Indirect investment and financial performance of the real estate sector in Nairobi county Kenya

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ABSTRACT

The purpose of this study was to assess the effect of indirect investment on the performance of real estate in Nairobi County Kenya. The independent variables for indirect investment were: investment trusts, exchange-traded funds, commingled funds, and infrastructure funds. The dependent variable was the performance of real estate in Nairobi County Kenya. Secondary data was collected from the real estate's online sources and some from the company offices and analyzed using multiple regression analysis. Both descriptive statistics and inferential statistics were determined. The study was only able to collect secondary data from 45 real estate companies out of the target population of 69 registered by KPDA in 2015 as it was hard to get data of the rest either from online sources or from the company offices. With the aid of STATA 12.0 software and Excel software, quantitative results were tabulated and presented in the form of charts, bar graphs, and narratives. The study found an existing relationship between the performance of the real estate sector and the Investment Trust Fund, the Exchange Trust Fund, the Commingled Fund, Infrastructure Fund. The study concludes that most of the coefficients were significant. The study also concludes that there is a relationship between the performance of the real estate sector and the Investment Trust Fund, Exchange Trust Fund, Commingled Fund, Infrastructure Fund when these components are considered together, they affect Performance.

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Introduction

Real estate can be used describe to agreements and documents which define property owners as investors (Smith, 2012). Comparing the advantages and disadvantages of real estate investments has led to new methods of making investments. Real estate assets can be acquired either by indirect or direct investing. The indirect investment existence is not unusual, in the US capital market has traded in real estate securities from 1960. Recently the function of the estate assets which are public in nature have become more accessible to small and medium size investors as compared to the past due increase in asset securitization. We can attest of this by hugely increasing market capitalization and increased number of actors on the market (Smith, 2012).

Real estate as an asset class has become increasingly essential for funds over the decades. Indirect investing also claims value gained by direct investing as they aid investors to release their wealth from professional managers through diversification as required by real estate (Richter et al., 2011). Securitization is the process whereby we transfer an asset that is generating cash into a more liquid form and trade it in a publicly traded security market. Asset stability and steadiness in producing cash flow can have potential for securitization. We can divide public real estate investments into debt securities and equity-based securities (Wahome et al, 2015). From this research project perspective, we are considering different types of conglomerations and syndications as irrelevant since they are not usually traded in the public. Most real estate companies focus on long-term property investments at the expense of direct real estate investments because of steady cash flow creation and increased value (Narula, et al. 2012). Choosing from a variety

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of investments ranging from residential, commercial and other sectors of real estate investment is among the major problems real estate is facing. It's the right of Investors to invest either in direct or indirect investments such as collective equity investment, property company shares and debt instruments (Hamelink et al, 2000) Prospective investors should make choices between direct and indirect investment media. Comparative assessment becomes significant when considering the increasing need to evolve judicious investment decisions and the need to protect investors' investment against the ravages of risk. As Maalim (2014) notes, indirect investment systems in Kenya were first set up after independence in 1963. There was minimal supervision of the industry in these nascent stages, except for cases of taxation by KRA. Until 1997, there was minimal to no regulations in Kenya. The Income Tax Act and the Trustees Act stipulated a few regulations that governed the industry but there were no specifications on investments with the exception of the one that exempted the registered schemes from withholding tax on investment income.

This study aims to assess the effect of indirect investment on the performance of real estate in Nairobi County Kenya. Multiple regression analysis has been conducted. The independent variables for indirect investment were: investment trusts, exchange traded funds, commingled funds and infrastructure funds. The dependent variable was performance of real estate in Nairobi County Kenya. Secondary data was collected from the real estate's online sources and some from the company offices and analyzed using multiple regression analysis. Both descriptive statistics and inferential statistics were determined. The study collected secondary data from 45 real estate companies out of target population of 69 registered by KPDA as at 2015. With the aid of STATA 12.0 software and Excel software, quantitative results were tabulated and presented in the form of charts, bar graphs, and narratives. This study continues with literature review, research methodology, implications and concludes with future directions.

Literature review

Theoretical Review

This section will highlight the empirical and theoretical literature reviews on performance of real estate such as; Modern portfolio theory, Efficient market hypothesis and The Capital Asset Pricing theory.

