions regarding investment projects. This was further shown in the regression analysis, which showed that asset-based valuation strongly explained the variance in the financial performance of real estate investments in the western area. Therefore, the initial null hypothesis is not supported by the data.

Regarding the secondary goal, the results showed that income-based approaches had a statistically significant association with financial performance, demonstrating that there was a greater improvement on financial performance when income estimates were based on actual leases and historical performance and when expense growth assumptions were in line with historical inflation trends and made sense relative to the income growth assumptions. This was further shown by regression analysis, which found that income-based value strongly explained variance in financial success of western area real estate investments. Thus, the second null hypothesis was ejected.

Lastly, the results of market based approaches and financial performance effectively indicate clearly that market based approaches was significantly associated with financial performance. This was successfully shown by professionals making adjustments to

account for any major variations between the similar transactions and the subject asset. Additionally, prices in traded markets often contain credit risk, additional credit risk, as well as modifications. Results from the study's regression analysis backed up the correlational findings, demonstrating their significance.

5.2 Conclusion

Thestudyattests that asset based approacheswillmostcertainly affect financial performance. Therefore, it was determined that asset, market, and income-based techniques alone had no bearing on financial success. However, if all of the above were present in increasing, there was a great effect on financial performance.

5.3 Recommendations

The asset-based valuation method calculates a company's start-up costs as the current market value of its assets minus its current liabilities. These results suggest that asset-based valuation methods should include the geographical location of the investment project in addition to the difference between the fair market value of an organization's assets and liabilities.

Besides the cash flows the firm has had, has now, or is projected to have in the future, the likelihood that it will not generate the expected rate of return is taken into account when determining the value of a corporation. The research found that actual leases and historical performance should provide the basis for pro forma income predictions, while historical performance and knowledge of any existing vendor contracts, property tax rates, and utility bills should constitute the basis for pro forma spending projections. In conclusion, the research suggested that revenue projections should be derived on real leases and past performance data.

In conclusion, the research suggested that valuators exercise extreme care whenever they used a market strategy to determine the value of a company, regardless of whether it was a main or secondary method. The fact that price is not always a reliable measure of worth is one of the most significant problems with the market-based approach. Uneven bargaining abilities, disparities in the knowledge that is accessible, the need to act, payment arrangements, and financial strengths may all have an effect on price.

5.4 Limitations of the Study

After coming to a conclusion on the aforementioned findings, the study goes on to describe some of the difficulties that were encountered. The responses cannot be verified because the survey was open to everyone, and some individuals considered it confidential and did not give a prompt response because they were concerned that it would reveal their bank account and other financial information. Another constraint was that the respondents were given such little time that many of them were unable to finish the questionnaire in its entirety and send it in for collection, which resulted in several questions being unanswered.

5.5 Suggestions for Further Studies

The following suggestions are made for further studies.

The study focused asset valuation approaches which were limited to asset based, income based and market based approaches. Further studies should consider other asset valuation approaches which were not considered in this study.

Since the current research utilized both primary and secondary sources of information, it is recommended to other academics that they carry out studies that are analogous to this one utilizing methodologies aside from panel designs. Some of these methodologies include pure time series and even pure cross sectional surveys.

Research should be planned with the goal of reproducing the findings of this study within the broader context of Kenya, particularly the Nairobi metropolitan area. When constructing asset valuation methodologies for real estate investments, industry participants and policy makers will find it instructive to consider how predictor factors are expected to interact with the dependent variable in bivariate and multivariate analyses.

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Appendix 1: Study Questionnaire

Survey on effect of asset valuation approaches on financial performance on real estate investments in western Kenya region. The aim of this survey is to investigate the impact that different asset valuation methods have on the levels of financial success achieved by real estate investments in the western area of Kenya. Data collected will remain confidential and be used only for academic purposes. The completion of this questionnaire in an impartial manner is respectfully required of you.

Instructions: You are under no obligation to take part in this survey in any way, shape, or form, and you are free to make that decision at any point while you are in the process of filling out the questionnaire. Participation in this survey is requested only from individuals who are at least 18 years old, and completion of the questionnaire indicates that an individual has consented to both participation in this survey as well as publication of the results of this research, with the understanding that anonymity will be maintained. The completion of this survey should take no more than twenty minutes.

