EFFECT OF FOREIGN DIRECT INVESTMENT ON THE FINANCIAL PERFORMANCE OF THE RENEWABLE ENERGY SECTOR IN RWANDA

Salvator MBARUSHIMANA & Dr. Patrick MULYUNGI, PhD

The Strategic JOURNAL of Business & Change MANAGEMENT
ISSN: 2312-9492 www.strategicjournals.com
Vol. 10, Iss.4, pp 310 – 325. October 21, 2023. www.strategicjournals.com, ©Strategic Journals

EFFECT OF FOREIGN DIRECT INVESTMENT ON THE FINANCIAL PERFORMANCE OF THE RENEWABLE ENERGY SECTOR IN RWANDA

[1] Mbarushimana, S., & [3] Mulyungi, P.

[1] Post Graduate Student, Jomo Kenyatta University of Agriculture and Technology, Rwanda
[2] Lecturer, Jomo Kenyatta University of Agriculture and Technology, Rwanda

Accepted: October 7, 2023

DOI: http://dx.doi.org/10.61426/sjbcm.v10i4.2752

ABSTRACT

Over the past two decades, Rwanda's economy has experienced significant growth in infrastructure development and policy improvements. This growth has been accompanied by an increase in foreign investment, with companies expanding their operations in the country. Foreign Direct Investment (FDI) is a critical area of interest for many developing countries, as it brings economic benefits to the host nation. In emerging economies, such as Rwanda, the renewable energy sector has played a critical role in driving economic growth. Despite the global property market experiencing a bubble, the renewable energy market has remained strong, with demand for middle to high-income housing remaining steady. This study focused on the effect of FDI on the financial performance of the energy sector in Rwanda, with MOBISOL Rwanda Ltd as the case study. The study examined how corporate governance elements, trade openness, market size, return on investment, exchange rate, and inflation affect the financial performance of the energy sector in Rwanda. The study utilized a descriptive research design to investigate the financial performance of the energy sector in Rwanda, with MOBISOL Rwanda Ltd as the case study. The target population consisted of 112 employees of MOBISOL, which has significant foreign ownership in Rwanda. The sample size was determined using stratified random sampling, and 88 respondents were selected for the study. Descriptive statistics were used to analyze the data, with the arithmetic mean and standard deviation used to analyze descriptive data. Additionally, inferential statistics were utilized to find correlations among the explanatory variables. Pearson's product moment correlation and stepwise regression were used to examine the relationship among variables. F-tests were used to test the hypotheses in the study. To ensure the validity of the statistical analysis, tests of statistical assumptions were conducted prior to data analysis. The study used SPSS Statistics Version 21.0 software to facilitate data analysis. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to analyze the data, while inferential statistics were conducted using Spearman rank correlation coefficient and multiple regression. The findings of the study were presented in tables, providing clear insights into the relationship between variables.

Key words: *Market size, financial Performance, Renewable energy, Rwanda*

CITATION: Mbarushimana, S., & Mulyungi, P. (2023). Effect of foreign direct investment on the financial performance of the renewable energy sector in Rwanda. *The Strategic Journal of Business & Change Management,* 10 (4), 310 – 325. http://dx.doi.org/10.61426/sjbcm.v10i4.2752.

INTRODUCTION

Over the last few decades, Foreign Direct Investment (FDI) has been a major source of investment capital for developing countries, and a significant factor in global finance due to the increasing globalization of capital markets. Many developing countries view FDI as a vital means of stimulating economic growth, which has led to the introduction of policies such as subsidies to foreign corporations and import duty exemptions to encourage the influx of FDI (Ezeanjeji & Ifebi, 2016).

FDI can take several forms, including horizontal foreign direct investment, which occurs when a company undertakes the same activities abroad as at home, vertical foreign direct investment, in which different levels of activities are relocated overseas, and conglomerate foreign direct investment, in which a company expands its operations overseas through both Greenfield and acquisition (O'Connor, 2013).

Foreign Direct Investment also differs in terms of its objectives, which can be resource-seeking, performance-seeking, or market-seeking (Spatz & Nunnenkamp, 2014). These different forms and objectives of FDI have significant implications for both the host country and the investing company.

The impact of Foreign Direct Investment (FDI) on the economy is still a subject of debate. Some studies suggest that the effects of FDI depend on the sector of the economy to which it is directed, while others attribute its impact to the linkages that exist between the global and local economies. Aykut & Sayek (2015) found that FDI in the manufacturing sector has a positive impact on the economy, while FDI in the primary or service sector has a negative impact. The study also indicated that FDI in the manufacturing sector brings in technology and expertise and makes use of local resources, whereas FDI in the primary sector is export-oriented and uses fewer local goods.

In the renewable energy sector, Anop (2010) identified GDP, infrastructure, and human capital as determinants of foreign investment in the sector. To attract foreign investment, governments invest heavily in infrastructure development, including transport networks and social services. This, in turn, leads to the growth of satellite towns, prompting businesses to move their operations to these areas. As the demand for commercial and residential properties increases, the renewable energy sector can capitalize on this opportunity and contribute to increased investment in the renewable energy sector and a rise in housing prices (He & Zhu, 2010).

In Sub-Saharan Africa, a big market has been visible as attracting FDI flows, even as inflation has discouraged FDI flows (Obwona, 2011). research in different African international locations know-how that trade openness play a wonderful position in attracting FDI (Aoki 2010; Busse, 2015). recent studies have started out to understand the significance of non-traditional factors along with globalization and governance (Dikova, 2011) specifically due to the fact FDI in growing nations is transferring from marketplace-in search of and aid-searching for which can be horizontal to extra vertical efficiency-looking for FDI (Campino, 2010). In these kinds of studies, the role of governance elements nonetheless remains in large part ignored specifically because of the dearth of pleasant information on corporate governance measures and signs. evaluation knowledge that corporate governance framework depends on the felony, tax, regulatory, and institutional environment in a rustic (IMF, 2011; UNCTAD, 2012). In 2012, FDI flows to growing economies exceeded the ones to evolved nations by using $ 142 billion amounting to $703 billion in 2012 from $ 735 billion in 2011 and representing fifty two percent of global FDI inflows. Asia and Latin the usa endured to be the exceptional vacation spot of FDI with $ 407 billion and $ 244 billion respectively, at the same time as FDI inflows to Africa slightly extended to $ 50 billion in 2012 from $ 48 billion in 2011 (National Bank of Rwanda, 2012).