Efficient Market Hypothesis (EMH) Theory

This Theory was developed in 1965 by Fama Eugene. He argued that in the stock market stock always bought and sold at their fair value. It is therefore very hard for any investor to claim they purchased undervalued stocks or inflate the price of stocks when selling. Being one of the theories in financial economics it calls for asset prices to fully reflect all information provided (Chen et al. 2010). The EMH assumed perfect flow of relevant information among all investors on the dynamics of the REIT industry. This study is therefore geared towards determining expected correlation between each of the study variable and performance of REIT sector. This theory predicts that profit-maximizing behavior of investors is likely to be influenced by the changes in macroeconomic factors, hence influencing performance (Harel et al, 2011).

Modern Portfolio Theory

In 1952 Henry Markowitz developed this theory. Investors in constructing their portfolios concentrated on evaluating the rewards and risks of individual securities the way back prior to the development of this theory by Markowitz's. The investors used to analyze the available securities considering those that were highly likely to be profitable with the most least risk as possible and then formulating a portfolio using them (Mangram, 2013). The assumption of highly efficient portfolio and the CML was as result of the work of Tobin. Portfolio on the CML are able to perform better than portfolio on the EF through the leverage. In a perfect market investor can mitigate risks associated with their investments by creating an efficient portfolio of investments without reducing their returns through the process of diversification. This explanation can contribute to the field of finance. The study borrows from the portfolio theory as it advocates for reduction of risks of investors as it increases their returns (Buttall, 2010).

The Capital Asset Pricing Model

Harry Markowitz developed this model in 1952. It was later adapted and developed renowned economists such as Ayadi, Ajibole, Williams and Hyman (2014) and many others. The model points to the birth of APT theory. The model establishes the relationship between expected return and risky (Gordon, 2001). The model helps organizations to evaluate how managed portfolios are performing and organizations' cost of capital estimates (Goslins and Petri, 1992). The price of an asset can be said to be correct if the price estimate is the same as the present value of discounted future cashflows. We can conclude that an asset is undervalued if CAPM valuation is lower than the estimated price and vice versa (Messer & Yormark, 2009). Assuming the applications of the CAPM model we are able to test the implications of indirect investments on performance of real estate sector.

Empirical Review

Infrastructure funds and financial performance of Real estate

In Nigeria, Abdullahi et al. (2015) conducted a study on effect of infrastructure fund on SMEs. The findings indicate that finance and infrastructure fund significantly affected performance of SMEs in Nigeria. Suggesting dire need for finance, infrastructure, and training to be given adequate concentration as they serve as the engine of boosting performance. The government should develop policy framework to allow SMEs to easily access financing. Infrastructure funds which are growth-orientated cannot provide stable

income in the short term. Stapled securities cannot be separately bought or sold. Related companies carry out the fund's management functions as the fund holds the portfolio of assets. Stapled securities investments can expose investors to tax implications (Orr, 2007).

Exchange Traded Funds and Financial performance of Real estate

Itzhak, Franzoni and Moussawi (2017) conducted a study on Exchange-Trade funds and observed that, ETFs have become most popular investment vehicles that cannot be ignored by professional and retail investors because of the low transaction costs. The study also found that EFTs market share exceeded total market capitalization traded on US exchanges by 10%. Based on the overall trading volume this represented more than 30% representation. ETFs took market share from traditional investment vehicles like index futures and mutual funds leading to revolutionization of the asset management industry. This is an investment fund like stocks which is bought and sold at the stock exchange market. ETFs efficient when it comes to efficiency of tax and costs making them appealing as investments. ETF distributors enter sign contracts with established brokers who deals with EFTs. Trading with this broker directly help them to overlook persons who are not authorized to trade. They only trade in EFTs by creating large blocks of units of ETF shares (Hoffman, 2009).

Commingled Funds and Financial performance of Real estate

The benefits of commingled funds are that they have lower operating costs and legal expenses. When the operating cost is low it means net operating profit of an organization will increase. Even though the gross performance of commingled fund and mutual funds seems to be equal, the commingled fund will be advantageous when it comes to net performance because of the low operating costs as comparable to mutual fund. This factor makes it hard for outside investors to track the interest income, fund's capital gains and dividend. Unlike mutual fund where this information is readily available (Gohar et al, 2011). A commingled fund refers to a fund that exists as a result of blending together assets from several accounts. The investors from this fund benefit from economies of scale which lowering cost of trading per dollar of the investment, diversifying and managing money professionally. We can experience Commingling problems when we mingle personal funds with pooled funds. When a person given responsibility to take care of real estate investment funds other than his or her own decides to mix investment money with that of others is as well termed as commingling funds. Commingling is essential in reducing the costs of managing constituent accounts separately (Ghosh, 2015).

