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Original Research

Modelling Petroleum Prices in Tanzania: A Comparative Analysis between ARIMA and Holt's Method

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Abstract

Petroleum is one of the vital sources of energy for economic activities and the most traded commodity worldwide. It is crucial to industry and civilization and as it meets a substantial portion of the world's energy requirements, it has a big impact on global politics and intergovernmental relations. Given the importance of oil to the economy, projecting crude prices has received a lot of focus in the literature. The primary goal of this research is to assess how well Holt's technique and Autoregressive Integrated Moving Average (ARIMA) forecast the petroleum prices in Tanzania. To determine whether the model is more reliable at predicting the prices of petrol in Tanzania, a comparative analysis was perfumed. Monthly data on petroleum prices were extracted from the bank of Tanzania website between February, 2004 to May, 2023. The mean absolute percentage error (MAPE), mean absolute error (MAE), and mean squared error (MSE) were used to evaluate the predictive ability of the ARIMA and double exponential smoothing models. The findings indicated that ARIMA (1,1,1) outperformed double exponential smoothing model for forecasting the prices of petrol in Tanzania. The result of this study will guide policy makers and investors in the energy sector to make wise decisions through accurate prediction of the price of petroleum in the future.

Keywords: ARIMA, Holt's Model, Petroleum, Smoothing.

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Introduction

Petroleum is one of the vital sources of energy for economic activities and the most traded commodity worldwide (Kim & Jang, 2023). Petroleum is crucial to industry and civilization, and as it meets a substantial portion of the world's energy requirements, it has a big impact on global politics and intergovernmental relations (Femi Olayiwola & Matshonisa Seeletse, 2019). It remains the most significant energy source in the world, accounting for 33% of the primary energy used globally (Weldon et al., 2022). Its dominance in the transportation sector, which uses 94% of all energy, underlines how crucial it is (Weldon et al., 2022). Given that cars are one of the biggest consumers of petroleum and that petrol is the primary fuel type used in the present generation of passenger vehicles (Thakur et al., 2016), numerous studies that examine the demand for transportation fuel have focused on the demand of petrol for automobiles (Li et al., 2010).

Forecasting the use of fuel has grown in importance as an instrument for energy planning, with the main goals frequently identified as; aiding in the establishment of suitable pricing and taxation frameworks, assisting in potential investments and decision-making regarding oil reserves in order to enhance energy security, assisting in the early resolution of emission and contamination issues, and enabling the provision of future energy demands as well as the identification of national the infrastructure and energy demands (Ghazanfari, 2021). The formulation of transportation and environmental policies depends on an awareness of the factors that affect the demand for transportation fuel (Alam et al., 2019). Furthermore, in order to adopt the regulations and rules that are required to promote environmentally friendly growth, decision-makers must understand the dynamics of fuel consumption (Ajlouni & Alodat, 2021).

Given the importance of oil to the economy, projecting crude prices has received a lot of focus in the literature. The selection of when to drill as well as how much to hedge is based on forecasting, which is always an imperfect art, especially for the oil business, a worldwide sector with widely inconsistent data (Femi Olayiwola & Matshonisa Seeletse, 2019; Miao et al., 2017). Inaccurate forecasts with upside or downside bias can affect profit loss, with downside bias causing higher losses due to lower predicted prices (Ugurlu et al., 2018). Understanding the challenges of past forecasting approaches is crucial for understanding why oil prices are difficult to predict (Khan & Alghulaiakh, 2020). Crude oil prices are affected by dynamic and multifaceted elements such trade, financial markets, and physical markets, all of which can be unpredictable and have opposing effects (Polanco Martínez et al., 2018).

Various modeling techniques, including ARIMA and GARCH, have been used to estimate the demand for crude oil in the transportation and energy sectors (Gasper & Mbwambo, 2023; Mbwambo & Letema, 2023). Although studies have been done to forecast the price of oil in Tanzania's oil market, the forecasting accuracy of models used has not been examined specifically in the petroleum industry. This study tends to fill this knowledge gap in the literature by comparing the performance of various linear and nonlinear models in predicting the demand of petrol in Tanzania. In doing so, we present both the theoretical components of the various models as well as the collection of real-world factors that determine a model's appeal. To assess the forecasting accuracy of linear

and nonlinear models; ARIMA, Single exponential, and Holt's linear models were developed and compared.

Literature Review

Numerous studies have been carried out for modelling and forecasting petroleum prices. However, an accurate model for predicting petroleum prices has not yet been agreed upon by researchers.

Using a variety of trend models, including a linear trend model, a quadratic trend model, an exponential trend model, a single exponential smoothing model, a Holt's linear model, a Holt-Winters' model, a partial adjustment model (PAM), and an autoregressive integrated moving average (ARIMA) model, Li et al. (2010) conducted a research to forecast Automobile Petrol Demand in Australia. Moreover, to assess forecasting accuracy, the study examined the variation between forecasts and actual observations of petrol demand. Based on the identified best-forecasting model "business as usual" scenario was suggested for predicting Australia's automotive fuel demand.

Using ARIMA, Mishra et al., (2022) conducted research to model and forecast the price of crude oil in India. He used monthly data and Box Jenkins methodology to generate. The ARIMA model clearly shows that between December 2019 and November 2020, the average monthly percentage increase in crude oil output 0.01% leading into a 0.36% increase in crude oil prices during the same period. The study's findings were beneficial to the commodity market investors as they develop their investment plans while taking future changes into account. Additionally, it helped the Indian government to implement the required measures to absorb the volatility and manage crude oil prices.

In his research, Zulu et al. (2022) applied a Box Jenkins methodology to forecast the price of fuel in Zambia. To forecast the price of fuel he used data from 1998 to 2022. Because of its accuracy, mathematical soundness, and adaptability, the ARIMA model was selected for forecasting. As a result of its smaller errors when compared to Simple Exponential Smoothing (SES), Holt's method and Holt Winter's method, ARIMA (1, 1, 2) was found to be the best fit for the price of fuel. The study's findings also indicated that fuel prices in Zambia will keep rising from 2022 to 2032.

Using a range of GARCH models, Mbwambo & Letema (2023) predicted the returns of Brent crude oil prices from January 2002 to February 2022. The GJRGARCH (1,1) model was the most effective model in the family of GARCH models at predicting the erratic nature of crude oil prices. The GJRGARCH model was chosen because it has a lower information criteria value and a higher likelihood value. A diagnostic analysis was done to determine whether the suggested model could accurately predict the volatility of crude oil. The study suggested to use the GJRGARCH model to predict future changes in exceptional circumstances.

Gasper & Mbwambo (2023) carried out a study for addressing the issue of forecasting crude oil prices in a situation with unexpected circumstances. Monthly data from January 2002 to February 2022 on Brent oil price were examined using Box Jenkins approach. The accuracy of numerous models was assessed, and it was found that ARIMA (0, 1, 1)

was the most accurate model for predicting crude oil prices. Additionally, the study demonstrates that even if the Ukraine conflict and the corona virus had a significant impact on crude oil prices, a model of this type is still able to accurately represent the underlying volatility in crude oil prices.

Methodology

The primary goal of this study is to establish a framework that supports the validity of several forecasting techniques and identify the method that is most effective with the least prediction errors. In order to help investors and the government in the energy sector to make informed decisions, forecasting is a potential tool. Several quantitative forecasting techniques, including the ARIMA model, Single exponential smoothing and Holt's method have been used in this study. The Mean Absolute Error (MAE), Mean Absolute Percent Error (MAPE), and Root Mean Square Error (RMSE) error determination techniques were used to find the optimal model. Historical data collected from the bank of Tanzania website between February 2004 and May 2023 was analyzed using by R software to obtain the optimal model. The following sections provide a comprehensive description of each technique employed in this research.

ARIMA model

In 1970, Box and Jenkins developed the Autoregressive Integrated Moving Average (ARIMA) model, which forecasts future values using historical data (Chyon et al., 2022). Most time series patterns without a seasonal component employ the ARIMA model to obtain the predicted values. In order to generate a short-term predictions, ARIMA models usually outperforms complex structural models (Khan & Alghulaiakh, 2020). A mathematical representation of the ARIMA model is denoted by (2).

$$x_t = \mu + \phi_1 x_{t-1} + \phi_2 x_{t-2} + \cdots + \phi_p x_{t-p} + \varepsilon_t + \theta_1 \varepsilon_{t-1} + \theta_2 \epsilon_{t-2} + \cdots + \theta_q \varepsilon_{t-q} \quad (2)$$

Where μ is a constant term, ϕ_1 ,....., ϕ_p and θ_1 ,..., θ_q are coefficients, ε_t is the random term, p and q are orders of autoregressive and moving average terms respectively and x_t are the actual values.

Single Exponential Smoothing (SES)

This is a type of weighted average technique which predicts the future values based on historical forecasts and a proportion of anticipated error (Sidqi & Sumitra, 2019). Because it does not need retaining the history of earlier input data, it is simple to implement and compute (Cadenas et al., 2010). It equally diminishes the impact of unusual data. The following is the SES equation:

$$F_t = \alpha A_t + (1 - \alpha)F_{t-1}$$

where F_t represents the forecast for the time period t, F_{t-1} represents the forecast for the prior period, A_t represents the actual petroleum price for the prior period, and α represents the smoothing constant between 0 and 1 inclusive.

Double Exponential Smoothing (Holt's) Method

To forecast data with a linear trend, Holt (1957) developed the Holt's approach, sometimes known as double exponential smoothing (Dharmawan & Indradewi, 2021). Holt's approach is an improvement of simple exponential smoothing (Liantoni & Agusti, 2020). Using two separate smoothing constants (beta for the trend and alpha for the level), Holt's approach smooths the given time series.

Level equation: $\quad l_t = \alpha x_t + (1 - \alpha)(l_{t-1} + b_t)$

Trend equation: $\quad b_t = \beta(l_t - l_{t-1}) + (1 - \beta)b_{t-1}$

Forecast equation: $h_{t+m} = l_t + mb_t$

where h_{t+m} is a prediction for m periods into the future, l_t is an estimate of the level at time t, b_t is an estimate of the trend (slope) at time t, m are the forecasted future periods, and α is a smoothing constant for the level between 0 and 1 inclusive and β is a smoothing constant for the trend between 0 and 1 inclusive.

Measures of forecasting accuracy

Forecasting accuracy is a crucial factor to take into account when deciding between different forecasting approaches. The forecasting error in this context refers to the discrepancy between the observed value and the predicted value for a specific period (Karmaker et al., 2017). The three factors used in this study to determine forecasting error are mean absolute error (MAE), mean squared error (MSE), and mean absolute percentage error (MAPE) (Prayudani et al., 2019). The abbreviations MSE, MAPE, and MAE stand for mean squared error, mean absolute percent error, and mean absolute error between actual value and estimated value for a certain period, respectively. The following computations were MAE in this study to obtain the most robust forecasting model among several models.

$$MAD = \sum \frac{|A_t - F_t|}{n} \qquad (4)$$

$$MSE = \sum \frac{(A_t - F_t)^2}{n-1} \qquad (5)$$

$$MAPE = \sum \frac{|\varepsilon_t / A_t|}{n} \qquad (6)$$

where A_t is the observed value at time t, F_t is the predicted value at time t, n is specified number of time periods, and ε_t is the forecast error.