Foreign Direct Investment flows to developing countries in Asia decreased by 7% to $407 billion in 2012. This decline was observed across all sub-

regions but was most significant in South Asia, where FDI inflows fell by 24%. However, China and Hong Kong (China) remained the second and third largest FDI recipients worldwide, while Singapore, India, and Indonesia were among the top 20. Labor-intensive manufacturing in lower-income countries like Cambodia, Myanmar, the Philippines, and Vietnam continued to attract FDI due to continued intra-regional restructuring.

In 2012, FDI inflows were partly driven by investments in the extractive sector in countries such as the Democratic Republic of the Congo, Mauritania, Mozambique, and Uganda. At the same time, there was an increase in FDI in consumer-oriented manufacturing and services, reflecting demographic changes.

The FDI landscape in Rwanda has been characterized by a significant concentration of investment in the mining sector, while the manufacturing sector has seen a higher number of investment projects but of lower value, accounting for only 41% of the total from 2003 to 2009 (UNCTAD, 2010). This raises questions about the extent to which FDI drives FDI inflows in Rwanda, as the picture varies depending on whether the analysis is based on investment values or investment cases (UNCTAD, 2010).

However, existing literature on the determinants of FDI has left gaps in addressing the growth of FDI inflows in Rwanda, especially in the energy sector, as it heavily relies on traditional determinants in empirical analysis. Therefore, this study aims to bridge this gap and explore the factors that influence FDI in Rwanda's energy sector.

Statement of the Problem

Rwanda has become an attractive destination for multinational corporations, especially in the renewable energy sector. This can be attributed to factors such as a growing middle class, highly educated population, improved infrastructure, and strategic location as the headquarters for many MNCs and organizations. As a result, the country has seen an increase in both public and private renewable energy projects, as well as more multinational corporations moving into the country (World Bank Doing Business Report, 2015).

However, despite its strong and diverse economy, Rwanda has struggled to attract significant levels of foreign direct investment (FDI) in the last decade. This has made it an interesting case for the development and testing of FDI theories, given its high level of governance risk and complex tax regime (UNCTAD, 2012). Despite being one of the strongest and most diverse economies in the East African Community (EAC), Rwanda has lagged behind in FDI growth compared to other EAC countries. Its FDI levels, as a percentage of GDP, have not surpassed either the developing countries average or the sub-Saharan Africa average. In the period from 2009-2013, Rwanda's FDI average was only 7.1%, compared to the developing countries average of 29.4% and the Africa average of 32% (UNCTAD, 2013; World Bank, 2013).

Foreign Direct Investment (FDI) is widely believed to have a positive impact on a country's economic growth. However, the success of FDI is contingent upon various factors, including but not limited to the effectiveness of government policies, the level of competition, and the availability of investment capital. FDI is particularly valuable in developing sectors that require significant capital, which may not be feasible through other sources of funding such as government subsidies or local private investments. The renewable energy sector is a prime example of such a sector. By attracting FDI, a country can potentially accelerate its transition to renewable energy sources, which could yield numerous environmental and economic benefits in the long run.

Energy is one of the most critical factors that can contribute to a country's economic development, but it needs to be complemented by other essential elements such as infrastructure, financial systems, and government regulations. However, due to the significant investment required in this sector, relying solely on public funding and local private investments may not be sufficient to achieve a

country's short- and long-term energy goals. Foreign investment is, therefore, essential to contribute to the success of these objectives.

In Rwanda, the under exploitation of the renewable energy sector can be attributed to various factors, including insufficient capital. It is, therefore, necessary to conduct an analysis to determine the extent to which Rwanda is encouraging foreign investors to invest in this sector and the level of motivation these investors have to respond to this call. The researcher believed that there is a correlation between the impact of FDI and the economic performance of the renewable energy sector, and this relationship could be measured through a comprehensive study.

LITERATURE REVIEW

Market Size and financial performance

A country's strong and stable GDP is often viewed as a factor that can attract new investors and secure FDI in the long run (Thanyakhan, 2014). Several studies have suggested a potential correlation between market size and the volume of inward investment (Anderson, 2009; Buch et al., 2014; Dunning, 2016; Kim, 2014). Kim (2012) used GDP as a proxy for market size to represent the location or internalization benefit of host nations and found that GDP was a significant determinant of FDI in the host countries. Market size also represents the region-specific advantage of the host nations, and national income level is important to consider, particularly for market-seeking FDI in developing countries (Guerin, 2016; UN, 2014). While the inflow of FDI in developing countries is often seen as market-seeking, rather than resource-seeking (Dunning, 2009), other studies have found that the size of the economy does not always determine FDI inflows (Edwards, 2011; Jaspersen et al., 2013). Therefore, a positive relationship between FDI inflows and market size of the Rwandan economy was expected. Gross Domestic Product growth (annual %) and GDP per capita were used as measures of market size in this study.

Ayanwale (2017) highlights that the determinants of FDI include market size, infrastructure development, and stable macroeconomic policy. Other studies for developing countries, such as Petrochilas (2013), Root and Ahmed (2014), Schneider and Frey (2009), Torrisi (2010), and Wheeler and Mody (2011), have also identified market size as a significant factor in attracting FDI. In Rwanda, Kinuthia (2010) notes that most foreign corporations are market-seeking, with market size and economic stability being important determinants.

According to Morisset (2013), market-seeking FDI is likely to benefit from a large market. In earlier studies, GDP has been used as a proxy for the size of the market and considered a significant factor in attracting FDI (Martinez-Zarzoso, 2013; Martinez-Zarzoso & Nowak-Lehmann, 2014; Pelletiere & Reinert, 2014). Pelletiere and Reinert (2014) argue that a high level of income in the host country indicates a high level of production, which increases the availability of investment. Therefore, the size of the market, as proxied by GDP, is an essential determinant of FDI inflows into Rwanda.