Section A: Demographics

1. Name of Business (Optional)_____
2. Nature of Business_____
3. What is your position?
   ☐ Manager
   ☐ Owner
4. What is the total number of employees in your business? _____(persons)

5. Date of inception (Range of years)

Date of inception (Range of years)	10 – 14	15 – 19	20 – 24	25+

6. Demographic profile

Level of Education	Not schooled ☐	Primary Level ☐	Secondary ☐	College ☐	University ☐
Gender	Male ☐	☐ Female			
Experience	1-3 YRS	3-6 YRS	6-10 YRS	10+ YRS	
Age	18-23	24-29	30-39	40-49	50 +

SECTION B: ASSET BASED VALUATION PRACTICES

To what extent do you agree with the following statements with regards to Asset Based Valuation Practices? Tick as appropriate where: 1-Strongly disagree, 2-Disagree, 3-Not certain, 4-Agree, 5-Strongly agree

S/N	Asset Based Valuation Approaches in practice	1	2	3	4	5
1	Taking into account the price of development and how it affects investment policy					
2	Your investment group's development plans are subject to change depending on the location of the investment project.					
3	The degree to which anticipated profits from the construction of a real estate project encourage financial commitments.					
4	Consideration of the riskiness of the investment					
5	The potential for increased value of a given real estate project is a factor that is considered while making purchasing choices for investment projects.					
6	Your ability to manage the property should be a primary consideration when deciding whether to put your money into a residential or commercial real estate investment.					
7	The strategy of investing in projects that are already up and running has had a significant impact on the amount of money brought in.					
8	The price of a real estate project plays a role in the financial considerations that go into your investment budgets.					
9	When the book value of a business's liabilities is subtracted from the book value of the firm's assets, the result is the owners' equity for the company.					
10	The calculation is based on the disparity between the assets of the company and the sum total of its liabilities at the current fair market value.					

SECTION C: INCOME BASED VALUATION PRACTICES

To what extent do you agree with the following statements with regards to Income Approach Practices? Tick as appropriate where: 1-Strongly disagree, 2-Disagree, 3-Not certain, 4-Agree, 5-Strongly agree

S/N	Income Based Valuation Approaches in practice	1	2	3	4	5
1	Estimates of income are derived from the actual leases and performance data from the past.					

2	The assumptions about the rate of income growth and lease renewal are modest, in line with current market trends, and backed by statistics.					
3	The past performance of the business should be supplemented with an understanding of the current vendor contracts, property tax rates, and utility bills to determine the pro forma expenditures.					
4	The assumptions on the rate of increase in expenses are consistent with the historical patterns of inflation and make sense in comparison to the income growth assumptions.					
5	The selected cap rate is completely supported by statistics on comparable sales, and it makes sense in the context of the market.					
6	These vacancy assumptions are consistent with both past performance and the most recent developments in the market.					
7	The capitalization rate is then applied to the established level of net operating income. Typical one-time expenditures such as lease termination fees and tax advantages are not included in the price.					
8	Investors get compensation that is commensurate with the level of risk that is connected with the property.					
9	A suitable rate of capitalization is applied to the expected future benefits before they are capitalized.					
10	The only kind of profits that need to be evaluated are different kinds of cash flow, such as operational cash flow, cash flow after taxes, or discretionary cash flow.					

SECTION D: MARKET VALUATION PRACTICES

To what extent do you agree with the following statements with regards to Market Valuation Practices? Tick as appropriate where: 1-Strongly disagree, 2-Disagree, 3-Not certain, 4-Agree, 5-Strongly agree

S/N	Market Valuation Approaches in practice	1	2	3	4	5
1	The market technique gives an indicator of worth by comparing the item in question to other assets that are either identical to it or comparable to it and for which pricing information is readily accessible.					
2	Market proof of transactions involving similar assets is sometimes difficult to come by due to the diverse character of many assets.					
3	When using information from comparable markets that does not belong to the same or nearly identical asset, there must be a legitimate basis for comparison with and reliance upon similar assets in the market approach.					
4	The market method often makes use of market multiples that are obtained from a group of comparable. It's possible that the multiples					

	will be in a range, with a different multiple for each comparative.					
5	The similar transaction approach is able to make use of a wide range of distinct comparable evidence, which are also referred to as units of comparison and serve as the comparison's foundation.					
6	It is strongly recommended that the market method be used as the main foundation for any value.					
7	Adjustments should be made by a professional for any significant variations that exist between the subject asset and the similar transactions.					
8	As a result of the fact that prices in traded markets would often integrate credit risk, additional credit risk, and modifications may not be necessary.					
9	Reference is made to fairly similar guideline firms for whose transaction values are available, and these companies' values are used to calculate the worth of a company.					
10.	The transaction multiples that were used in this particular instance are the ones that were suggested in the earlier deals that included the subject firm itself.					

Return on Investment Data (ROI)

YEARS	FIRMS									
	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6	Firm 7	Firm 8	Firm 9	Firm …50
1										
2										
3										
4										
5										

Return on Asset Data (ROA)

YEARS	FIRMS									
	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6	Firm 7	Firm 8	Firm 9	Firm …50
1										
2										
3										
4										
5										