Result

The trend of petroleum price

Figure 1 illustrates a time series representation of the petroleum data from Feb, 2004 to May, 2023. Figure 1 suggests that petroleum prices fluctuate from time to time.

Figure 1. Observed values

Stationarity

Table 1 shows the p-value of the ADF statistic at 5% significance level. We can conclude based on the generated result that the data set is not stationary because the p-values is larger than 5%.

Table 1: ADF test for stationarity

	Dickey-Fuller	p-value
Before differencing	-2.4461	0.3884
After differencing	-6.2779	0.01

After the first order differencing, the p-value for the ADF statistic was lower at 5% thus it may be decided that petroleum price became stationary after first order differencing.

ARIMA model

The ACF plot suggests four different Autoregressive Integrated Moving Average models: ARIMA (0,1,0), ARIMA (0,1,1), ARIMA (1,1,0), and ARIMA (1,1,1). The ARIMA (1,1,1) model outperformed other models in predicting the price of petroleum in Tanzania after examining log likelihood and the AIC criterion. The AIC value of the model was the lowest when compared to other models. Table 2 displays the outcome of the four ARIMA combinations.

Table 2. ARIMA combinations

	ARIMA (0,1,0)	ARIMA (0,1,1)	ARIMA (1,1,0)	ARIMA (1,1,1)
Log likelihood	-1344.39	-1337.15	-1338.07	-1334.42
AIC	2690.79	2678.3	2680.15	2676.84
$Sigma^2$	6647	6241	6291	6174

The accurate prediction for petrol price was achieved using the ARIMA (1,1,1) model with drift. The output of the ARIMA (1,1,1) model for predicting the price of petroleum is shown in Table 3.

Table 3. Estimates of ARIMA (1,1,1) model

	Coefficient	Std error	RMSE	MAE	MAPE
AR1	-0.3961	0.1491	77.893	48.33198	2.382028
MA1	0.6531	0.1213			
Drift	9.4376	6.0788			

Diagnostic test

This was done to see the extent to which the chosen model fit the data. The residuals should be normally distributed and serial correlation among residuals. Histograms were applied to check if residuals are normally distributed. Additionally, the Box-Ljung test and ACF of the residuals were plotted as indicated in figure 2 to ascertain whether or not the residuals are correlated.
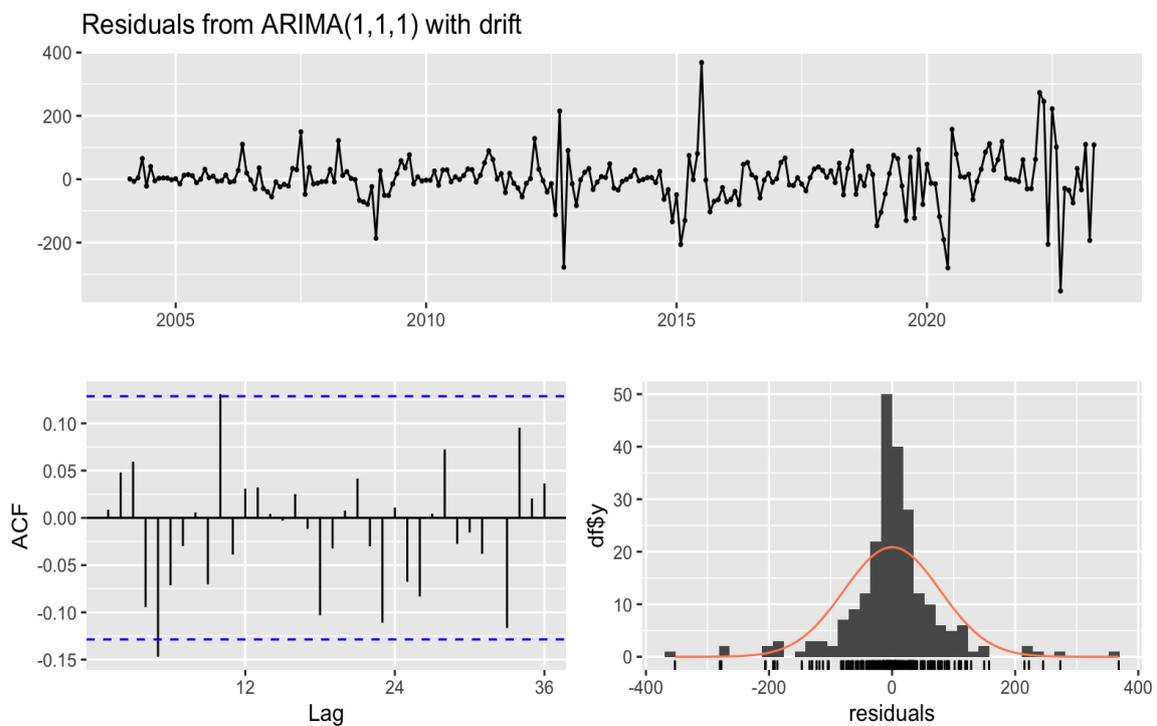
Figure 2. Residual plots

The histogram in figure 2 shows that the residuals appear to be normally distributed and the mean of residuals is approximately zero. The fact that there are no significant spikes in the ACF plot of residuals in figure 2 further proves that the residuals are not correlated at the 5% significance level. Furthermore, the Box-Ljung test's p-value is higher than 5%, indicating that there is no proof of serial correlation between the residuals. As a result, we can say that the model accurately predicts the data. Figure 3 displays a comparison between actual demand and fitted values using the ARIMA approach.

Figure 3. Comparison of actual versus fitted values using ARIMA method.

Single exponential smoothing (SES) method

Nine trials were conducted to find the ideal smoothing constant. For the single exponential smoothing approach, the lower the forecasting errors the larger the smoothing constant parameters as shown in Table 4.

Table 4. Forecasting errors under SES method

Smoothing parameter (alpha)	RMSE	MAE	MAPE
0.1	201.4380	154.7046	8.064540
0.2	151.4854	112.0557	5.921869
0.3	128.2998	92.60400	4.856049
0.4	114.1289	80.90050	4.200748
0.5	104.1820	71.94649	3.702314
0.6	96.76422	64.95819	3.317372
0.7	91.11899	60.00806	3.040840
0.8	86.83176	56.64902	2.849745
0.9	83.63787	53.88280	2.691734

Table 4 displays various predicting error levels for various smoothing constants. Table 4 makes it evident that when the smoothing constant value increases, the values of MAPE, MAE, and RMSE gets smaller. We found that the optimal smoothing constant (alpha= 0.9) achieved the lowest errors.

Figure 4 illustrates that for a single exponential smoothing method, the variation of the observed and fitted values is almost the same.
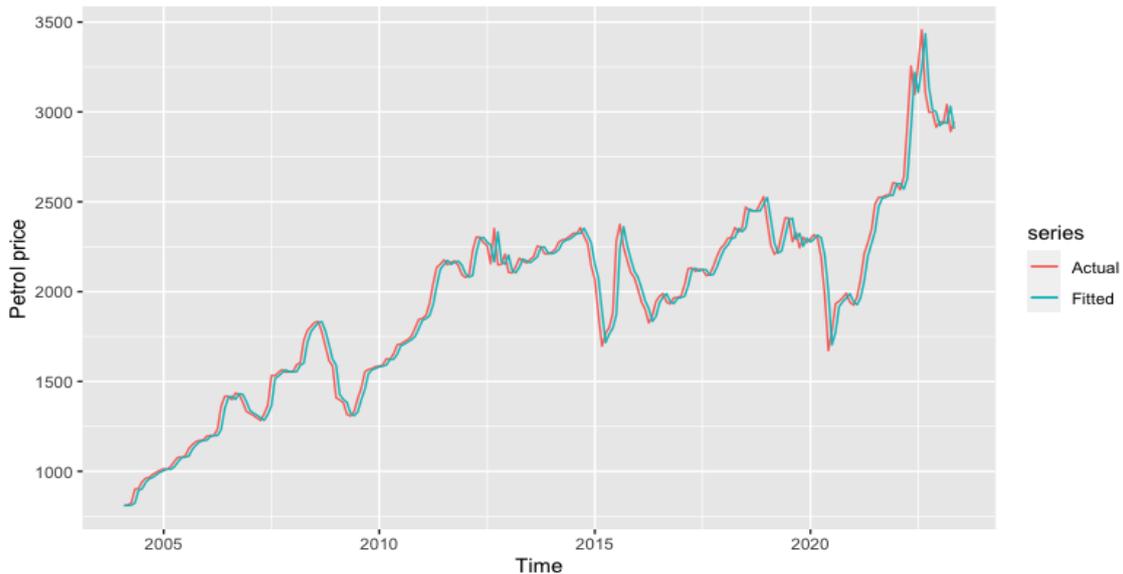
Figure 4. Comparison of actual versus fitted values using SES method.

Double exponential (Holt's) method

In line with Holt's procedure, nine trials were also carried out with different smoothing constants (both level and trend), ranging from 0.1 to 0.3, as shown in Table 5. At alpha= 0.9 and beta= 0.1, we achieved the lowest errors.