Investment funds and Financial performance of Real estate

According to Ghosh (2015), an investment trust is a limited company whose main objective is to invest the funds of shareholders trading them like any of the public company. This companies are constituted in the form of public limited company's REIT. They either own or operate or finance real estates that are capable of generating income (Ayadi et al., 2014). Mungai and Elly (2017) conducted a study on how alternative Investments influenced performance of Pension Funds. The study found that, most pension schemes had the largest allocation in fixed government, income, securities and Quoted equity. The R-square test indicated that 10.6% of the variations in the return on investments were due to the asset classes weights indicating that they are one among many factors which contribute to the returns of the pension funds.

Research Methodology

The research design is defined as a layout designed by researchers to manage collection of data and analyzing it to attain the study objectives (Mathoko et al., 2007). This descriptive design was appropriate because it enabled the study to do a descriptive analysis of the relationship between indirect investments and financial performance or real estate firms in Nairobi County Kenya. The advantages of this study design are that it is simple and understandable as stated by Kothari (2004). Zikmund et al. (2011) indicated that, the study population is all the factors or individuals over which the study conclusions are to be generalized. The study targeted the 69 real estate companies listed by Kenya Property Developers Association (KPDA) in Nairobi by the year 2015. The study applied census approach of the Real estate companies registered by KPDA as at 2015, adding up to sixty-nine. This whole population was therefore adopted as the sample for the study. The study used secondary data collection sheet to collect data from online sources and company offices. Multiple regression model, descriptive statistics, correlation analysis and STATA 12.0 statistical software were used to evaluate data collected.

Tables, charts and figures were used in presenting the findings. The study variables were modeled using the following regression equations:

$$\gamma = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Whereby:

γ = Financial Performance

α = Constant

$\beta_1 - \beta_4$ = Independent variable coefficients

X_1 = Investment Trusts

X_2 = Exchange Trust Fund

X_3 = Commingled Funds

X_4 = Infrastructure Funds

ε =Error term

This study used Shapiro-Wilk test to test for normality as it is usefulness when it comes to comparing two samples to see if they arise from the same distribution. The Dubin Watson's Autocorrelation test was computed to test for serial correlation's absence or presence. In reference to Campbell et al. (1997), autocorrelation describe the correlation between values of variables under the study, which rely on some form of the random walk hypothesis. If the Durbin-Watson test statistic values are from 1.5 to 2.5 is assumed to be normal (Field, 2013). Since time series data variables are assumed to be stationary there was need to test the issue of spurious regression using Fisher-type test. According to Gujarati (2003), we are likely to get spurious results if we estimate models without taking into consideration that time series variable is independent and identically distributed and possesses a unit root.

Data Analysis, Presentation, and Interpretation

The chapter captures study findings, interpretation, presentation of results from the research.

Reliability

The table contains details of reliability Test:

Table 1: Reliability Statistics

Test scale = mean(unstandardized items)	
Average inter item covariance:	13.95367
Number of items in the scale:	4
Scale reliability coefficient:	0.8661

Source: Survey Data (2019)

The overall Alpha value of 0.8661 derived from the result was reliable since as it was greater than the minimum threshold of 0.7.

Diagnostic Tests

Shapiro-Wilk Normality Test

Table 2: Tests of Normality

Variable	Obs	W	V	Z	Prob>z
Investment Trust Fund	50	0.95371	2.177	1.659	0.06856
Exchange Trust Fund	50	0.97057	1.534	0.808	0.20944
Commingled Fund	50	0.95280	3.718	2.309	0.14448
Infrastructure Fund	50	0.95586	2.176	1.657	0.06968

Source: Survey Data (2019)

The Shapiro-Wilk W test reveals a large probability of (0.06856, 0.20944, 0.14448, 0.06968)>0.05 suggesting that the scores are compatible with a Normal Distribution. Null hypothesis is accepted since p>0.05 (Shapiro and Wilk, 1965)

Autocorrelation Test

Table 3: Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.5116a	.2487	.1820	2.4142	1.846

Source: Survey Data (2019)

The value d = 1.896 is greater than 1.5 and less than 2.5 which is between the two critical values. Therefore, no linear auto-correlation in our data.