Appendix II: FACTOR LOADING

	Component		
Rotated Component Matrix[a]	1	2	3
7.1 An examination of the costs associated with development and the impact they have on investment policy	.757		
7.2 The geographical location of the investment project has an effect on the development techniques your investment group employs.	.877		
7.3 The degree to which anticipated profits from the construction of a real estate project are a primary driver of investment	.357	.694	.050
7.4 Taking into account the level of risk associated with the investment	.153	.703	.190
7.5 The potential for appreciation in value of a certain real estate project is an important consideration in the purchasing choices of investment projects.	.214	-.061	.777
7.6 Your ability to manage the real estate project should be taken into consideration when deciding whether to participate in a residential or commercial real estate venture.	.225	-.638	.299
7.7 The decision to prioritize financial investments in ongoing projects has had a significant impact on the level of income generated.	.760	.128	.158
7.8 Your financial choices about your investment budgets are impacted by the price of the real estate project.	.617	.140	.202
7.9 Your financial selections about your investment budgets are impacted by the price of the real estate project.	.286	.709	.164
7.9 When the book value of a company's assets is subtracted from its book value of liabilities, the resulting number is the amount of equity owned by the company's shareholders.	.643	.362	-.234
7.10 It is determined by deducting the company's fair market obligations from its fair market assets.	-.126	.203	.756
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

Rotated Component Matrix[a]

	Component		
	1	2	3
8.1 The projections of income are derived on the current leases and the previous results.	.711	-.002	.458
	.367	.166	.805
8.2 The assumptions made about the increase of income and the lease renewal rate are modest, in keeping with the tendencies of the market, and supported by facts.	.227	.005	.853
8.3 You should base your pro forma expenditures on previous performance in conjunction with an understanding of any current vendor contracts, property tax rates, and energy bills.	.643	.096	.334
8.4 The assumptions about the rate of increase in expenses are consistent with the historical patterns of inflation and make sense in comparison to the income growth assumptions.	.878	.081	.064
8.5 The selected rate of return on investment is completely supported by statistics on comparable sales and makes sense in the current market environment.	.612	.188	.121
8.7 The capitalization rate is then applied to the established level of net operating income. Typical one-time expenditures such as lease termination fees and tax advantages are not included in the price.	.430	.648	-.015
8.8 Investors get compensation that is commensurate with the level of risk that is connected with the property.	.055	.786	-.036
8.9 A suitable rate of capitalization is then applied to the expected future benefits in order to capitalize them.	-.175	.624	.447
8.10 The only kind of profits that need to be evaluated are different kinds of cash flow, such as operational cash flow, cash flow after taxes, or discretionary cash flow.	.187	.815	.116
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

Component Matrix[a]

	Component		
	1	2	3
9.1 The market technique gives an indicator of worth by comparing the item in question to other assets that are either identical to it or comparable to it in some way for which pricing information is readily accessible.	.807		
9.2 For many assets, the lack of corroborating market evidence of similar asset transactions is a consequence of the assets' inherent	.710		

diversity.			
9.3 The market method requires a fair foundation for comparison with and reliance upon comparable assets where the relevant market information does not pertain to the same or a substantially similar asset.	.599		
9.4 Market multiples created from a group of comparable are often used in the market approach. The multiples may be spread out across a broad range, with a unique multiple for each comparative.	.807	-.005	-.063
9.5 Different pieces of information, or units of comparison, might serve as the foundation for a comparison when using the comparable transaction approach.	.805	-.147	-.160
9.6 Any estimate of value should start with data from the market.	.762	-.148	.059
9.7 The subject asset should be readjusted by a professional to account for any discrepancies between the similar transactions.	.629	-.071	-.001
9.8 Adjustments may not be necessary if pricing in traded marketplaces already factor in credit risk, additional credit risk.	.479	.408	.614
9.9 A company's worth is estimated using the transaction prices of organizations that are both similar to and interchangeable with the one being valued.	-.286	.728	.311
9.10 Prior transactions involving the same firm were utilized to derive the appropriate transaction multiples to apply here.	.314	-.633	.562
Extraction Method: Principal Component Analysis.			
a. 3 components extracted.			

Appendix III: NACOSTI PERMIT

National Commission for Science, Technology and Innovation

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **341821**

Date of Issue: **28/July/2022**

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341821

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Appendix IV: PROPOSAL APPORVAL

MASENO UNIVERSITY
SCHOOL OF GRADUATE STUDIES
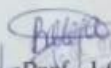
Office of the Dean

Our Ref: MSC/BE/00166/2018

Private Bag, MASENO, KENYA
Tel:(057)351 22/351008/351011
FAX: 254-057-351153/351221
Email: sgs@maseno.ac.ke

Date: 20th July , 2022

TO WHOM IT MAY CONCERN

RE: PROPOSAL APPROVAL FOR TRACY BIFWOLI FLORENCE — MSC/BE/00166/2018

The above named is registered in the programme of Master of Science in Finance in the School of Business and Economics, Maseno University. This is to confirm that her research proposal titled **"Effect of Asset Valuation Approaches on Financial Performance of Real Estate Investments in Western Kenya Region"** has been approved for conduct of research subject to obtaining all other permissions/clearances that may be required beforehand.

Prof. J.O. Agure
DEAN, SCHOOL OF GRADUATE STUDIES

JUL 2022

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Appendix V: Map of Study Area