Table 5. Forecasting errors under Holt's method

Smoothing parameter, alpha (Level)	Smoothing constant, beta (Trend)	RMSE	MAE	MAPE
0.1	0.1	213.3621	158.9657	8.228098
0.2	0.1	162.926	117.2084	5.981383
0.2	0.2	181.4535	123.7842	6.314036
0.3	0.1	136.8296	95.42364	4.845245
0.3	0.2	146.4521	98.2135	4.982532
0.3	03	146.8052	100.8356	5.043209
0.9	0.1	85.30201	54.89941	2.717236
0.9	0.2	86.55263	56.07995	2.781121
0.9	0.3	87.53581	56.26348	2.786955

Figure 5 compares the actual and predicted price of petroleum using Holt's technique with the best possible the combination of smoothing constants
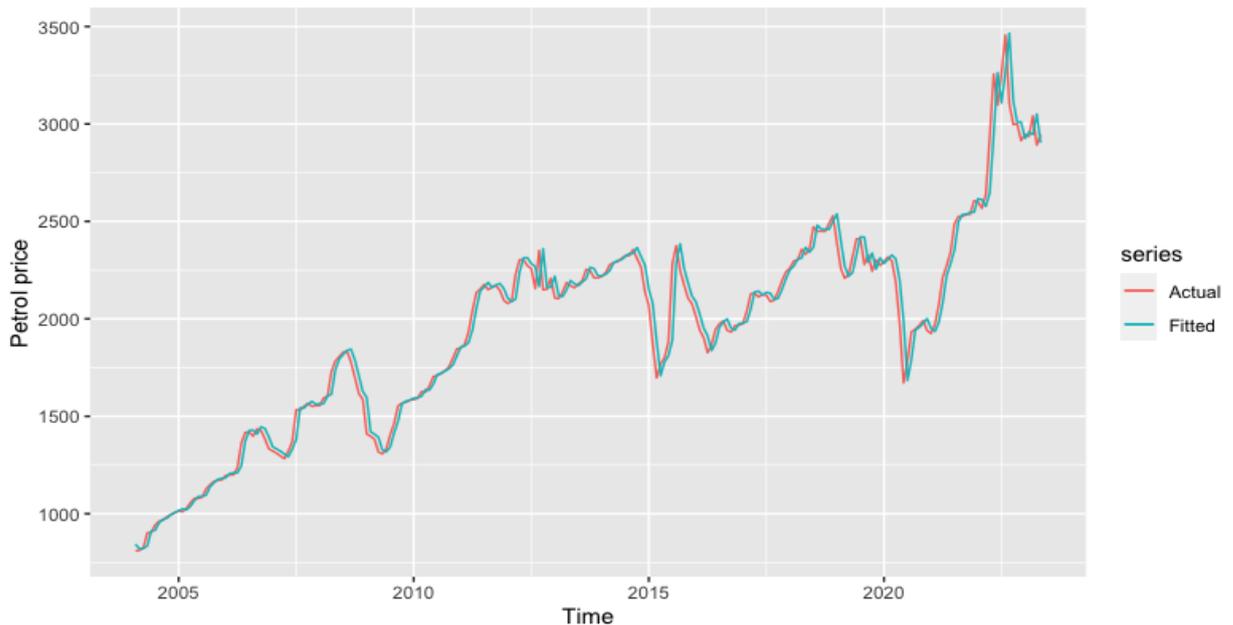
Figure 5. Comparison of actual versus fitted values using Holt's method.

Summary of the three models

Table 6 provides a summary of the results from all computations and analyses considering the three distinct forecasting methods. Results show that there are variations in the methods used. When comparing the results from various methods, ARIMA (1,1,1) with drift showed the lowest values of forecasting error thus, denoting the greatest accuracy which implies the suitability of this method in forecasting Petroleum prices in Tanzania.

Table 6: Comparison of ARIMA (1,1,1) and VAR models

	ARIMA (1,1,1)	SES	Holt's method
Root Mean Square Error	77.89300	83.63787	85.30201
Mean Absolute Error	48.33198	53.88280	54.89941
Mean Absolute Percentage Error	2.382028	2.691734	2.717236

Conclusion and Discussion

Finding the best forecasting model for petrol prices in Tanzania was a major goal of this study. To determine whether the model is more reliable at predicting the prices of petrol in Tanzania, a comparative analysis was perfumed using monthly data on petroleum prices which were extracted from the bank of Tanzania website between February, 2004 to May, 2023. The mean absolute percentage error (MAPE), mean absolute error (MAE), and mean squared error (MSE) were used to evaluate the predictive

ability of the ARIMA and double exponential smoothing models. The findings indicated that ARIMA (1,1,1) outperformed double exponential smoothing models in forecasting the prices of petrol in Tanzania

The result of this study is contrary to study done by Fondo et al. (2021) and in line with the study conducted by Sokkalingam et al. (2021). This study can help policymakers, investors as well as other sectors to make an optimal selection of the contingent forecasting method.

Limitation of the study

Perfect foresight in the oil market is challenged by unpredictable factors such as global economic shifts, supply disruptions, changes in oil production and inventory demand, and geopolitical events. These events create uncertainty about future supply or demand, leading to higher volatility in prices. Accidental events like power outages or pipeline problems further complicate the situation. Market participants assess the possibility of future events and their potential impact on prices, considering factors like size, duration, current stock levels, and producers' ability to set potential shocks. The forward-looking behavior of speculators and quantification of speculative oil demand shocks can invalidate standard econometric models. Additionally, it is difficult to relate changes in real oil prices to macroeconomic outcomes due to reverse causality from macro aggregates to oil prices.

Recommendation and rea for further studies

Further research may be done to compare the accuracy of various models, such as Generalized Autoregressive Conditional Heteroscedasticity (GARCH), Vector Error Correction Model, and machine learning models with that of ARIMA and exponential smoothing models in predicting the petroleum prices in Tanzania. In addition, Multivariate GARCH models can be utilized for further research by incorporating various explanatory factors like production capacity, international crude oil price, exchange rate, and inflation to estimate the price of petroleum.

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Original Research

Impact of Self-Directed Career Attitude on OCB in SMEs: Mediating Role of Trust

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Abstract

The self-directed career attitude involves assuming responsibility and authority over one's career trajectory and actively directing one's professional development. This study examines the impact of self-directed career attitude (SDCA) on organizational citizenship behavior (OCB). This study also examines the mediating role of trust between the self-directed career attitude and OCB. Four hypothesis was developed to test the direct and indirect relationship. Primary data was collected through a questionnaire and analyzed through partial least square structural equation modeling. The SPSS was used to analyze the demographic information. The underpinning theory used in this study was self-determination theory. The test results show the positive direct relationship of SDCA, OCB and trust. The results also show the significant positive mediating effect of trust between SDCA and OCB. This research contributes to comprehending the mechanisms and consequences of behavior on human resources, which is essential for effective career management and developing appropriate HR policies.

Keywords: Organizational citizenship behavior, Protean career attitude, Self-directed career attitude, Trust.

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Introduction

A person's career significantly impacts their sense of self and personal worth. Achieving objectives and receiving recognition and social standing can boost confidence and self-esteem. It provides opportunities for personal growth, self-actualization, and fulfillment. It allows individuals to pursue their interests, cultivate their skills, and achieve purpose and satisfaction. Typically, a prosperous professional trajectory leads to financial stability and security. Employment enables individuals to support themselves and their families, meet their financial obligations, and achieve a satisfactory standard of living. A profession offers opportunities for continuing education and career advancement. By participating in training, gaining experience, and establishing professional connections, individuals can increase their knowledge, acquire new skills, and advance in their careers.

A successful vocation will lead to a stable and secure position. It enables individuals to establish a solid professional reputation, cultivate valuable expertise, and increase their employability, thereby reducing the probability of unemployment or financial instability. Individuals can acquire transferable skills, such as problem-solving, communication, leadership, collaboration, and time management, through participation in a profession. These abilities have both professional and personal value.

Researchers have devised career theories, such as the protean career, to comprehend the significance of careers in the lives of individuals. The work of Hall and Foster (1977) established the foundation for the protean career model. Their 1975 book, Careers in Organizations, analyzed various career aspects. They discussed the protean career concept, the phenomenon of couples with multiple careers, the notion of equal career opportunities, and the evolving definition of career success. The PCA is a two-dimensional construct, with one dimension representing an autonomous career orientation.

The SDCA mindset involves assuming responsibility and authority over one's career trajectory and actively directing one's professional development. Achieving one's professional goals requires initiative, motivation, and dedication in decision-making and action-taking. This perspective results from thoroughly comprehending one's professional aspirations and goals. SDCA professionals develop SMART objectives for their careers. The objectives are broken down into manageable steps, and a strategic plan is developed. It is essential to routinely evaluate and revise your goals in light of changing conditions and emerging opportunities.

SDCA involves actively seeking opportunities instead of passively waiting for them to present themselves. It is prudent to pursue novel initiatives, challenges, and responsibilities actively. Engage in leadership roles, propose original ideas, and demonstrate personal and professional development commitment. These professionals build a robust network through active engagement with colleagues, industry professionals, mentors, and potential employers. Individuals can expand their professional networks by attending industry events, joining professional organizations, and utilizing online networking platforms. Develop symbiotic relationships that provide assistance, guidance, and opportunities. Self-reflection, commitment, and a proactive mindset are required to cultivate an SDCA outlook. Taking charge of one's career and

actively shaping one's professional trajectory increases the likelihood of success, satisfaction, and fulfillment in one's chosen field.

According to the theory of self-directed career attitudes, individuals with such attitudes are more likely to engage in OCB. Deci and Ryan (1985) developed the psychological theory known as self-determination theory (SDT). According to the SDT, individuals with a strong sense of self-direction are internally motivated to go above and beyond their formal employment responsibilities to contribute to their organization. The SDT and the concept of an SDCA demonstrate a convergence of fundamental principles. Both theories emphasize the importance of autonomy, intrinsic motivation, and personal agency in shaping an individual's behavior, including their attitudes toward professional development and decision-making. Both theories emphasize the importance of autonomy, intrinsic motivation, and personal agency in shaping an individual's behavior, including their attitudes toward professional advancement and decision-making. The experience of satisfaction and delight is often associated with the process of setting and achieving personal objectives, aligning with the principles of intrinsic motivation as emphasized by SDT. Dierdorff and Jensen (2018) discovered an association between SDCA and employee engagement in OCB. According to the authors, individuals who adopt a proactive career approach have a more comprehensive comprehension of their role in the organization, which motivates them to engage in behaviors that contribute to a positive organizational climate.

This research seeks to examine the association between SDCA and OCB and explore the potential mediating role of trust in this relationship. Four hypotheses are proposed for testing the model.

Literature Review

SDCA and OCB

OCB incorporates actions that employees take voluntarily to benefit their organization and coworkers outside the scope of their formal job duties. Organizational citizenship includes assisting others, collaborating with coworkers, volunteering for additional responsibilities, displaying loyalty to the organization, and nurturing a positive work environment.

An SDCA mindset frequently involves aligning personal values with the organization. Their commitment and dedication result in improved organizational performance. A proactive mindset is required for both SDCAs and OCB. Individuals with an SDCA are more likely to take the initiative and exceed the boundaries of their assigned job responsibilities. They exhibit OCB by actively pursuing opportunities to contribute to and positively influence their workplace. They are willing to go above and beyond their designated responsibilities because they demonstrate genuine concern for their organization's and coworkers' success. Even though an SDCA can improve OCB, it is essential to recognize that OCB is a voluntary choice. Not all individuals with an SDCA career approach will necessarily exhibit OCB. Factors such as organizational culture, leadership support, job satisfaction, and individual motivations influence participation in

OCB. A proactive mindset, alignment of values, talent development, motivation, and engagement can contribute to an SDCA and OCB.

There is scant evidence supporting a correlation between SDCA and OCB. Rodrigues, Guest, Oliveira, and Alfes (2015) found a correlation between SDCA and OCB among Portuguese employees. Joshi, Maheshwari, and Yadav (2021) discovered a correlation between a high SDCA and the likelihood that Indian employees will engage in OCBs such as punctuality, helpfulness, and knowledge sharing. Existing research indicates that SDCA and OCB are positively correlated (Iqbal, Li, Yang, & Sindhu, 2022). Additional factors, such as organizational support, may influence the intensity of the relationship.