Panel Unit Root Test

The Fisher-type test output is as shown below:

Table 4: Panel Unit Test

		Statistic	p-value
Inverse chi-squared (20)	P	52.0028	0.0001
Inverse normal	Z	-4.1974	0.0001
Inverse logit t (54)	L*	-4.2827	0.0001
Modified inv. chi-squared	Pm	5.0601	0.0001

P statistic requires number of panels to be finite.

Other statistics are suitable for finite or infinite number of panels.

xtset ID T

panel variable: ID (strongly balanced)

time variable: T, 2013 to 2017

delta: 1 unit

xtunitroot fisher Trading, dfuller lags (1)

Fisher-type unit-root test for Trading

Based on augmented Dickey-Fuller tests

Ho: All panels contain unit roots Number of panels = 10

Ha: At least one panel is stationary Number of periods = 5

AR parameter: Panel-specific Asymptotic: T -> Infinity

Panel means: Included

Time trend: Not included

Drift term: Not included ADF regressions: 0 lags

Source: Survey Data (2019)

Since $P < 0.05$ we can confirm that the panel does not possess unit root under given test conditions.

Descriptive Statistics

Descriptive statistics is a summary statistic that summarizes features of information that is collected. It aims to summarize a sample. The output is as shown below:

Table 5: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Performance	50	6.76	2.66925	2	14
Investment Trust Fund	50	17.06	4.970977	5	25
Exchange Trust Fund	50	10.7	6.017831	4	20
Commingled Fund	50	10.4	4.115674	5	16
Infrastructure Fund	50	10.54	3.529526	6	16

Source: Survey Data (2019)

We can observe that the dependent variable 1 performance has a mean of 6.76 and varies from 2 to 14 which means that on average real estate sector companies in Nairobi for the five-year period had positive returns. Standard deviation of the variables Performance, Investment Trust Fund, Exchange Trust Fund, Commingled Fund and Infrastructure Fund are 2.6693, 4.9710, 6.0178, 4.1157 and 3.5295 respectively.

Inferential Statistics

The study adopted regression analysis, ANOVA and correlation analysis undertake the analysis in this section.

Correlation Analysis

Table 6: Correlation Matrix

	Performance	Investment Trust fund	Exchange Trust	Commingled Fund	Infrastructure Fund
Performance	1.0000				
Investment Trust Fund	0.0917	1.0000			
Exchange Trust Fund	-0.0218	0.7320	1.0000		
Commingled Fund	0.0159	0.4756	0.7861	1.0000	
Infrastructure Fund	0.0110	0.4227	0.7159	0.6887	1.0000

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

Source: Survey Data (2019)

The study found that Investment Trust Fund does not have a statistically significant effect on Performance of Real estate sector in Nairobi County at $P\text{-value}=0.0917 < 0.05$ with a negative relationship recorded with a correlation of -0.0218 . The relationship is significant at p value of $-0.0218 < 0.05$ which supported findings of Itzhak, Franzoni and Moussawi (2017) who observed that ETFs have emerged as one of the most popular investment agencies among professional and retail investors. There was a positive relationship between Commingled Fund and Performance of Real estate sector in Nairobi County with a correlation of 0.0159 which is significant at p value of $0.0159 < 0.05$. This assertion confirmed findings of Gohar, Ahmed and Niazi (2011), that commingled funds due to their low legal expenses and operational costs influence financial performance positively. There was a positive relationship between Infrastructure fund and Performance of Real estate sector in Nairobi County with a correlation of 0.0110 . The relationship is significant at p value of $0.0110 < 0.05$ which is in agreement with the study of Abdullahi et al (2015) who found that the performance of SMEs in Nigeria is significantly affected by finance, infrastructure fund, and training.

Regression Analysis

The effect of independent variables and dependent variable were determined using multiple regression analysis.