Conceptual Framework

In light of the previous discussion on FDI theories, a conceptual framework was developed by selecting variables based on the gaps identified in the literature, the proposed analysis of FDI in the energy sector of Rwanda's economy, and the availability of data for analysis. The variables selected are crucial in determining the flow and growth of FDI in any country. The expansion of the market size of an economy is expected to attract more investors. An increase in openness, denoted by total trade as a percentage of GDP, leads to more trade with other countries and thus attracts more foreign investment. Governance, both corporate and political, and the management of macroeconomic stability indicators such as exchange and inflation rates, determine the final value of returns on investments in a country and are therefore important determinants of FDI inflows. The assessment that follows will demonstrate the significance of these selected variables in

determining the FDI flow and growth in the energy sector of Rwanda's economy.

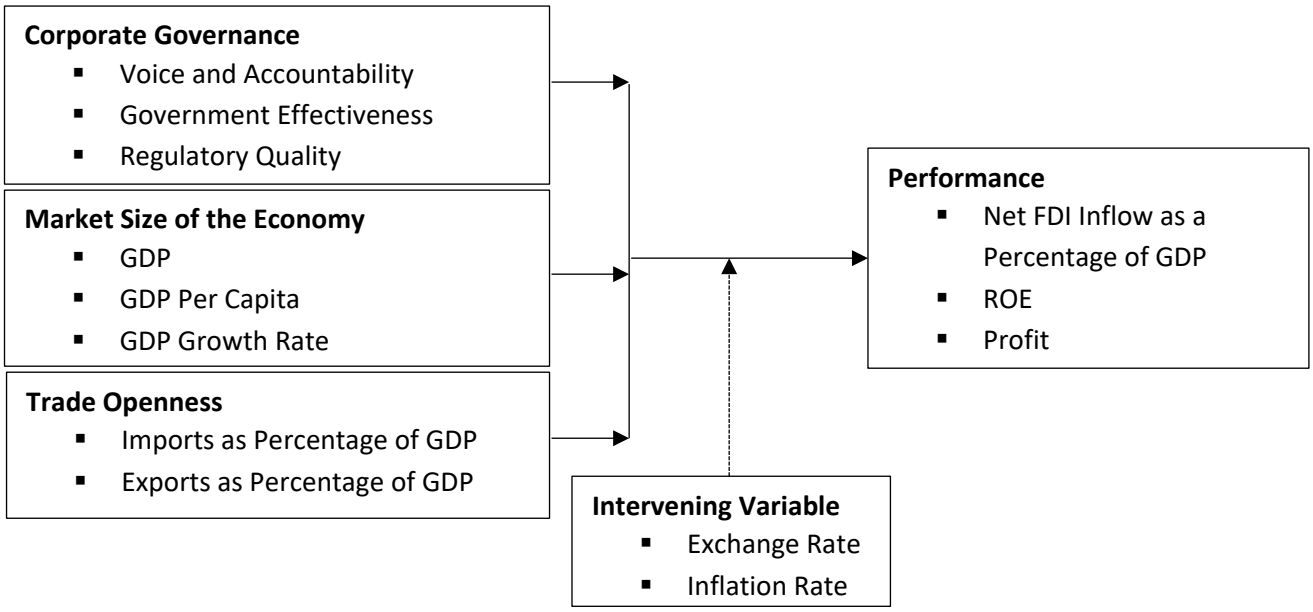

Figure 1: Conceptual Framework

METHODOLOGY

This chapter describes the methodology that was used in the study. It contains the research design, target population, sample size and sampling procedure, data collection instruments and procedure, validity, and reliability analysis as well as the data analysis methods.

Research design is an overall plan for the methods to be used to collect and analyze the data of a research study (Hair et al., 2009). Cooper and Schindler (2011) state that research design explains the logic behind the research method, the research techniques as well as the research instruments or the research format. It is a detailed blueprint used to guide a research study towards its objectives. This study adopted descriptive research design.

The descriptive research design was chosen based on the research objectives and the fact that data and information can be obtained using the method without changing the environment (Coon, 2014).

Target population in statistics is the specific population about which information is desired. According to Ngechu (2014), a population is a well-defined or set of people, services, elements, and events, group of things or households that are being investigated. This definition ensures that the population of interest is homogeneous. And by population the researcher means the complete census of the sampling frames. According to Mugenda and Mugenda (2009), target population in statistics is the specific population about which information is desired. The target population describes subjects or individuals who share similar character traits. It is the population to which the study findings are generalized (Kombo& Tromp, 2010). The target population was 112 employees of MOBISOL which has with significant foreign ownership in Rwanda.

Sampling is defined as the process of selecting several individuals for a study in such a way that they represent the larger group from which they are selected (Mugenda & Mugenda, 2013). In this study, the proportionate stratified random sampling was used which was cash on the stratum's share of the total population to come up with the sample in each stratum.

The choice of a sample size is mainly cash on the need for accuracy required by the researcher and the degree of variation (Saunders et al., 2009). A total of 88 respondents constituted the sample size for this study. The sample size was statistically calculated using Slovin's formula

$n = N/1+ N (e)^2$

Where;
n is the sample size,
N is the population size (112)
e is the desired level of precision (0.05)

$$n = \frac{112}{1+112\ (0.05)^2} = 88$$

Data from the sampled respondents were collected using a structured questionnaire. According to Mugenda and Mugenda (2009), questionnaires are effective tools for collecting data in survey studies. The questionnaire used in this study was designed to facilitate the collection of data that was relevant to the study objectives. It was structured in a way that ensured the questions asked were clear, concise, and easily understandable. Additionally, the questionnaire included a 5-point Likert scale to enable respondents to provide their opinions on various topics related to the study. This approach provided a standardized way of collecting data, which made it easier to analyze the responses and draw meaningful conclusions.