SDCA and OCB are distinct concepts, but they can be related to a person's professional development and behavior in the workplace. Consequently, the following hypothesis was suggested:

H1: SDCA positively influences the OCB

SDCA and Trust

Trust is essential to an organization's and its employees' success and well-being. Individuals' confidence, belief, reliance on an organization's intentions, dependability, competence, impartiality, and ethical behavior comprise organizational trust. Trust enhances psychological security and employee engagement. Corporate trust positively influences employee commitment, motivation, and investment in the organization's success. Trust fosters a positive work environment that encourages employee loyalty and dedication. Increased levels of trust can substantially boost employee retention and satisfaction. When employees have trust in their organization, they tend to feel valued, respected, and supported. Trust reduces employee turnover and increases employee loyalty, resulting in a more stable and devoted workforce.

In the workplace, SDCA and trust are interconnected and mutually reinforcing. Trust is essential for the development of a self-directed career mindset. When employees trust their organization, leaders, and coworkers, they are more likely to feel empowered and confident enough to take charge of their career development. Individuals have confidence in receiving fair treatment, acknowledgment of their efforts, and access to opportunities for personal growth in an environment characterized by trust. An SDCA mindset involves actively seeking growth, development, and advancement opportunities. Trust is essential to the success of this procedure. Trust encourages taking risks, seeking out challenges, and investigating new avenues without fear of adverse outcomes. An SDCA involves the formation of professional networks and participation in cooperative endeavors.

Zhang, Liu, and Wang (2016) found that trust mediated the relationship between SDCA and work outcomes, namely job satisfaction and organizational commitment. H. Lin, Yang, and Chiu (2013) found a correlation between an SDCA, supervisor trust, and organizational commitment. Judge, Cable, Boudreau, and Bretz (2012) conducted a Meta-analysis showing a correlation between SDCA and trust. Jepsen, Thomsen, and Klaas (2018) conducted a study to determine the influence of trust on SDCAs. Individuals with

higher levels of trust is more likely to involved in SDCA, such as actively seeking new opportunities and taking responsibility for their career development.

Trust among employees fosters collaboration, the exchange of knowledge, and the formation of mutually beneficial relationships. Trust promotes effective communication, cooperation, and exchanging ideas, fostering career advancement and personal development. Consequently, the following hypothesis is formulated:

H2: SDCA has a positive impact on trust

Trust and OCB

Trust at work refers to an individual's confidence and conviction in coworkers, supervisors, and work environment. A culture of trust fosters a collaborative work environment that is safe and comfortable. When employees have confidence in their coworkers, the likelihood of idea sharing, project collaboration, and mutual success support increases. Trust enhances team communication, collaboration, and performance. In order to facilitate successful collaboration and cooperation within an organizational context, trust is essential. Trust between coworkers facilitates information sharing, feedback solicitation and provision, and project collaboration. Trust facilitates effective communication, collaboration, and idea exchange by enhancing teamwork and collective problem-solving.

According to research, employee trust in their organization and leaders correlates favorably with feelings of safety, loyalty, and dedication (Mayer, Davis, & Schoorman, 1995). When employees perceive the organization and its leaders to be fair in decision-making, resource allocation, and employee treatment, they engage in behaviors that go above and beyond what is required of them. Trust fosters a favorable psychological contract between employees and the organization, resulting in greater job satisfaction and organizational commitment. Multiple studies have shown a correlation between employee trust and OCB. Employees are more likely to engage in OCB when they perceive their organization as trustworthy, fair, and supportive (Dirks & Ferrin, 2002). Individuals are motivated to engage in OCB and contribute to the organization's success because trust promotes fairness and reciprocity. Trust fosters an environment that supports employee feelings of value, respect, and appreciation, resulting in a larger propensity to exceed prescribed job duties. Trust significantly influences organizational justice perception, which plays a crucial role in promoting OCB (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Employees who trust their organization are likely to perceive decision-making processes as equitable, resulting in greater engagement in OCB. Therefore. Following is the formulation of the following hypothesis:

H3: Trust influence OCB

Trust as a mediator between SDCA and OCB

Trust enables workers to make decisions and take calculated risks without fear of adverse outcomes or unfair treatment. Trust within an organization fosters an environment in which employees can freely express their opinions, propose innovative

ideas, and exhibit initiative. Trust reduces resistance, improves communication, and facilitates the successful implementation of change initiatives. Trust in the organization and its leadership positively affects perceptions of organizational support, thereby increasing OCB. When employees have faith in the organization's commitment to their well-being and development, they are likelier to go above and beyond their formal obligations for the organization's benefit. Trust has a significant influence on OCB.

Numerous studies have investigated the function of trust as a mediator concerning innumerable variables. C. Lin, Tsai, and Chen (2018) found that OCB, trust, and SDCA have a mediated relationship. Zhang et al. (2016) research backs up this conclusion. According to a study by Aryee, Budhwar, and Chen (2002), trust mediates the relationship between organizational justice and work-related outcomes like job satisfaction, attrition intentions, and organizational commitment. Dirks and Ferrin (2002) found that trust mediates the relationship between leader-member exchange and various work outcomes, including job satisfaction, performance, and OCB. Eisenberger, Cummings, Armeli, and Lynch (2009) examined the role of trust as a mediator between perceived administrative support and various work outcomes, such as job satisfaction, organizational commitment, and turnover intentions.

The results indicate a significant relationship between SDCA, OCB, and trust. Employees with an SDCA exhibit higher trust toward their supervisors and the organization. Trust can improve OCB, resulting in numerous organizational benefits. Moreover, Seibert, Kraimer, and Crant (2001) examined how SDCAs mediate the relationship between career motivation and OCB. The results showed that SDCAs partially mediated the relationship between career motivation and OCB. The relationship between SDCA and OCB was moderated, according to Sturges, Guest, Conway, and Davey (2002), by organizational support.

H4: Trust plays a mediating role between SDCA and OCB

Figure 1 Conceptual model

Methodology

Sampling

The sample for this research comprises employees of small and medium-sized enterprises (SMEs) in Pakistan. The optimal sample size for this study was determined to be 195 based on the G power analysis. To mitigate sampling error, the researchers gathered data from a sample size of 300 participants. The G power analysis was described. The sample used in this study was representative of the entire population, with a reliability of 0.90 and consistent responses across all dimensions.

Data collection procedure

Data were collected from participants using an online survey technique. Out of the 500 participants, 200 valid responses were obtained. The study included 125 males (62%) and 75 females (38%). The study had a total of 200 respondents, categorized by age as follows: 31 (16%) were under 25, 93 (47%) were between 26 and 35, 54 (27%) were between 36 and 45, and 22 (10%) were over 45. This study examined career levels across different positions, including supervisor/worker (11 individuals, 6%), middle management (135 individuals, 67%), manager (52 individuals, 26%), and owner/CEO (2 individuals, 1%). The respondents had degrees at different levels: basic/secondary (10), undergraduate (76), master's (112), and doctoral (2). The percentages for these degrees were 5%, 38%, 56%, and 1%, respectively. Tables 1 and 2 present demographic variations and various population characteristics.

Table 1 | Respondents' characteristics

Respondents' characteristics	Frequency	Percent
Gender		
Men	125	62
Women	75	38
Total	200	100
Age group		
Under 25	31	16
26-35	93	47
36-45	54	27
Over 45	22	10
Total	200	100
Education		
Secondary or Basic	10	5
Undergraduate	76	38
Masters	112	56
PhD	2	1
Total	200	100
Position		
Supervisor/ Worker	11	6
Middle Manager	135	67

Respondents' characteristics	Frequency	Percent
Manager	52	26
Owner/ CEO	2	1
Total	200	100

Table 2 | Enterprise characteristics

Enterprises characteristics	Frequency	Percent
Type of enterprise		
Educational sector	80	40
Health & care services	45	22
Other services	75	38
Total	200	100
Size of enterprise		
5 - 30	103	52
31 - 60	66	32
61 - 99	18	9
100 or higher	13	7
Total	200	100
Age of enterprise (in years)		
1 - 5	40	20
6 - 10	82	41
11 - 15	58	29
15 or higher	20	10
Total	200	100

Measures

Standardized measures were used to gather SDCAs, OCB, and work performance data. Briscoe, Hall, and DeMuth (2006)'s 8-item PCA scale served as the basis for evaluating SDCA with the Likert scale used in this study ranging from 1 (limited) to 5 (great). The study collected data using the OCB scale developed by Lee and Allen (2002). Participants' responses were assessed using a five-point Likert scale, with 1 representing "never" and 5 representing "always." The trust scale, derived from Morgan and Hunt (1994) work, consists of nine items assessing various trust dimensions.

Results and discussion

Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed for data analysis. Haenlein and Kaplan (2004) argue that PLS-SEM is more preferable to other traditional multivariate methods. PLS-SEM provides statistically significant analysis using a bootstrapping process, which creates standard errors for path coefficients (Hair, Ringle, & Sarstedt, 2013; Nitzl, Roldan, & Cepeda, 2016; Preacher & Hayes, 2008). Initially, several assumptions were examined, including multicollinearity, normality, and common method variance (Podsakoff & Organ, 1986; Tabachnick, Fidell,

& Ullman, 2007). Hair, Black, Babin, and Anderson (2010) employed a two-step approach consisting of measurement and structural models to analyze the data.

Measurement model assessment

To evaluate the measurement model, it is necessary to assess each concept's reliability, internal consistency, convergent validity, and discriminant validity (Hair et al., 2010; Henseler, Ringle, & Sinkovics, 2009). We utilized PLS-SEM due to its widespread acceptance among scholars in multiple disciplines. This study is suitable due to its novel criteria for conducting critical data analysis (Hair, Risher, Sarstedt, & Ringle, 2019). Factor loading was utilized to assess the reliability of individual items (Duarte & Raposo, 2010; Hair, Sarstedt, Ringle, & Mena, 2012; Hulland, 1999). A minimum threshold of 0.7 or higher is required (Hair et al., 2019). Table 3 demonstrates that all of our outer loadings satisfy the criteria.

Table 3 | Mean, SD, CA, CR, and AVE

Constructs	Mean	SD	CA	CR	AVE
SDCA	3.21	0.87	0.928	0.941	0.666
Trust	3.20	0.88	0.919	0.933	0.607
OCB	3.23	0.85	0.953	0.958	0.587

SD, standard deviation; CA, Cronbach alpha; CR, composite reliability; AVE, average variance extracted.

Internal consistency

Researchers commonly employ composite reliability and Cronbach's alpha to ensure the instrument's internal consistency. The minimum threshold typically used for these measures is 0.70 (Bagozzi, Yi, & Phillips, 1991; Hair, Ringle, & Sarstedt, 2011; Hair et al., 2019; Joseph F Hair Jr, Hult, Ringle, & Sarstedt, 2016). Table 3 presents the structures' satisfactory internal consistency and reliability (Bagozzi et al., 1991). The variance inflated factor (VIF) assesses method bias and collinearity effects, with a recommended threshold of 5 or lower (Ringle, Wende, & Becker, 2015), as shown in Table 4.