Table 7: Regression and Model Summary

Source	SS	Df	MS	Number of obs = 50
Model	86.8374118	4	21.7093529	F (4, 45) = 3.72
Residual	262.282588	45	5.82850196	Prob > F = 0.0106
Total	349.12	49	7.12489796	R-squared = 0.2487
				Adj R-squared = 0.1820
				Root MSE = 2.4142

Source: Survey Data (2019)

R-Squared measured variability of the statistical model. Hence the study found that there is a relationship between performance and Investment Trust Fund, Exchange Trust Fund, Commingled Fund, Infrastructure Fund when these components are considered together which explain 24.87% of changes in Performance. While the remaining 77.13% are due to other factors not identified in the study but affects Performance.

Table 8: ANOVA

Source	Partial SS	Df	MSS	F	Prob > F
Regression	86.8374118	4	21.7093529	3.72	0.0106 ^b
Residual	262.282588	45	5.82850196		
Total	349.12	49	7.12489796		

Source: Survey Data (2019)

The sum of squares is larger than residual hence affirming that most of the variation on financial Performance is accounted by our model. The Model was good for the study as we can affirm that from the F value of 3.72 which was significant at 5% level of confidence interval and $P = 0.0106 < 0.05$.

Table 9: Coefficient

Model	Coef	Std. Err.	T	P>t	[95% Conf Interval]
Investment Trust Fund	.1059119	.0741446	1.43	0.008	-.0434231 .2552469
Exchange Trust Fund	-.1460973	.0935753	-1.56	0.011	-.3345677 .042373
Commingled Fund	.0275853	.1008373	0.27	0.006	-.1755114 .230682
Infrastructure Fund	.1456187	.1035116	1.41	0.806	-.0628644 .3541017
_Cons	2.414677	1.268602	1.90	0.000	-.1404182 4.969772

significance level=0.05

Source: Survey Data (2019)

The regression equation below was established:

$$y = 2.4147 + .1059X_1 - .1461X_2 + .0276X_3 + .1456X_4 + \varepsilon$$

The regression equation above revealed that holding Investment Trust Fund, Exchange Trust Fund, Commingled Fund and Infrastructure Fund to a constant zero, performance of real estate in Nairobi County would be 2.4147, increasing in Investment Trust Fund, Commingled Fund and Infrastructure Fund by one unit each will increase performance by a factor of .1059, 0.0276 and .1456 respectively while increasing Exchange Trust Fund by one unit would lead to -.1461 decrease in performance.

Investment Trust Fund significantly impacted financial performance which is consistent with Mungai and Elly (2018) who found the alternative investments had effect on performance. The Exchange Trust Fund had a significant influence on financial performance which supported the studies of Itzhak, Franzoni and Moussawi (2017) observed that ETFs have emerged as one of the most popular investment agencies among professional and retail investors. Variable representing Commingled Fund had significant effect on financial performance of real estate sector in Nairobi. This assertion confirmed the findings of Gohar, Ahmed and Niazi, (2011). that commingled funds due to their low legal expenses and operational costs influence financial performance positively. The Infrastructure Fund insignificantly influenced financial performance of real estate sector in Nairobi County Kenya which did not conform to the findings of Abdullahi et al (2015) who concluded that finance, infrastructure fund, and training had significant impact on the performance of SMEs in Nigeria.

Findings

The study found there is a relationship between performance of real estate sector and Investment Trust Fund, Exchange Trust Fund, Commingled Fund, Infrastructure Fund when these components are considered together which explain 24.87% of changes in Performance. While the remaining 77.13% are due to other factors which have an influence on financial performance but are not identified in this research project.

The Study also revealed that holding Investment Trust Fund, Exchange Trust Fund, Commingled Fund and Infrastructure Fund to a constant zero, Nairobi County real estate sector Performance would be 2.4147, increasing Exchange Trust Fund would by a single unit would lead to -.1461 decrease in performance of real estate sector in Nairobi while increasing Investment Trust Fund, Commingled Fund and Infrastructure Fund by one unit each increases performance by a factor of .1059, 0.0276 and .1456 respectively.

The study also found that, most of the coefficients were significant and they portrayed an existence of a relationship between Performance and the variables. Investment Trust Fund was significant at 95% confidence level (p -value=0.0008). A Pearson correlation test done found positive relationship between investment Trust Fund and performance with a correlation of 0.0917. The study is consistent with the findings of Mungai and Elly (2018) who found that the regression coefficients yielded a positive relationship between this alternative asset classes and return on investments.