The researcher obtained all necessary permits and consents before collecting data. The process began by obtaining an official letter of introduction from the university. The management of MOBISOL was then contacted, and their consent was obtained to conduct the study. Once permission was granted, the research questionnaire was issued to the sampled respondents through the heads of the credit department at each bank branch. The respondents were given approximately five working days to complete the questionnaire, after which it was collected. This process ensured that the participants were aware of the purpose of the study, and that their participation was voluntary. Additionally, it helped to establish a good working relationship with the management of MOBISOL and the sampled respondents, which increased the likelihood of obtaining accurate and reliable data.

A pilot study was carried out prior to the main study with the aim of determining both the reliability and validity of the research instrument. The piloting was done amongst randomly selected officers working with Rwanda Energy group in Kigali town. The choice of Kigali town was in order to ensure that the participants of the pilot study will not be going to take part in the main study.

Validity and reliability are critical components of research methodology. Validity refers to the extent to which research findings can be accurately interpreted and generalized to other populations. It also pertains to the degree to which research instruments measure what they are intended to measure (Sekaran & Bougie, 2011). In contrast, reliability is a measure of the consistency of the results obtained from a test or research instrument.

To test the validity and reliability of the research instrument (questionnaire) used in this study, a pilot test was conducted. This process involved engaging supervisors and experts to review the questionnaire items to determine their appropriateness of content and identify areas that required modification to achieve the study objectives. This approach is consistent with the recommendations of Remenyi et al. (2009) and helped to enhance the validity of the questionnaire by ensuring that the questions accurately measured the constructs of interest. The pilot test also helped to identify and correct any potential sources of bias and errors in the questionnaire, thereby increasing the reliability of the data collection instrument.

According to Nunnally (2014), a measure is considered reliable if it is repeatable and free from random influences that could cause measurements to vary from one occasion to another or from one circumstance to another. These random influences are considered a source of measurement error. Orodho (2015) defines reliability as the degree to which a measure is free from random measurement error. It is calculated as the ratio of the true score

variance to the observed score variance, since each observed or measured score is composed of both a true score and measurement error. Reliability testing is important to ensure the quality of an instrument and to confirm that it is free from error. Common estimates of reliability used in research include test-retest, which examines whether the same question receives the same response over time, and Cronbach's alpha, which is a widely used reliability coefficient. Cronbach's alpha estimates test score reliability from a single test administration using information from the relationship among test items. It measures the squared correlation between observed scores and true scores and applies to various types of items, such as those scored dichotomously or with a Likert-type scale (Webb et al., 2016). In this study, the reliability of the instrument was assessed using Cronbach's alpha coefficient, with an acceptable reliability coefficient of 0.7 or higher, as recommended by Nunnally et al. (2014).

To ensure the validity of the analysis, the researcher first verified the completeness of the filled questionnaires and only included those that were appropriately filled. Data analysis was facilitated using the Statistical Package for Social Sciences (SPSS) Version 21 software. Descriptive and inferential statistics were used in the analysis, employing both quantitative and qualitative approaches. Quantitative data from the questionnaire was coded and entered into the computer for computation of descriptive statistics.

Qualitative data from an open-ended question was categorized into themes according to the research objectives and reported in narrative form alongside the quantitative presentation. The qualitative data was used to supplement the quantitative data and provide a more comprehensive analysis.

Moreover, inferential statistics were conducted to determine the nature and strength of relationships between the independent, intervening, and dependent variables using regression analysis. These analyses were linked to specific research questions in the study. The results of the inferential analysis allowed for the inference of the collected data to a more generalized condition.

The regression analysis looked at the following model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu$$

Y= Dependent variable – NPL

α = Intercept, which is the value of Y when X values are zero

μ= Error term normally distributed about the mean of zero

β = Coefficient of the Disbursement

X_1 = Corporate governance

X_2 = Market size

X_3 = Trade openness

β_1,β_2 and β_3 are coefficients

Two assumptions were taken into consideration for the model on the error term e.

- Errors were assumed to be independent identically distributed.
- Errors are normally distributed with mean zero and variance as a constant.

FINDINGS

Table 1 presented the responses of the study participants to several questions related to the effect of market size on FDI inflows. All of the respondents (100%) agreed that the level of economic development in a country may affect the growth and sustenance of FDI. Additionally, 98.2% of the participants agreed that the broadening of financial markets to facilitate trading in financial instruments can accelerate FDI inflows.

When asked about Rwanda's potential in terms of low-cost labor and vast natural resources in encouraging FDI, 66.8% of the respondents agreed, while 31.5% were uncertain. Moreover, 94.5% of the participants agreed that when the size of the market of the host country has grown large enough, it can become a target for the inflow of FDI.

In terms of the direct impact of market size (GDP size) on the expected revenue of foreign investment,

65.4% of the respondents agreed with the statement. However, 61.9% of the participants agreed that the market size of the Rwandan economy (measured by GDP) is too small to warrant growth of foreign investment.

These findings suggest that the size of the market plays a significant role in attracting FDI in the renewable energy sector in Rwanda. Additionally, low-cost labor and abundant natural resources are also important factors for attracting foreign investors. However, the relatively small market size of the Rwandan economy may hinder the growth of FDI inflows.

Table 1: Market Size of the Economy

	SA	Disagree	Uncertain	Agree	SA
Level of economic development in a country may affect growth and sustenance of FDI	0.00%	10.40%	6.20%	70.80%	12.50%
Broadening of financial markets to facilitate financial instruments can accelerate FDI inflows	0.00%	0.00%	0.00%	52.10%	47.90%
When the size of the market of host country has grown large enough, the host country can become the target for the inflow of FDI	0.00%	0.00%	12.50%	50.00%	37.50%
Market size (GDP size) directly affects the expected revenue of the foreign investment	0.00%	0.00%	1.80%	40.00%	58.20%
Rwanda incredible potential in terms of low-cost labor and vast natural resources can encourage FDI	0.00%	1.80%	9.10%	34.50%	54.50%

Trade Openness on financial performance of the renewable energy sector

The fourth objective of the study was to examine the effect of trade openness on the financial performance of the renewable energy sector in Rwanda.