Table 4 | Factor loadings and variance inflated factor

Construct	Item	Loading	VIF
Self-directed Career Attitude	SDCA1	0.759	1.861
	SDCA2	0.815	2.321
	SDCA3	0.847	3.781
	SDCA4	0.858	3.223
	SDCA5	0.835	2.640
	SDCA6	0.804	2.477
	SDCA7	0.810	3.055
	SDCA8	0.798	2.446
Trust	T1	0.767	1.910
	T2	0.777	2.325

Construct	Item	Loading	VIF
	T3	0.799	2.501
	T4	0.720	1.768
	T5	0.743	1.916
	T6	0.799	2.286
	T7	0.791	2.236
	T8	0.832	2.841
	T9	0.779	2.386
OCB	OCB1	0.702	1.938
	OCB2	0.772	2.325
	OCB3	0.802	2.637
	OCB4	0.687	1.912
	OCB5	0.755	2.293
	OCB6	0.725	2.219
	OCB7	0.768	2.502
	OCB8	0.734	2.269
	OCB9	0.844	3.664
	OCB10	0.788	2.584
	OCB11	0.831	3.351
	OCB12	0.794	2.980
	OCB13	0.797	2.633
	OCB14	0.749	2.216
	OCB15	0.754	2.382
	OCB16	0.741	2.265

Note: VIF = Variance Inflated Factor

Convergent and discriminant validity are assessed using the average variance extracted (AVE) (Fornell & Larcker, 1981). A minimum threshold of 0.5 or higher is typically required to establish convergent validity (Chin, 1998). Table 3 presents our findings regarding convergent validity. Table 3 demonstrates that all latent variables had AVE values that exceeded the cutoff. Table 5 indicates that the square root of AVE exceeded the correlations among the latent components. The discriminant validity of the current study is satisfactory across all parameters.

Table 5 | Discriminant validity

Constructs	OCB	SDCA	Trust
OCB	0.766		
SDCA	0.701	0.816	
Trust	0.703	0.711	0.779

Structural model assessment

The R^2 value quantifies the model's predictive capability (Sarstedt, Ringle, Henseler, & Hair, 2014). Chin (1998) established the following thresholds for the R^2 value: 0.60 for strong, 0.33 for moderate, and 0.19 for weak. Table 6 displays the R^2 and Q^2 values

for OCB and trust. The R2 value for OCB is 0.576, and for trust is 0.506. The Q2 value for OCB is 0.328, and for trust is 0.296. The F2 values for trust (0.198) and SDCA (0.193) demonstrate the validity of our research model.

Table 6 | Predictive Relevance and Model Fit

Constructs	Q^2	R^2	F^2
OCB	0.328	0.576	
Trust	0.296	0.506	0.198
SDCA			0.193

The study employed the bootstrapping technique with 5,000 bootstrap samples to assess the level of significance of the hypothesis (Hair et al., 2010; Hair et al., 2011; Joe F Hair Jr, Sarstedt, Hopkins, & Kuppelwieser, 2014; Henseler et al., 2009). Table 7 and Figure 2 provide evidence supporting H1, which suggests a strong relationship between SDCA and β (β = 0.407, t = 5.271, p = 0.000). Thus, the confirmation of H1 is established.

Hypothesis 2 was supported by the findings, which revealed a significant correlation between SDCA and trust (β = 0.711, t = 20.245, p = 0.000). The coefficients β = 0.413, t = 5.131, and p = 0.000 supported hypothesis 3. The study's results supported the mediating role of trust in the relationship between SDCA and OCB. The analysis showed a significant result (β = 0.294, t = 4.981, p = 0.000), confirming partial mediation according to Baron and Kenny (1986).

Table 7 | Structural model

| Hypothesis	Relationship	Beta	SE	t-Value	p-Value	Decision
H1	SDCA → OCB	0.407	0.077	5.271	0.000	Supported
H2	SDCA → Trust	0.711	0.035	20.245	0.000	Supported
H3	Trust → OCB	0.413	0.080	5.131	0.000	Supported
H4	SDCA→ Trust → OCB	0.294	0.059	4.981	0.000	Supported
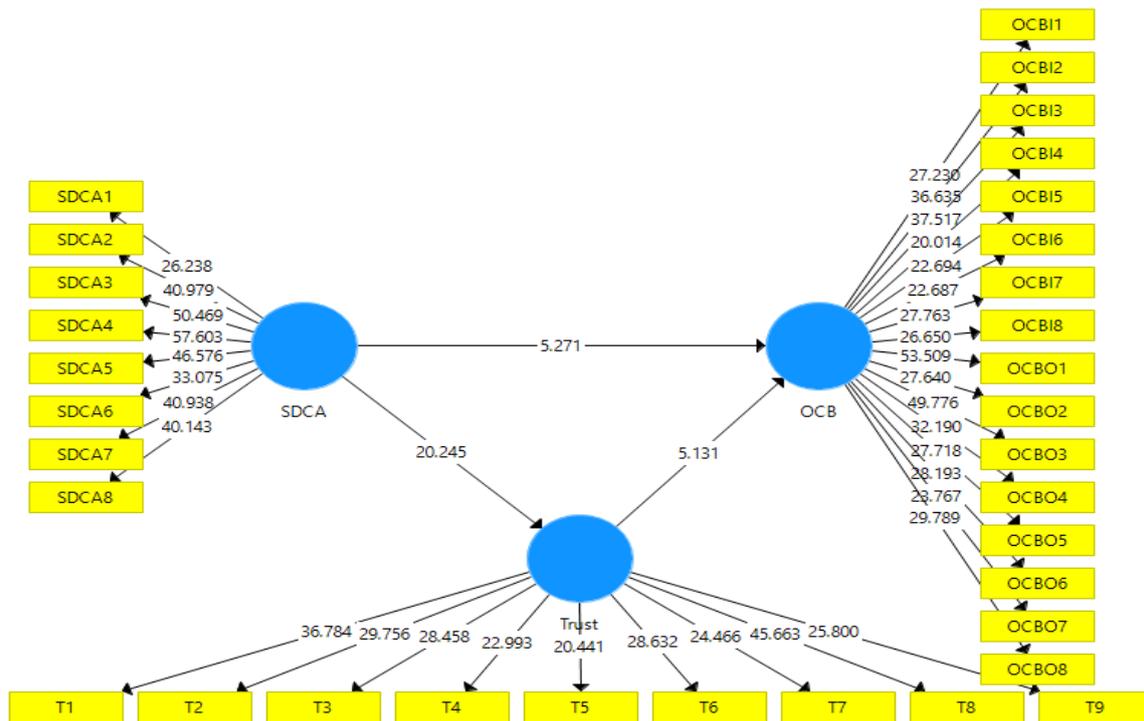
Figure 2 | Hypothesis results.

Discussion

This study aimed to investigate the direct and indirect effects of SDCA on OCB via a mediation mechanism. The results imply a strong relationship between SDCA and OCB. These results corroborate previous research indicating that PCA professionals benefit their employers and themselves (Iqbal et al., 2022; Rodrigues et al., 2015). A high SDCA is associated with solid organizational identification and a sense of stewardship over the organization's success. This may increase their propensity to exert additional effort on behalf of the organization. In addition, individuals with SDCA may demonstrate a greater tendency for intrinsic motivators, such as the pursuit of personal development and knowledge acquisition. Individuals can engage in OCBs without expecting explicit rewards if intrinsically motivated.

In addition, the results reveal a positive correlation between SDCA and trust. When employees trust their organization, leaders, and coworkers, they are more likely to feel empowered and confident enough to take charge of their career development. Individuals have confidence that they will receive fair treatment, acknowledgment of their contributions, and access to opportunities for personal growth in an environment characterized by trust. SDCA employees are more likely to trust their supervisors and the organization. Increased job satisfaction, organizational commitment, and performance are some positive outcomes that can result from trust.

The results demonstrate a correlation between trust and OCB. Employee participation in OCB is commonly viewed as requiring trust. Employee trust in their organization, supervisors, and coworkers is positively correlated with psychological safety and the

belief that their efforts will be recognized. Trust fosters an environment that encourages individuals to go above and beyond their assigned responsibilities and engage in discretionary actions. Trust positively influences the propensity of individuals to engage in prosocial behaviors, such as assisting others, exchanging information, and providing assistance, all of which are essential components of OCB.

Conclusion

In conclusion, disruption and disorder are a hallmark of modern careers, impacting individuals and businesses. There has been limited scholarly attention on the potential associations between modern career perspectives and OCB. By incorporating developing nations for the first time, this study lends credibility to the individual and organizational contexts of PCA dimensions. Organizations should prioritize the development and influence of emerging professions, both within their operations and beyond. Organizations prioritizing trust, fairness, and support are more likely to encourage OCB among their employees. Employees who perceive trust and value from their organization are more likely to engage in behaviors beyond their formal job responsibilities, ultimately contributing to the success of the organization as a whole.

The development of emerging professions should be a priority for organizations seeking to attain individual and organizational objectives. This research contributes to comprehending the mechanisms and effects of behavior on human resources, which is essential for effective career management and developing appropriate HR policies (Baruch, 2014). Management should evaluate the impact of different work layouts and organizational support programs on the career perceptions of employees. This study examines the connection between effective employee administration in new career management and corporate growth in developing nations. PCA facilitates two-way communication between organizations and their employees, facilitating the exchange of information and innovative ideas to improve productivity. This ultimately facilitates organizations' ability to reach prospective business partners and target audiences in preparation for future collaborations.

Limitations and future work

The results of our study establish a robust basis for further investigation into novel career constructs. In line with its innovative contribution to the existing literature on career development, this study acknowledges certain limitations that warrant attention and further exploration in future research endeavors. This manuscript's emphasis on small and medium-sized enterprises is a significant limitation, as it may limit its generalizability. Future researchers can use additional variables to enhance their results. In addition, the study does not address gender disparities and fails to provide any information regarding the impact of demographic characteristics on outcome factors. Furthermore, this investigation can be expanded by investigating numerous cultural factors. The research promotes the replication of findings across different cultural contexts and diverse samples to enhance the generalizability of the results.

Theoretical and practical implications

PCA has garnered considerable interest in Western culture. However, it is essential to investigate this concept in Eastern culture to assess potential differences. This study thoroughly examines the contemporary vocation and its effects on organizations and individuals. This study analyzes several SDCA outcomes that have not been studied extensively. It also illuminates additional factors that may cause academicians to reevaluate and reexamine PCA concerning these factors. This highlights the theoretical significance of the investigation.