The commingled fund regression results indicated a statistically significant positive linear relationship on performance ($\beta = .02759$, p -value =.0006). A Pearson correlation test conducted found the relationship between commingled fund and performance of Real estate sector in Nairobi is positive with a coefficient of correlation of 0.0159. The findings are consistent with the study of Gohar, Ahmed and Niazi, (2011) who indicated the benefits of commingled funds are that they have lower operating costs and legal expenses. When the operating cost is low it means net operating profit of an organization will increase.

The Exchange Trust Fund had a positive linear relationship with a statistically significant impact financial performance of Real estate sector in Nairobi county Kenya ($\beta = -.146097$, p -value =0.011). A Pearson correlation test done found that performance was significantly affected by Exchange Trust Fund which was statistically significant at p -value=-0.0218<0.05. This findings supported Itzhak, Franzoni and Moussawi (2017) who observed that ETFs have emerged as one of the most popular investment agencies among professional and retail investors because of their low transaction costs and high liquidity hence enhancing performance.

The study results indicated that Infrastructure Fund had a statistically insignificant impact on performance ($\beta = .1456187$, p -value =0.806). The study also confirmed that there was a positive linear relationship between Infrastructure Fund and performance with a coefficient correlation of 0.0110. The findings differed with Abdullahi et al (2015) who concluded that finance and infrastructure fund had significant effect on the performance of SMEs in Nigeria.

Conclusion

The study found that there is a relationship between performance and the Investment Trust Fund, Exchange Trust Fund, Commingled Fund, Infrastructure Fund when these components are considered together which explain changes in Performance. While the remaining percentage is due to other factors not recorded in this research but impacts Performance. The study also found that, most of the coefficients were significant and they portrayed an existing relationship between Performance and indirect investments variables. Based on the results financial performance was significantly influenced by Investment Trust Fund, Commingled Trust fund, investment fund and Infrastructure fund. Given the low regulation on Commingled funds will lower legal expenses and operating costs. When the operating cost is low it means net operating profit of an organization will increase. Even though the gross performance of commingled fund and mutual funds seems to be equal, the commingled fund will be more beneficial when it comes to net performance because of the low operating costs as comparable to mutual fund. Commingled funds are disadvantaged due to lack of ticker symbols and are not publicly conducting business. The Study also revealed that increasing Commingled Fund by one unit would increase financial performance.

The study concludes that there is an existing relationship between Performance of the real estate sector and the tested variables and that most of the coefficients were significant. The study also concludes that there is a relationship between performance of real estate sector and the Investment Trust Fund, Exchange Trust Fund, Commingled Fund, Infrastructure Fund when these components are

considered together, they affect Performance. The study further concluded that Real estate firms in Nairobi County use commingled funds financing and that their low legal expenses and operational costs influence financial performance positively. Concluding further that over the past years, ETFs have emerged as one of the most popular investment agencies among professional and retail investors. Because of their low operating and transaction costs hence is enhancing performance. The Study also concluded that increasing Exchange Trust Fund by one unit would lead to a decrease in financial performance of real estate sector in Nairobi County.

The study recommends that all major programs for infrastructure funding should include methods that give priority to sustainability and resilience and encourage innovation as they serve as the basis of improved financial performance of real estate sector in Nairobi. The study further recommends shift of the implementation of infrastructure funding to support innovation and growth, and the adoption of technologies and new approaches while fostering financial and environmental sustainability, resilience and new economic growth and jobs.

The study recommends the real estate sectors in Kenya to consider using investment Trust fund in investing due to the low volatility of these funds and their low correlation with other asset classes making it an attractive asset class with institutional investors' portfolios. This will also go a long way in supporting the strategy of many investors that will invest in infrastructure fund in order to offset the risks associated with other asset classes.

It is the recommendation of the study that, Real estate sector in Nairobi and Kenya at large to invest in commingled fund given that combining different assets under a single fund allows those assets to be managed in a more efficient and cost-effective manner. Furthermore, commingled trust funds don't tend to come with hefty marketing expenses, because they target a narrower range of investors. This lowered cost has the benefit of increasing financial performance. The study further recommends real estate sector in Nairobi to invest in exchange-traded funds (ETFs) because of their low transaction costs and high liquidity hence enhancing performance.