The findings in Table 2 revealed that the majority of respondents agreed that liberalizing trade can attract more FDI to Rwanda, with 98.2% indicating their agreement. Additionally, 91% of respondents agreed that the ease of starting a business can influence the speed of seizing new investment opportunities in a country. Almost all respondents (98.7%) agreed that global integration can drive growth in FDI inflows to Rwanda, while 88.9% agreed that Rwanda's economic environment is open to global integration.

Regarding trade policies, 50.16% of respondents agreed that Rwanda has good trade policies that allow free movement of goods and services. However, when asked about restrictions on capital repatriation by foreign investors, 45.4% agreed while 45.5% were uncertain. These findings suggest that while there is potential for trade openness to attract FDI to Rwanda, there may be room for improvement in terms of policies related to capital repatriation.

Table 2: Trade Openness

	SA	Disagree	Uncertain	Agree	SA
More FDI can be attracted in Rwanda through liberalizing trade to attract foreign investment	0.00%	10.40%	6.20%	70.80%	12.50%
How easy or difficult it is to start a business, influence speed of new opportunities in investment in Country	0.00%	0.00%	0.00%	52.10%	47.90%
More global integration can drive growth of foreign investment inflows in Rwanda	0.00%	0.00%	12.50%	50.00%	37.50%
Rwanda economy is import oriented and openness may be successful in encouraging FDI flows	0.00%	0.00%	1.80%	40.00%	58.20%
Rwanda economic environment is open to global integration which can lead to FDI growth	0.00%	1.80%	9.10%	34.50%	54.50%

Regression Analysis

Regression analysis was done to examine the effect of foreign direct investment on the financial performance of the renewable energy sector in Rwanda.

Model Summary

Multiple regression analysis was employed to investigate the relationship between the dependent variable, which is the financial performance of the renewable energy sector in Rwanda, and the independent variables, as well as the mediating effect of intervening variables.

The model summary in Table 3 presents the R-squared value, which is the most reliable measure of the goodness of fit of the model. The results show that the model accounted for 72.4% of the variance in the financial performance of the renewable energy sector, indicating that the model is successful in explaining the relationship between the independent and dependent variables.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.842[a]	.724	.668	.130

a. Predictors: (Constant), Corporate governance, market size, trade openness

Table 4 presented the results of Analysis of Variance (ANOVA) which is used to assess the overall significance of the model. The p-value, which indicates the probability of getting a result as extreme as the one observed, is less than 0.05 ($p < 0.05$), specifically 0.000. This suggests that the model used in the study is statistically significant in explaining the variation in financial performance of renewable energy. Therefore, there is a positive significant relationship between FDI and financial performance of renewable energy, and the model is a good fit for the data.

Table 4: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.575[a]	3	.192	11.388	.000[b]
	Residual	1.379	82	.017		
	Total	1.953	85			

a. Dependent Variable: Financial performance
b. Predictors: (Constant), Corporate governance, market size, trade openness

The results presented in Table 4 demonstrated that FDI inflows have a mean value of 0.979 units, holding all other factors constant. The findings also show that a unit increase in inflation rates decreases the financial performance of renewable energy by 0.521 units, but this result was not statistically significant at the 5% level ($p > 0.05$). Conversely, a unit increase in exchange rates leads to an increase in FDI inflows by 0.30 units, and this finding was statistically significant.

Corporate governance was found to have a positive effect on financial performance, with a unit increase in corporate governance resulting in a 0.082-unit increase in financial performance. This result was statistically significant ($p < 0.05$). Similarly, market size was positively associated with financial performance, with a unit increase in market size leading to a 0.07-unit increase in financial performance. This finding was also statistically significant ($p < 0.05$).

Finally, trade openness was found to have a positive effect on financial performance, with a unit increase in trade openness leading to a 0.071-unit increase in financial performance. This result was statistically significant at the 5% level ($p < 0.05$), indicating that trade openness can have a significant impact on the financial performance of the renewable energy sector in Rwanda.

Table 5: Coefficient results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.979	.231		1.973	.106
	Corporate governance	.082	.009	.444	1.815	.009
	Market size of the economy	.07	.017	1.075	3.159	.025
	Trade openness	.071	.240	.230	.850	.028

From the data in the above table the established regression equation was

Y = 0.979 + 0.082 X1 + 0.153 X3 + 0.204 X4

Summary of the Findings

The objective of this study was to assess the impact of corporate governance on the financial performance of the renewable energy sector in Rwanda, with a focus on indicators such as voice and accountability, political stability & absence of violence, government effectiveness, regulatory quality, rule of law, control of corruption, and level of taxation. The study also aimed to determine the relationship between corporate governance and FDI inflows in Rwanda.

The study found that corporate governance has a significant impact on FDI inflows in Rwanda, although the relationship was not significant. The findings suggest that better corporate governance practices are positively associated with FDI inflows in the renewable energy sector of Rwanda. The indicators of corporate governance, particularly voice and accountability, political stability & absence of violence, government effectiveness, regulatory quality, rule of law, control of corruption, and level of taxation, are crucial factors in determining the growth of FDI in Rwanda's renewable energy sector.

In summary, the study highlighted the importance of corporate governance in attracting FDI inflows to the renewable energy sector in Rwanda. It is recommended that policymakers in Rwanda focus on improving corporate governance practices to encourage more FDI inflows in the renewable energy sector. Future studies could explore the impact of other factors, such as socio-economic and environmental factors, on the financial performance of renewable energy in Rwanda.

In this study, the objective was to examine the effect of the market size of the Rwandan economy on the financial performance of the renewable energy sector. The indicators used to measure the market size of the economy were the size of GDP, the GDP per capita, and the GDP growth rate.

The descriptive analysis revealed that GDP per capita in Rwanda significantly influenced the growth of FDI inflows. The inferential analysis showed that the strength of the relationship between the market size of the economy and the growth of FDI inflows in Rwanda depended on GDP per capita.

In summary, the findings suggested that the market size of the Rwandan economy, as measured by GDP per capita, has a significant impact on the financial performance of the renewable energy sector in Rwanda. A higher GDP per capita leads to increased FDI inflows and improved financial performance in the renewable energy sector.