This research assists HRD in comprehending employees' perspectives on career advancement in relation to new career concepts. Conversely, the implementation of organizational career management policies that facilitate self-management can effectively support talented individuals in job retention and goal attainment, thereby mitigating the likelihood of their departure from their present roles. In a rapidly changing world, the study's findings may assist human resource managers in devising policies in line with contemporary career trends, thereby enhancing the convenience and suitability of employment for both employees and employers. Developing HR policies that promote innovative career concepts can effectively reduce employee turnover.

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Case Study

Kirkpatrick Model as Evaluation Training Program for Assessor: Case Study of Government Employee

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Abstract

The study analyzed the evaluation of training programs provided to prospective assessors at the Ministry of Energy and Mineral Resources. The object of study is a trainee who is projected as an assessor. The total number of participants was 23 people. Kirkpatrick's model served as the basis for evaluating the training program. The four evaluation levels analyzed include reactions, learning, behavior, and outcomes. The four stages of Kirkpatrick's model can provide a description of the training process and recommendation items to the organization. This recommendation is given for continuous improvement of training quality. Data analysis using a mix-method approach is due to the combination of primary and secondary data. The results of the study explained that the four levels in the Kirkpatrick model were adequacy in the implementation of the training program. The four models explain that all training components and processes are running well. Prospective assessors who are trained are given high expectations to remain in training at an advanced level. The evaluation level provides several recommendations including reformulation of training planning, learning related to accreditation standards, professional ethics-based behavior, and work results adjusted to excellent service accompanied by high quality. Recommendations on the results of training evaluations can be carried out to improve the quality of the program in accordance with the needs of the organization. Training should be conducted adaptively, with high flexibility, and new competencies for prospective assessors. The results of the training can make a significant contribution to the expectations of the organization.

Keywords: Competency Improvement, Kirkpatrick Model, Training Program.

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Introduction

Human resources are one of the components of organizational success (Gabčanová, 2011). This role is carried out to create job targets, strategies, innovations, and achieve organizational goals. Employees can be a determining factor in the success of achieving job targets (Bayraktar et al., 2017). Competence is one of the problems of organizing to survive in the era of globalization. This must be supported by the reliability of the technology used by employees. This process must be complemented by the formulation of training and education programs for all employees. The organization has an obligation to prepare employees in the operationalization of business processes. Training programs should be prepared according to the scale of business priorities.

Online-based training is a technicality of providing new competencies through virtual technology (Fauth & González-Martínez, 2021). The online learning system is implemented to meet the needs of users who emphasize technology-based learning. Online learning can create a virtual learning environment that encourages the effectiveness of training implementation. The use of website media allows more and more training data information to be obtained, providing more interesting and complete services. For this reason, ideally educators and participants always access various data information quickly. E-learning-based learning has not been utilized optimally, and there are frequent internet network disruptions (Kumar, 2015). At the end of a training program, an evaluation process must be carried out after the implementation according to the initial planning. Evaluation is very important in an education and training program to ensure the achievement of improving employee competence. Education and training evaluation is an activity process to obtain data information about teaching and learning outcomes experienced by students (Tasca et al., 2010). The results of the evaluation are used as an information base for the successful implementation of the training program.

The quality of the training program is determined by changes in behavior and work patterns. Behavioral alterations that include an improvement in abilities in the cognitive, affective and psychomotor areas. Training evaluation has a function as a controller of the process and results of the training program so that a systematic, effective and efficient training program can be guaranteed. Training evaluation is a process to collect data and information needed in measuring success on changes in work patterns accompanied by improved performance (Topno, 2012). Training evaluation is more focused on reviewing starting from the process, assessment, and impact of training associated with HR performance.

The Human Resources Development Agency of the Ministry of Energy & Mineral Resources has several training programs as part of improving employee competence. The objectives of implementing the training include producing assessors who meet state standards, improving the quality of teachers and competency examiners according to their fields, government employees getting recognition for the quality of competencies possessed, improving the quality and productivity of government employees through competency standardization with competency tests and improving a positive image through professional certification. This institution is under the coordination of the ministry which has the task of organizing the development of human resources in the fields of oil and gas, electricity, minerals and coal, new energy, renewable energy, energy

conservation, and geology. Government regulation number 23 of 2004 concerning the National Professional Certification Agency (BNSP) for this training was first implemented by BNSP in 2004 until now. Below are the labor needs in the fields of oil & gas, minerals & coal, and electricity as follows:

Table 1. Energy and Mineral Sector Labor Needs

Sector	Labor Needs
Oil & Gas	356.000
Mineral & Coal	350.000
Electrical	150.000

One of the training divisions at the Human Resources Development Agency of the Ministry of Energy & Mineral Resources has an accreditation agency. This institution is named Accreditation of Education and Training Institutions in the energy and mineral resources sector. Its main task is to ensure that the use of KKNI standards in all sectors can be implemented properly, recognition for the ESDM sector workers, increase the competitiveness of Indonesian workers from the invasion of foreign workers, ensure that foreign workers working in Indonesia have competencies according to business needs. The challenge ahead is to prepare assessors through education and training for the implementation of work implementation standards that can be implemented comprehensively by all companies engaged in the energy sector.

Based on data from the Ministry of Energy and Mineral Resources (ESDM), there were 93 accidents in mining areas in 2021, down 27.3% from the previous year. This number includes 36 minor accidents and 57 serious accidents. Of the 93 mining accidents in 2021, as many as 11 people died as a result of work accidents. Throughout 2019-2021, the number of mining area accidents has decreased, as has the number of deaths. The highest number of accidents and deaths occurred in 2019, with 133 accidents, of which 27 were minor accidents, 106 serious accidents, and 24 people died. There are several things that often cause accidents in the mining area, namely tools or safety systems that are not there, incomplete, and do not function properly. The process of training provided to employees for competence as accreditation assessors. This assessor is tasked with analyzing and measuring the feasibility of competencies given to the energy & mineral resources labor sector.

Some studies use the Kirkpatrick model as a basis for evaluating training programs (Alsalamah & Callinan, 2021; Dorri et al., 2016; Mehale et al., 2021). This model is suitable for seeing changes in behavior as a result of training provided to employees. Evaluation of training is not only in the form of a certificate and is given after attending the program. The result of training is that changes in work patterns, knowledge, and attitudes can increase performance productivity. This study evaluates the training program provided to assessors to ensure eligibility standards in assessing accreditation or implementation of work in a business organization or company. The assessor of this training is a government employee under the auspices of the Ministry of Energy and Mineral Resources (ESDM). Referring to the 2004 AECT definition of Educational Technology where in the definition there are efforts to improve performance by creating, using / utilizing and managing the right processes and sources of technology. From this

definition, researchers want to manage the process and improve performance by evaluating the assessor's training program to obtain information and data to be considered in organizing the assessor's training program.

This study analyzed the evaluation of training carried out by theBad an Human Resources Development Ministry of Energy & Mineral Resources. The focus of the research is the implications of the resulting training program for participants as potential assessors. The four levels evaluated include reactions, learning, behavior, and outcomes. Mapping the results of the evaluation is used as a recommendation for the quality of training in the depan. Training must be one of the human resource development programs equipped with new competencies. This assessor is the making of feasibility decisions to business people so as to produce quality in accordance with the standards set by the government. Training evaluations will be mapped and used as a constructive model of recommendations to the organization.

Literature Review

Employee Training

The main focus of training as a process to improve the knowledge, attitudes and skills of employees. Training can be defined as a systematic effort to improve the knowledge, skills, and work attitudes of employees through the learning process (Eby et al., 2019; Vijayabanu & Amudha, 2012). The training process is carried out consciously and deliberately to change human behavior both individually and in groups. The training process provided to employees systematically in the form of concepts, knowledge, and attitudes (Khan et al., 2020). These three elements are directed to realize the goals to be achieved by an organization or company. In other words, training is planned and continuous as a process designed to meet the present and future training needs of individuals through improving knowledge and skills. The ultimate goal of training in improving employee performance and work productivity (Waqanimaravu & Arasanmi, 2020). Organizations use training as part of efforts in developing human resources primarily focusing on intellectual abilities and personality. Training is carried out to develop the ability of human resources to support the needs in an increasingly modern era and business disruption. Training is considered to be a solution to make employees more qualified, increase insight and knowledge. The objectivity of training is directed to positive changes that correlate with the field of work. The implementation of the pelatih anmust be planned according to organizational needs and sustainable to produce cloud karyin the operationalization of business processes.

Training is one of the functions of human resources to provide the latest abilities and skills for employees (Dessler, 2020). Each employee is well prepared in the performance of job duties. The basic core of a training is to provide the latest knowledge, concepts, and skills related to the field of work. The focus of training is on providing specific skills and improving old work patterns implemented by employees. The selection of training methods is adapted to the conditions and needs of the organization. The direction of training is more emphasized on improving the abilities and expertise of employees in accordance with the field of work. The target of training achievement is to improve individual and team performance in a position or job function that is technical in

nature(Guan & Frenkel, 2019).   The training process becomes integrative andcomprehensive according to the fulfillment of new competencies. An indication of the success of a training has a positive impact on employees and the organization. Several stages of training preparation include needs analysis, employee preparedness in participating in training, creating a learning context, execution of training programs by employees, formulation of training evaluation plans, choosing training methods, and the training evaluation process (Noe et al., 2009). Below is the training preparation process as follows:
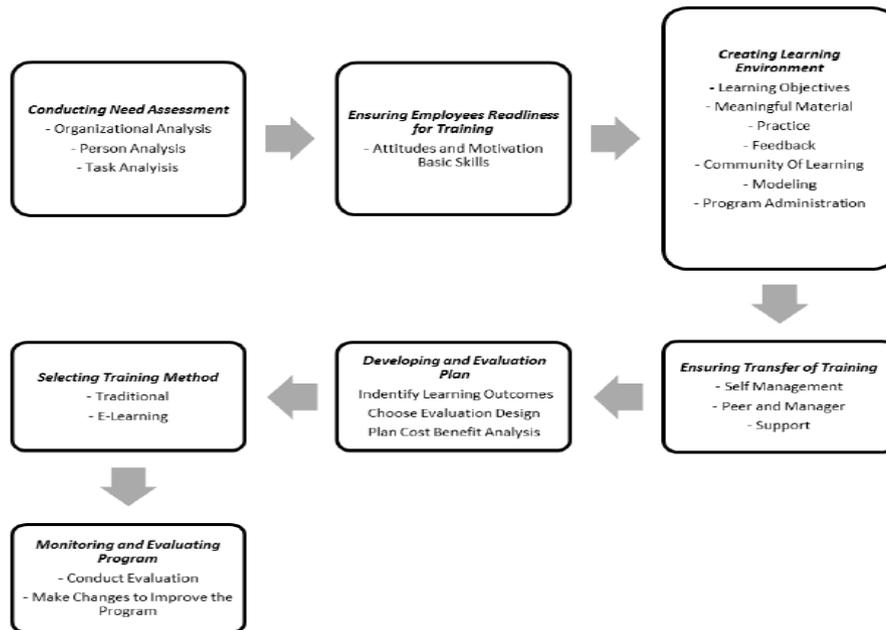
Figure 1. Training Preparation Process

Several studies explain that training has important implications in employee and organizational performance (Barba Aragón et al., 2014; Garavan et al., 2021). Training programs are created to be used as learning and organizational experiences so as to ensure the effectiveness of work. Organizations must carry out three initial stages, namely identification of training needs, implementation of training, and evaluation of training (Cohen, 2017; Teasdale et al., 2003). Identification of training needs is an activity for mapping problems and the urgency of implementing activities as part of organizational support in achieving business targets. At this stage the organization makes plans, training themes, methods, resource persons, and technical ones that are tailored to the needs of the work. The implementation of training is a process of training execution given to participants related to material, knowledge, skills, and practices directed at changing work patterns (Baethge-Kinsky, 2020; Cascio, 2019). This process gives new concepts and technicalities to employees according to the field of work. Training evaluation is the process of conducting a trial of training results to employees for practice in accordance with the field of work (Lantu et al., 2021; Mehale et al., 2021). The organization calculates the amount of cost with the results of performance implemented by employees.