Even though Majority of the studies have been conducted on (REITs) structure and performance there is need for further research on the issues related to corporate finance and financial market implications of Real Estate Investment Trusts in Kenya. It would be prudent to undertake Further studies on performance of EFTs in comparison with actively managed funds.

The focus of this study was on financial performance of real estate in Nairobi County Kenya. There is need to increase the scope of the study in future to cover real estate sector in Kenya mainly focusing on the influence of indirect investment on financial performance. This will go a long way in assessing how indirect investments have affected this real estate companies in Kenya since majority of them have existed for more than Ten years under different investments.

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References

- Abdullahi, M. S., Ghazali, P. L., Awang, Z., Mohd Tahir, I., Ali, M., & Salim, N. A. (2015). The effect of finance, infrastructure and training on the performance of small and medium scale enterprises (SMEs) in Nigeria. *International Journal of Business and Entrepreneurship*, 5(3), 421-452.
- Alshatti, S.A., (2015). The Effects of the Liquidity Management on Profitability in the Jordanian Commercial Banks. *International Journal of Business Management*, 10(1). 62-71.
- Ammon, S., (1998). Research Methodology. Washington D.C.: National academy Press, USA.
- Ayadi, O. F., Ajibolade, S., Williams, J., & Hyman, L. M. (2014). Transparency and foreign direct investment into Sub-Saharan Africa. *African Journal of Economic and Management Studies*. 5(2), 146-159. <https://doi.org/10.1108/AJEMS-09-2012-0058>
- Breusch, T.S., & Pagan A., (1980). The Lagrange Multiplier Test and its Applications to Model Specification in Economics. *Journal of review of economics studies*, 47(1),239-253.
- Buttall, A. E. (2010). Harry M. Markowitz on modern portfolio theory, the efficient frontier, and His Life's Work. *Journal of Financial Planning*, 23(5), 18.
- Campbell, J. Y., Campbell, J. J., Campbell, J. W., Lo, A. W., Lo, A. W., & MacKinlay, A. C. (1997). *The econometrics of financial markets*. princeton University press.
- Chakraborty, I. (2010). Capital structure in an emerging stock market: the case of India, *Research in International Business and Finance*, 24, 295-314
- Chen, Y., Ferson, W., & Peters, H. (2010). Measuring the timing ability and performance of bond mutual funds. *Journal of Financial Economics*, 98(1), 72-89.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. sage