The purpose of this study was to investigate the impact of trade openness on the financial performance of the renewable energy sector in Rwanda. The study used imports and exports as a percentage of GDP as indicators of trade openness. The results revealed a positive relationship between trade openness and the financial performance of the renewable energy sector in Rwanda, which is consistent with previous studies (Collier & Patillo, 2009; Edwards, 2010). However, some studies have

reported contradictory findings (Charkrabarti, 2011; Obwona, 2011; Jordaan, 2014).

Moreover, the study found that the ease of doing business influences the speed of seizing new investment opportunities in a country and that liberalizing trade can attract more foreign direct investment to Rwanda. The respondents from the firms also agreed with these findings.

Overall, the study highlighted the importance of trade openness in driving the financial performance of the renewable energy sector in Rwanda and underscores the need for policymakers to promote a favorable business environment to attract more foreign investment.

CONCLUSIONS

The study found that corporate governance accounts for 44% of the variance in the financial performance of the renewable energy sector in Rwanda. While this indicates a significant impact, it also suggests that other factors may be at play. Therefore, it can be concluded that while corporate governance is a significant contributor to the financial performance of the renewable energy sector in Rwanda, there are other important factors that should also be considered.

The study found that market size, as measured by GDP per capita and GDP size, had the strongest contribution to the financial performance of the renewable energy sector in Rwanda, accounting for 100% of the variance. This suggests that market size is a key determinant of the sector's financial performance in Rwanda. Therefore, the study concludes that policies aimed at increasing market size, such as promoting economic growth and expanding trade, could have a significant positive impact on the financial performance of the renewable energy sector in the country.

The study revealed that trade openness has a relatively low contribution (23%) to the financial performance of the renewable energy sector in Rwanda. Although Rwanda has favorable trade policies and a business-friendly environment, the results suggest that there is room for improvement in terms of facilitating new foreign direct investments. Respondents from the firms highlighted the importance of ease of doing business and speed of investment facilitation in attracting FDI to Rwanda. Thus, it is recommended that the Rwandan government continues to implement policies and measures aimed at improving the investment climate and enhancing the efficiency of its investment promotion agencies to attract more FDI inflows to the renewable energy sector.

RECOMMANDATIONS

This section presents recommendations made in the study that were based on the research findings, analysis, interpretation, discussion and conclusions. Recommendations for policy and practice were examined in this section.

The study also recommended that more attention should be given to improving the market size of the Rwandan economy. This could be achieved by implementing policies that support the growth of small and medium-sized enterprises, improving infrastructure, and promoting regional trade. Furthermore, the study suggests that efforts should be made to improve the ease of doing business in Rwanda, as this could increase the speed of facilitating new foreign direct investments.

In addition, the study recommended that further research should be conducted to explore the relationship between trade openness and the financial performance of renewable energy sector in Rwanda. This would provide a deeper understanding of the factors that influence the flow of foreign direct investments in the renewable energy sector in Rwanda.

Overall, the study highlighted the importance of considering a combination of traditional and institutional determinants when formulating policies to attract foreign investment into the renewable energy sector in Rwanda. It is essential to improve corporate governance practices, increase the market size of the economy, and improve the ease of doing

business in Rwanda to enhance the flow of foreign direct investments into the renewable energy sector.

The study's conclusion that GDP per capita and market size significantly influence the financial performance of the renewable energy sector in Rwanda has important policy implications. It is recommended that the Rwandan government should prioritize policies that support the growth of the financial market and facilitate trading in financial instruments. This will accelerate foreign direct investment in the renewable energy sector in Rwanda. Additionally, the government should focus on increasing the availability of low-cost labor to attract new foreign investment in the country as the study found that low-cost labor can have a positive impact on the size of the market.

Furthermore, the renewable energy sector in Rwanda should collaborate with financial institutions to explore new financing options such as green bonds and other innovative financial instruments to attract more investment. Finally, the government should also consider incentivizing the establishment of renewable energy companies in rural areas to spur economic development and increase the availability of clean energy in remote areas of the country.

The study found that despite Rwanda's open economy and favorable trade policies, improvements are needed to facilitate new investments and ease of doing business. Therefore, it is recommended that there should be a greater emphasis on liberalizing trade to attract foreign investment, while creating a more conducive environment for FDI in the renewable energy sector. This can be achieved by making it easier to start a business, which will increase the speed of seizing new investment opportunities in the sector. Such efforts will not only accelerate economic development and create employment opportunities, but also improve infrastructure and transfer knowledge and skills to the renewable energy sector and the country as a whole.

Areas for Further Research

The current research provided valuable insights into the impact of foreign direct investment on the financial performance of the renewable energy sector in Rwanda. However, it is recommended that further research be conducted to examine the effect of local or internal investment on the financial performance of the sector. This is important because local investment can play a significant role in the development of the sector, and it is important to understand the factors that influence local investors' decisions to invest in the renewable energy sector in Rwanda. Additionally, further research can explore the potential for collaboration between local and foreign investors in the sector and the impact of such collaborations on the financial performance of the sector.

REFERENCES

Adeoye, A. (2009). Macro-economic level governance and FDI in emerging markets: is there a close relationship? *Journal of Economics and International Finance, 1(2), 30-43*

Alesina A. & Dollar, D. (2000). Who gives foreign aid to whom and why? *Journal of Economic Growth, 5(1); 33-63.*

Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and economic growth: The role of local financial markets. *Journal of International Economics, 64 (1), 89-112.*

Aoki, M. (2007). Endogenizing institutions and their changes. *Journal of Institutional Economics, 3(1), 1-31.*

Asiedu, E. (2006). *Foreign Direct Investment in Africa: The Role of Natural Resources, Market size, Government Policy, Institutions and Political Instability.* The World Economy, 19 (1), 63 -77.

Baldwin, R.E, & Forslid, R. (2000). Trade Liberalization and Endogenous Growth: A q-Theory Approach. *Journal of International Economics, 50(2), 497-517*

Blomstrom, M. & Kokko, A. (2003). *The economics of tax incentives*. World Bank working paper; WP 15. Washington D.C: World Bank.

Bryman, A. & Bell, E. (2007). *Business Research Methods* (2 nd Ed). London: Oxford University Press.