Kirkpatrick Model

The Kirkpatrick model is a training evaluation model using four levels of success that have positive implications for the learning process (Sahni, 2020). The four valuation levels consist of level 1 (reaction), level 2 (learning), level 3 (behavior), and level 4 (results). Level 1 is an evaluation process that measures how learners react to training or in other words measures learning participant satisfaction (CAHAPAY, 2021). Level 2 is an evaluation process that measures the learning process in training, namely the transfer of knowledge (Kaufman & Keller, 1994). Level 3 (Behavior) is an evaluation process that aims to find out the extent to which behavior changes occur after participants take part in training (Reio et al., 2017). Level 4 is an evaluation process to measure the final results that occur after participants take part in the training (Reio et al., 2017). The end result can be an increase in productivity or performance, an increase in quality, a decrease in costs, a decrease in the rate of work accidents, an increase in sales, a decrease in the level of employee entry and exit, and an increase in profits.

A frequently used training evaluation approach is the Kirkpatrick model. The four levels used in the model can explain everything from the planning process to the results of the training program. The advantages of Kirkpatrick's model include a more comprehensive evaluation matrix, especially the focus of training aspects (cognitive, affective, & psychomotor), measurable evaluation objects on all components of training from inputs to outputs, and easier to apply to the evaluation process so that the interpretation of training data can be explained comprehensively (Ulum, 2015). Below is a picture of the evaluation level on the Kirkpatrick model as follows:

| Level 1 | Level 2 | Level 3 | Level 4 |
| Reaction | Learning | Behavior | Results |
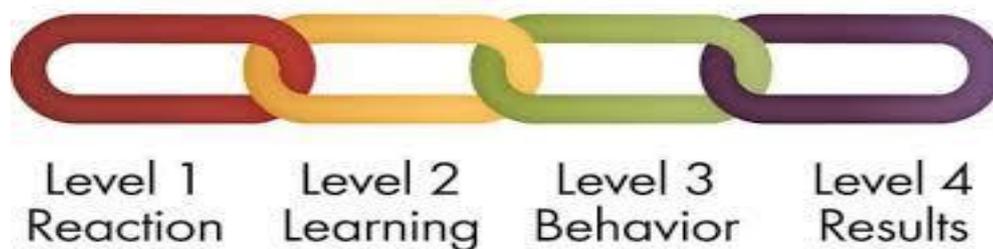
Figure 1. Kirkpatrick Model Evaluation Level (D. L. Kirkpatrick & Kirkpatrick, 2008)

Figure 1 shows the 4 levels present on the Kirkpatrick model. Level 1 shows the reaction of participants after attending the training. Indicators used by seeing participants have motivation, interest, and satisfaction in the training program. The aspects measured include the provision of materials, the availability of facilities, training media, activity schedules, and the presentation of consumption to training participants. Level 2 shows aspects of learning with changes in attitudes, knowledge, and skills after attending the training program. The measured components include knowledge, attitudes and skills as a result of learning from the training program. Level 3 indicates a change in the participant's behavior from the training process. Changes in behavior are expected in the presence of work patterns with positive implications for the achievement of job targets. The aspects measured are the strong desire for change by participants, participants' understanding of work activities, suitability of the work climate, and employee performance rewards. Level 4 shows the final result of the training process. The final result expected by the

organization is an increase in production quality, employee performance, cost efficiency, a decrease in work accidents, and employee retention. Below is the evaluation table of the training program with the Kirkpatrick model as follows:

Table 2. Four Levels of Kirkpatrick's Model Evaluation

No.	Evaluation Level	Evaluation Indicator
1.	Reaction	Training planning starts from the participants' guidance, instructors, context, facilities, and supporting facilities to participants.
2.	Learning	Learning process, interactive methods, instructor ability capacity, participant understanding speed, and punctuality
3.	Behavior	Changes in work behavior oriented towards profesi ethics
4.	Results	The quality of work is based on productivity,ima pr service, and customer satisfaction.

Table 2 shows the scope of evaluation on the Kirkpatrick model. At each level achievement indicators must be met on the basis of a training program. Indicators of measuring the level of reaction evaluated include committee services, quality of instructors, training curriculum, learning process, training materials, learning methods, classroom atmosphere, main facilities and supporting facilities, use of media and resources, value and meaningfulness of training content, assessment system. All levels can be used as a dimension for assessing the effectiveness of training programs. This model is suitable to be used as a basis for evaluating training programs to obtain the effectiveness expected by the organization. Based on the explanation of the theoretical review, the conceptual framework used as the basis for the research is as follows:
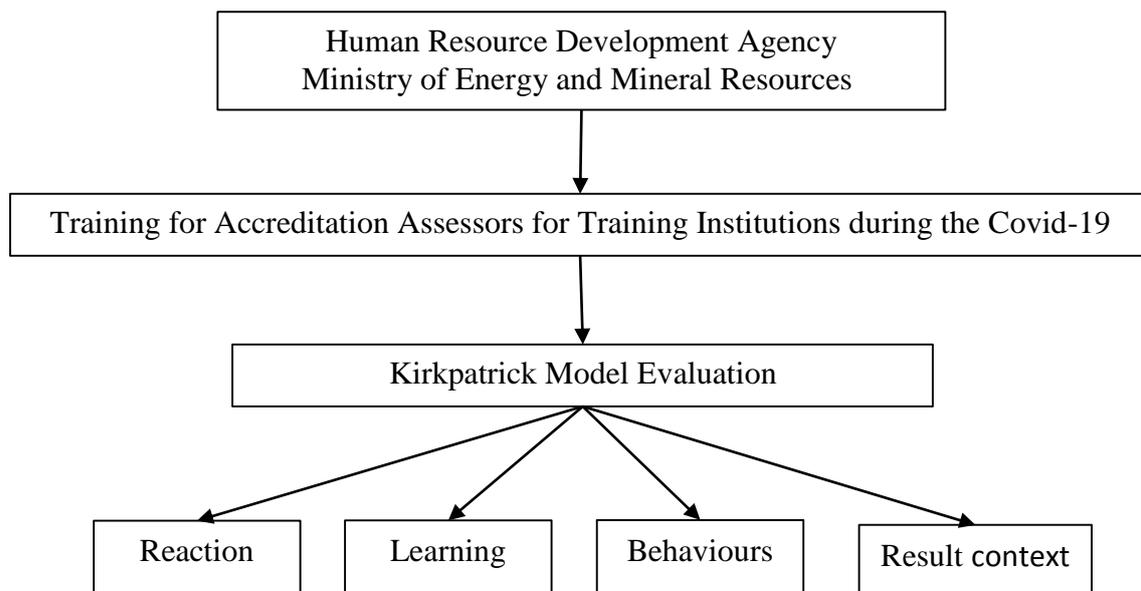

Figure 2. Research Concept (J. D. Kirkpatrick & Kirpatrick, 2016; Muslihin, 2017)

The picture above shows that the research focuses on the training program given to the assessor. The four levels used as evaluation targets are reaction, learning, behavior, and results. The training process is carried out online using the Zoom application. The problem faced by trainees is not focused and does not understand the material of the training material. Kirkpatrick's model served as the basis for training evaluation. All the levels in Kirkpatrick's model are able to explain well the training process and the results obtained to the participants. The hope of the training program is that there will be a change in the behavior, work patterns, and mindset of all employees in the company's business. Below are the evaluation indicators of training programs evaluated using the Kirkpatrick model as follows:

Table 3. Kirkpatrick Model Evaluation Dimensions and Criteria

Level Model Kirkpatrick	Evaluation Dimensions	Evaluation Criteria
Reaction	The relevance of training	Training serves to improve the career path of employees Have added value to the profession Have meaningfulness in the work environment Having a novelty for the improvement of the profession
	Materials and Exercises	The material is easy to understand Exercise Material according to the context The material is clearly developed
	Reaction to training instructions	Instructors use appropriate methods program training Instructors use strategies that match the training theme Instructors provide inquiring opportunities Instructors provide effective feedback to participants
	Facilities and procedures	Adequate facilities Training is carried out according to the schedule The organizer gives directions to the training procedure
Learning	Timeliness	Implementation of teaching and learning Completion of the learning process
	Application of Learning Methods	Variations in the delivery of learning methods Evaluation of the learning process

Level Model Kirkpatrick	Evaluation Dimensions	Evaluation Criteria
	Learning Evaluation	Knowledge Soft & hard skills
Behaviour	Character	Adding new knowledge Gaining authority in creativity in the workplace
	Attitude	Creative Innovative Motivation Adaptive Visionary Professional Responsiveness Problem solving Discipline Collaborate
	Behavior	Applying the knowledge gained in the workplace. Assist in solving problems in the workplace. Gives a new spirit in work.
Results	Reliable	Have integrity in duties and responsibilities. Responsibility in carrying out duties and obligations. Confidence and character in the face of problems.
	Moral	Upholding social norms. Prioritizing ethics and morality in his daily life.
	Professional	Always work with honesty and responsibility. Support the progress of the company. Prioritizing duties and obligations. Provides the best performance.

The table 3 explains that the evaluation focus at level 1 (Reaction) has several indicators consisting of materials, facilities, consumption, and instructors during training. At this level it is more focused on analyzing the training planning process along with its supporting facilities provided to all participants. Level 2 (Learning) has several indicators, namely the timeliness of learning and learning evaluation. This level emphasizes the aspects of evaluating the implementation time and participants' understanding of the training material. The speed of understanding of participants becomes a point of success in accordance with the expectations of time by the

organization. Level 3 (Behavior) has several indicators that are used as evaluation materials including character, attitudes, and behavior. The focus of this level puts forward changes in the pattern of kerja and the character of employees towards the training program. The organization's expectation is to improve performance with new competencies given to employees. The process of work performed by employees is becoming better and of high quality. Level 4 (Four) has several dimensions consisting of reliable, moral, and professional. The last level sees the character possessed by employees as the main principle in the implementation of work. Achievements that can be seen are consumer satisfaction, a decrease in the number of complaints, and an increase in the profitability of the organization. These four levels became the quadrant of training evaluation with the Kirkpatrick model.