- Gathogo, G. and Ragui, M. (2014). Capital structure of Kenyan companies: what determines What? *Revista de investigación de finanzas y contabilidad*, 5(5).
- Ge, Y. (2010). American commercial real estate financing and the effect on economy. *Shanghai Finance*.3, 60-62.
- Gharaibeh, O.M.A. (2015). The determinants of the capital structure: empirical evidence of Kuwait. *European Journal of Business, Economics and Accounting*, 3(6).
- Ghosh, P., Kale, J. R., & Panchapagesan, V. (2014). Do Indian business group owned mutual funds maximize value for their investors? *IIM Bangalore Research Paper*, (463).
- Gohar, R., Ahmed, S., & Niazi, U. (2011). Performance comparison of mutual funds in Pakistan. *African Journal of Business Management*, 5(14), 5583.
- Gordon, D. (2001). Weaving a modern plan for Canada's capital: Jacques Greber and the 1950 Plan for the National Capital Region. *Urban History Review/Revue d'histoire urbaine*, 29(2), 43-61.
- Goslings, J. H., & Petri, V. L. (1992). The role of real estate in efficient investment portfolios. *Journal of property valuation and investment*.
- Gujarati, D. N. (2003). Basic Econometrics. Fourth edition McGraw-Hill. New York.
- Hamelink, F., Hoesli, M., Lizieri, C., & MacGregor, B. D. (2000). Homogeneous commercial property market groupings and portfolio construction in the United Kingdom. *Environment and Planning A*, 32(2), 323-344.
- Harel, A., Harpaz, G., & Clark, F. J. (2011). Analysis of efficient markets. *Review of Quantitative Finance and Accounting*, 36(2), 287-296.
- Hoffman, M. E. (2009). What explains attitudes across US trade policies?. *Public Choice*, 138(3-4), 447-460.
- Itzhak B., Franzoni, F., & Moussawi, R. (2017). Exchange-traded funds. *Annual Review of Financial Economics*, 9(1), 169-189.
- Kamau, L. W. (2011). Factors Influencing Investment in the Real Estate Industry in Nairobi County, Kenya. *Unpublished Thesis Moi University*.
- Kayo, E.K. and Limura, H. (2010). Hierarchical determinants of capital structure, *Journal of Banking & Finance*, 35, 358-371.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Maalim, S. H. (2014). Comparison of performance between guaranteed and segregated pension funds. *Unpublished MA Economics Project, University of Nairobi*.
- Mangram, M. E. (2013). A simplified perspective of the Markowitz portfolio theory. *Global journal of business research*, 7(1), 59-70.
- Mathoko, J., Mathoko, F., and Mathoko, P. (2007), *Academic Proposal Writing*. Nakuru, Kenya: Amu Press.
- Modigliani, F. and Miller, M. H. (1958). The Cost of Capital, Corporate Finance and the Theory of Investment. *American Economic Review*, 48, 261-97.
- Modigliani, F. and Miller, M. H. (1963). The Cost of Capital, Corporate Finance and the Theory of Investment. *American Economic Review*, 48, 261-97.
- Mugenda and Mugenda, (2003). Research methods: first edition, published by ACTS, Nairobi, Kenya.
- Mugenda and Mugenda, (1999). Research methods: 1st edition, published by ACTS, Nairobi, Kenya.
- Muherjee, S. and Mahakud, J. (2010). Dynamic adjustment to target capital structure: evidence from Indian companies. *Journal of Advances in Management Research*, 7 (2), 250-266.
- Mungai, L. M., & Elly, D. (2018). The Effect of Alternative Investments on the Financial Performance of Pension Funds in Kenya. *African Development Finance Journal (ADFJ)*, 1(2).
- Narula, S. C., Wellington, J. F., & Lewis, S. A. (2012). Valuating residential real estate using parametric programming. *European journal of operational research*, 217(1), 120-128.
- Orr, R. J. (2007). The rise of infra funds. *Project Finance International—Global Infrastructure Report 2007*, 2-12.
- Oztekin, O. and Flannery, M. J. (2012). Institutional determinants of the capital structure regulation speed. *Journal of Financial Economics*, 103 (1), 88-112.
- Peil S.K (2005). Methodology and research design, fifth edition, Macmillan. Publishers, New York, United States.
- Richter, J., Thomas, M., & Füss, R. (2011). German real estate return distributions: Is there anything normal? *Journal of Real Estate Portfolio Management*, 17(2), 161-179.
- Ross, S.A., Westerfield, R.W., Jaffe, J. and Kakani, R.K. (2009). Business Finance, *Tata McGraw-Hill Edition 2009, 8th Edition*.
- Salame, A. K. and Iddirisu, M. (2011). An assessment of the static trade-off theory of capital structure using data from the Ghana stock market. *Journal of Management Policy and Practice*, 12 (6), 81-89.
- San, O. T. and Heng, T. B. (2011). Capital structure and corporate performance of Malaysian Building Industry *International Journal of Humanities and Social Sciences*, 1 (2), 28-36.
- Sekaran, U. (2011). *Research Methods for Business: A Skill Building Approach*. 5th Edition. Aggarwal printing press, Delhi, ISBN: 978-81-265-3131-8
- Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika*, 52(3/4), 591-611.
- Smith, H. E. (2012). Property as the Law of Things. *Harvard Law Review*, 125(7), 1691-1726.
- Tongkong, S. (2012). Key factors influencing the decision of the capital structure and its speed of adjustment of listed Thai real estate companies. *Proceia - Social and behavioral sciences*, 40, 716-720.

- Vanacker T.R. and Manigart S. (2010). Order verification and debt capacity considerations for high-growth companies seeking funding, *Small Business Economics*, 35, 53-69.
- Wahome, N.M, Memba, F. and Muturi, W. (2015). The effects of company size and risk in Decisions of the insurance industry capital structure in Kenya. *International journal of scientific publications and research*, 5(8).
- Yabs, A.K. (2014). The relationship between the capital structure and financial performance of real estate companies in Kenya. An unprecedented graduate study at the University of Nairobi.
- Zikmund, W., (2010). *Company research methods* eighth edition. *McGraw-Hill Publishers*. USA New York.

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