Buckley, J. & Howarth, D. (2010). Internal Market: Gesture Politics? Explaining the EU‟s Response to the Financial Crisis. *Journal of Common Market Studies, 48(1), 119–141.*

Buckley, P., Clegg, L.J., Cross, A.R., Xin, L., Voss, H. & Ping, Z. (2007). The determinants of Chinese outward foreign direct investment, *Journal of International Business Studies, 38(4), 499-518.*

Busse, M. (2004). *Transnational Corporations and Repression of Political Rights and Civil Liberties:* An Empirical Analysis. Kyklos, 57(1), 45-65.

Caldeira, M.M. & Ward J.M. (2003). Using the resource-based theory to interpret the successful adoption and use of information systems technology in manufacturing and small medium-sized enterprises. *European Journal of information systems, 12(2); 127-141.*

Campino J.O. (2010). D*o Country Income-Level Variations Impact Foreign Direct Investments?* Unpublished PhD Dissertation, Washington: George Washington University.

Campos, N.F., & Kinoshita Y. (2003). *Why Does FDI Go Where It Goes? New Evidence from the Transition Economies, IMF Working Paper*, Washington D.C.: IMF Institute

Casson, M. (1990). *The Theory of Foreign Direct Investment*. In P. Buckley, ed., International Investment (pp.244-273). Aldershot: Edward Elgar Publishing Ltd.

Chatterjee, S., & Hadi, A. S. (2012). *Regression analysis by example 5 th ed. Hoboken*, NJ: John Wiley and Sons.

Cooper, D.R., & Schindler, P.S. (2013). *Business Research Methods*,

Dixit, A. (2009). Governance Institutions and Economic Activity. *American Economic Review, 99 (1), 5–24.*

Dutta, N. & Roy, S. (2008). Foreign Direct Investment, Financial Development and Political Risks. *Journal of Developing Areas, 44(2), 303-327.*

East African Community. (2010). *The EAC Development Strategy*: 2006-2010. Retrieved from http: //www.eac.int.

Faria, A., & Mauro, P. (2009). Institutions and the External Capital Structure of Countries. *Journal of International Money and Finance, 28 (3), 367–91*.

Fazio, G. & Talamo, G. (2008). How „attractive‟ is good governance for FDI? *International Finance Review, 9(11), 33-54.*

Globerman, S. & Shapiro, D. (2003). Governance infrastructure and US foreign direct investment. *Journal of International Business Studies, 34(1), 19-39.*

Giorgio Barba Navaretti and Anthony Venables. (2013), Multinational Firms in the World Economy.

Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2017b), A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM), 2nd ed., Sage, Thousand Oaks, CA.

Hansen & Rand. (2006). On the Causal Links between FDI and Growth in Developing Countries. *The World Economy, 29 (1), 21-41*.

Hatcher, L. (2013). *Advanced Statistics in Research: Reading, Understanding, and Writing up Data Analysis Results.* New Delhi, India: Shadow Finch Media.

Hausmann, R., & Fernandez-arias, E. (2000). The new wave of capital inflows: sea change or just another title? *Inter-American Development Bank Working Paper, (415).*

He, C., & Zhu, Y. (2010). Real Estate FDI in Chinese Cities: local market conditions and regional institutions. *Eurasian Geography and Economics*, 51 (3), 360384.

Hymer Stephen (2010), *The multinational corporation: A radical approach, papers*

International Monetary Fund. (2003). Foreign Direct Investment in *Emerging Market Countries,* Working Group of the Capital Markets Consultative Group Washington DC.

International Monetary Fund/World Bank. (2008). *Regional Economic Outlook: Sub-Saharan Africa.* World Economic and Financial Surveys, Washington D.C.: International Monetary Fund.

International Monetary Fund's International financial statistics database. (2011). Retrieved from http://ifs.apdi.net/imf/about.asp.

Jaratin, L., Kogid, M., Dullah, M., Lim, T.S. & Rozilee, A. (2014). *Exchange Rate Movement and Foreign Direct Investment in ASEAN Economies.* Economics Research International, 2(1), 1-10.

Jaspersen, F.Z., Aylward, A.H. & Knox, A.D. (2000). *The Effects of Risk on Private Investment:* Africa Compared with Other Developing Areas, in Investment in Risk in Africa, edited by P. Collier and C. Pattillo. New York: St. Martin's Press.

Jordaan, J. C. (2004). *Foreign Direct Investment and Neighboring Influences.* Unpublished doctoral thesis, Pretoria: University of Pretoria.

Kadongo, C.O. (2011). *Foreign Exchange Risk and the Flow of International Portfolio Capital:* Evidence from Africa's Capital Markets. Unpublished PhD thesis, Witwatersrand: University of the Witwatersrand.

Kaufmann, D., Kraay, A. & Mastruzzi, M. (2009). *Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996-2008.* World Bank Policy Research Working Paper No. 4978.

Kaufmann, Kraay & Mastruzzi. (2010). *The Worldwide Governance Indicators, Methodology and Analytical Issues.* World Bank Policy Research Working Paper, No. 5430.

Kayonga, G. W. (2008). *A Comparative study of foreign direct investment policy in Eastern Africa:* The case of Rwanda and Tanzania (2000-2006). Unpublished MA Thesis, Nairobi: University of Nairobi.

Khamfula, Y. (2007). *Foreign Direct Investment and Economic Growth in EP and IS Countries:* The Role of Corruption. The World Economy, 30(12), 1843-1854.

Kinuthia, B. K. (2010). *Determinants of Foreign Direct Investment in Kenya*: New Evidence; Retrieved from www. Aibuma.org.

Kinuthia, B.K & Murshed, S.M. (2013). FDI Determinants: Kenya and Malaysia Compared. *Journal of Policy Modeling, 37(2); 388- 400.*

Kombo, D. K., & Tromp, D.L. (2006). *Proposal and thesis writing:* An introduction. Nairobi: Pauline's Publications Africa.

Kothari, C. R. (2009). *Research Methodology*: Methods and Techniques. New Delhi, India: New Age International Publishers.

Kransdorff, M. (2010). Tax incentives and foreign direct investment in South Africa; Consilience, *The journal of sustainable development, 3(1), 68-84.*

Krueger & Perri (2006). Does Income-inequality lead to Consumption Inequality? Evidence and Theory. Review of Economic Studies, 73(1), 163-193.

Kurui, K. (2008). *The effects of foreign direct investment (FDI) in Sub-Saharan Africa: A case study of China's direct investment to Kenya (2000-2006).* Unpublished MA Thesis, Nairobi: University of Nairobi.

Kuzmina, O., Volchkova, N. & Zueva, T. (2014). Governance Quality as a Determinant of FDI: The Case of Russian Regions. *Journal of Comparative economics, 42(4), 874-891.*

Lado, E.P.Z (2015). Foreign Direct Investment an Engine for Development: Factors *Determining its Inflow to the Sudan. Economics. 4(5), 81-89.*

Lane, P. R. (2004). Empirical Perspectives on Long-Term External Debt. *Topics in Macroeconomics, 4 (1), 1–21.*

Lizondo, J. Saúl, Foreign Direct Investment (July 1990). *IMF Working Paper*, Vol. , pp. 1-31, 1990.

Masca, M., & Demirhan, E. (2008). Determinants of Foreign Direct Investment Flows to Developing Countries: *A Cross-sectional Analysis. Prague Economic Papers, 4(208), 356-369.*

Mina, W. (2006). *Does Contract Enforcement Matter for International Lending*? Applied Economics Letters, 13 (6), 359–364.

Mina, W., & Martinez-Vazquez, J. (2006). Contract Enforcement, Institutional Stability and the Level and Maturity of International Lending. *International Studies Program Working Paper 06-17. Atlanta: Andrew Young School of Policy Studies.*

Montgomery, D. C., Peck, E. A., & Vining, G. G. (2001). *Introduction to Linear Regression Analysis (3rd ed.).* New York: John Wiley & Sons.

Moriya, N. (2008). *Noise-Related Multivariate Optimal Joint-Analysis in Longitudinal Stochastic Processes in Progress in applied mathematical modeling (pp 223-260).* In Fengshan Yang Progress in Applied Mathematical Modeling: Nova Science Publishers.

Mugenda, O. M. & Mugenda, A. G., (2013), *Research Methods; Quantitative and Qualitative Approaches.* Nairobi, Kenya: Acts Press.

Musau, K. A. (2012). *The impact of foreign direct investments on economic growth and development in Kenya.* Unpublished MSC Thesis, Nairobi: University of Nairobi.

Mutenyo, J. (2008). Determinants and Effects of Foreign Direct Investment in Sub-Saharan Africa. The *African Finance Journal, 12 (1), 8-15.*

Mwega, F.M. & Ngugi, R.W. (2007). *Foreign Direct Investment in Kenya, in Ajayi, S.I. (eds) Foreign Direct Investment in Sub-Saharan Africa:* Origins, Targets, Impact and Potential, Nairobi: African Economic Research Consortium.

Nonnemberg, M. B. & Mendonca, M.J.C.D. (2004). *The determinants of Foreign Direct Investment in the Developing Countries.* Rio de Janeiro: Instituto de Pesquisa Economica Aplicada (IPEA).

Nunnally, J. C. & Bernstein, I. H. (2009). *Psychometric Theory* (3 rd Ed). New York: McGraw-Hill.

Obstfeld, M., & Taylor. A. M. (2003). Globalization and Capital Markets. In M. D. Bordo, A. M. Taylor, & J. G. *Williamson, Globalization in Historical Perspective. Chicago: University of Chicago Press.*

Organization for Economic Co-operation and Development. (2012). *Annual Report on the OECD Guidelines for Multinational Enterprises*. Author.

Recep, K. & Ersoy, B. A. (2009). Analyses of FDI determinants in Developing Countries. *International Journal of Social Economics, 36(1), 105 – 123.*

Rodrik, D. (2008). *Second-best Institutions*. American Economic Review: Papers & Proceedings, 98(2), 100–104.

Shuttleworth, M. (2008). *Quantitative Research Design*. Retrieved from www. Explorable.com.

Smeets, R. (2008). *Collecting the Pieces of the FDI Knowledge Spillovers Puzzle*. World Bank Research Observer, 23(2), 107-138.

Theresa H. D. N. (2012).The steps to follow in a multiple regression analysis. SAS Global Forum; Paper 333; La Puente, CA.

Thugge, K., Heller, P.S, & Kiringai J. (2010). *Fiscal Policy in Kenya: Looking Toward the Medium-to Long-Term.* Oxford: Oxford University Press.

UNCTAD. United Nations Conference on Trade and Development. (2008). *World Investment Report 2008, Geneva:*

UNCTAD. United Nations Conference on Trade and Development. (2009). *World Investment Report 2009, Geneva:*

UNCTAD. United Nations Conference on Trade and Development. (2009). *World Investment Report 2009, Geneva:*

UNCTAD. United Nations Conference on Trade and Development. (2010). *World Investment Report 2010, Geneva:*

UNCTAD. United Nations Conference on Trade and Development. (2011). *World Investment Report 2011, Geneva:*

UNCTAD. United Nations Conference on Trade and Development. (2012). *World Investment Report 2012*, Geneva: UNCTAD.

United Nations Statistics Division- Common Database. (2010). Retrieved from http://unstats.un.org/unsd.

United Nations, Economic Commission for Africa (2008). Economic Report on Africa 2014: Dynamic Industrial Policy in Africa: *Innovative Institutions, Effective Processes and Flexible Mechanisms:*

Waheeduzzman, A.N.M. & Pradeep, A.R. (2006). *Market Potential and Foreign Direct Investment: Exploring the Relationship in Emerging Markets*. Advances in Competitiveness Research, 14 (1), 44-60.

Wei S. (2000). *How Taxing is Corruption on International Investors*? Review of Economics and Statistics, 82 (1), 1-11.

World Bank. (2010). Doing Business 2011: *Making a difference for entrepreneurs Washington* DC Retrieved from www.worldbank.org.

World Bank. (2013). World *Development Report, World Institute for Development Economics* Washington DC: World Bank.