Research Methods

The research uses a mixed qualitative approach. The research process uses a mix-method that aims at a combination of qualitative and quantitative processes according to the needs of data interpretation (Schindler & Cooper, 2014). Quantitative research is used to obtain information about the evaluation of organizers, teachers and trainees. Qualitative research is used to explore qualitative data in the form of input from respondents regarding training. The mix method is a combination of qualitative and quantitative research approach to analyze data tailored to your needs(Creswell, 2013). Kirkpatrick's model was chosen as the cornerstone of training evaluation to explore four aspects of employee performance improvement changes and processes. This evaluation model consists of 4 interrelated levels in explaining the training program. Level 1 (Reaction) is an evaluation level that measures how participants react to the training they are participating in, or in other words measures the satisfaction of learnersn. Level 2 (Learning) is an evaluation that measures the learning process in training, namely the transfer of knowledge. Evaluation at this level aims to measure participants' learning outcomes, including changes in attitudes, knowledge and skill improvement. Level 3 (Behavior) is an evaluation that aims to find out the extent of behavior changes after participants take part in the training. Level 4 (Results), which is an evaluation to measure the results or final results that occur after participants take part in the training.

The object of the training is the assessor participants who take part in the competency improvement program by the Accreditation Training Institute of the Human Resources Development Agency of the Ministry of Energy and Mineral Resources. The number of trainees was 23 people. The data collection process uses questionnaires that are distributed to trainees. Interviews were conducted with the leadership of the training institute to describe the competency program to the assessors. Below is a list of research informants as follows:

Table 4. List of Informants/Data Sources

No.	Evaluation Level	Data Assesment	Data Sources
1.	Reaction	Measuring and evaluating how training participants react and feel satisfied with the training they are participating in (customer satisfaction). Feelings/Perceptions.	Trainees
2.	*Learning*	Measuring and evaluating how training participants are able to change their attitudes, knowledge, skills as a result of participating in the training program. Skills, Knowledge, Attitudes	Trainees
3.	*Behaviour*	Implementation of training results in improving the competence of training alumni in supporting alumni work after returning to the work unit. Behavior changes	Trainees
4.	*Result*	The impact of training results in improving the performance of training alumni and / or organizations. Improved performance productivity	Trainees

The table 4 shows the data taken in the training program. The four levels that serve as the basis for training evaluation with the Kirkpatrick model. The data collection process uses Google Form through a questionnaire given to trainees. Interviews were conducted with one of the agency's leaders to identify the process of planning and implementing training programs in accordance with applicable rules. The data results are interpreted according to the research questionnaire. The four levels that are used as the basis for training evaluation are analyzed in detail according to indicators so as to be able to provide positive recommendations to the organization. Training evaluation is expected to provide recommendations both in terms of planning, program implementation, material quality, and implications for the organization. The Kirkpatrick model is an evaluation concept suitable for mapping the implementation of training programs both in terms of participants and organizational expectations (D. L. Kirkpatrick & Kirkpatrick, 2017).

The data analysis process uses descriptive statistics. Data taken from the questionnaire must pass validity and reliability tests. The validity test using r-statistical values must be greater than r-table. The reliability test using the Cronbach Alpha value must be greater than 0.7 These two values can infer the feasibility of research data. The interpretation of the data is seen from the average value of the questionnaire. The indicator set if you get a value of 3 is summed up sufficiently and above 4 is concluded good. The scales used are 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree). The data is calculated descriptively and the average score will be used as the basis for evaluating the training program. The data analysis will be divided into four levels of the Kirkpatrick model so that it is able to map the level of training provided to employees.

Results and Discussion

Respondent Profile

The initial stage is a description of the respondent's profile. The number of respondents who were used as the object of study was 23 people. Below is a table of respondents' profiles as follows:

Table 5. Respondent Profile

Information	Data	Number	Percentage
Tenure	0-10 years	6	26%
	11-20 years	11	48%
	21-30 years	6	26%
Education	Bachelor	8	35%
	Master	14	61%
	Doctoral	1	4%
Age	25-30 years	2	8%
	31-35 years	5	13%
	36-40 years	1	4%
	> 40 years	17	74%
Gender	Male	20	87%
	Female	3	13%

Table 5 explains that the total number of respondents was 23 people. The working period is dominated by 11-20 years as many as 11 people (48%), 0-10 years as many as 6 people (26%), and 21-30 years as many as 6 people (26%). Education is dominated by 14 master's degrees (61%), 8 bachelor's degrees (35%), and 1 doctoral degree (4%). The age is dominated by over 40 years as many as 17 people (74%), 31-35 years as many as 5 people (13%), 25-30 years as many as 2 people (8%), and 36-40 years as many as 1 person (4%). The gender is dominated by men as many as 20 people (87%), and women as many as 3 people (13%). So, with the distribution of research respondents dominated by the productive age in the implementation of training programs. So, it is certain that research respondents can be used as a research information base. The second stage is the results of a four-level research questionnaire on the Kirkpatrick model.

Interpretation of Results

At this stage, the questionnaire has been distributed to 23 trainees. The process begins with a validity and reliability test. Validity test using indicators by looking at r-statistical values must be greater than r tebel (0.361) (). Test reliability using indicators by looking at Cronbach Alpha values greater than 0.7. Below are the results of the questionnaire validity test as follows:

Table 6. Data Validity Test

Number of Item	r-statistic	r table	Category
X1.1	0,707	0,361	Valid
X1.2	0,778	0,361	Valid
X1.3	0,863	0,361	Valid
X1.4	0,834	0,361	Valid
X1.5	0,679	0,361	Valid
X1.6	0,898	0,361	Valid
X2.1	0,863	0,361	Valid
X2.2	0,824	0,361	Valid
X2.3	0,848	0,361	Valid
X2.4	0,877	0,361	Valid
X2.5	0,915	0,361	Valid
X2.6	0,680	0,361	Valid
X3.1	0,815	0,361	Valid
X3.2	0,880	0,361	Valid
X3.3	0,863	0,361	Valid
X3.4	0,946	0,361	Valid
X3.5	0,878	0,361	Valid
X3.6	0,594	0,361	Valid
X4.1	0,564	0,361	Valid
X4.2	0,909	0,361	Valid
X4.3	0,882	0,361	Valid
X4.44	0,940	0,361	Valid
X4.5	0,855	0,361	Valid

The table 6 explains that all question indicators meet the validity standard. The r-statistic value is greater than the r-table (0.361). The questionnaire as a research information base meets the standards of research validity. Below are the reliability test results as follows:

Table 7. Reliability Test

Variables	Alpha Cronbach	Reliability Standards	Category
Reaction (X1)	0,878	0,70	Reliable
Learning (X2)	0,908	0,70	Reliable
Behavior (X3)	0,909	0,70	Reliable
Results (X4)	0,888	0,70	Reliable

Table 7 explains that all research variables meet the reliability aspect. This can be seen from the value of Cronbach-Alpha greater than 0.7. All research indicators meet reliability standards. So it can be concluded that the research database can be used as a basis for information and meet the standards of validity & reliability. The next stage is the results of a descriptive analysis at each level of training evaluation. Level 1 is the stage of participants' reaction to the components of the program. At this stage, questions

are given to provide a perception of the material, facilities, infrastructure, and training organizers. Indicators that have a value of 3-4 can be interpreted as sufficient and above 4 means satisfactory. Below is a table of the results of the average values at each evaluation level of the Kirkpatrick model as follows:

Table 8. Training Participant Level 1 Evaluation Results (Reactions)

No	Statement	Average	Category
1	The material has a suitability to the needs of the profession	3,7	Fairly
2	Having a novelty for the improvement of the profession	3,3	Fairly
3	Training has a use for career paths	3,1	Fairly
4	The instructor uses the appropriate method	3	Fairly
5	The committee gives directions to the training procedure	3,2	Fairly
6	Facilities are adequate	3,1	Fairly

Table 8 explains that the average on each question has an average value of 3. The trainees gave a fairly good score for the implementation of the training program. The components of the training program consisting of materials, facilities, infrastructure, services,and novelty content were positively assessed by respondents. The process of implementing training must be thoroughly evaluated to improve the quality of training programs according to the needs of the organization. This level 1 provides a positive description of the implementation of the training program to employees. The implementation process is considered good and can be improved according to the needs of the assessor profession within the Ministry of Energy and Mineral Resources.

Level 2 is a stage of learning obtained by participants from the training program. Respondents were given 6 questions to assess aspects of learning both technical, information technology, knowledge, professional ethics, and communication skills. At level 2, this explains the level of learning felt by training participants as part of improving the quality of competence as assessors. Below is a table of level 2 score results that show the learning of trainees as follows.

Table 9. Level 2 (Learning) Score Results of Training Participants

No	Statement	Average	Category
1	Gain technical knowledge that can help in the work process	3	Fairly
2	Gaining knowledge related to information technology	3,2	Fairly
3	Gain knowledge of organizational standards	3	Fairly
4	Gain knowledge about the values of professionalism as an assessor	3	Fairly
5	Gain knowledge about improving ethics as an assessor	3	Fairly
6	Gain knowledge about *public speaking*	3	Fairly

Table 9 explains that trainees give positive value to the learning aspects of the training program. All average scores on the question indicator are 3. The trainees get aspects of learning that are in line with the implementation of the training program. The training

program allocated to assessors provides knowledge both technical, information technology, professional ethics, organizational standards, and professional values as an assessor. This is very important in the implementation of the assessor profession must be carried out with the principle of high responsibility and transparency. Assessors are expected to be able to carry out work professionally. Training participants get new competencies in the form of public speaking. This material provides strategies to assessors with good communication competence to clients or the public. At level 2, it gets a positive assessment from the trainees. Below is a table of results of level 3 (behavior) values as follows:

Table 10. Trainee Level 3 (Behavior) Value Results

No	Statement	Average	Category
1	I get an increase in the results of work in accordance with the targets set by the organization	3,4	Fairly
2	Able to achieve work targets above existing standards	3,1	Fairly
3	After attending the Training Institute Accreditation Assessor training, I was able to help the organization to self-evaluate.	3,2	Fairly
4	After attending the Training Institute Accreditation Assessor training, I was able to adapt quickly to changes in work patterns.	3	Fairly
5	The material studied in the Training Institute Accreditation Assessor Training is able to provide encouragement to improve performance.	3,2	Fairly
6	I can develop training results by compiling/adapting to the situation and workplace conditions so as to increase its expediency.	2,8	Fairly

Table 10 explains that level 3 (behavior) is considered quite good by trainees. The average answer gets a score of 3 so the training program has positive implications for employee behavior. The training program is expected to be able to change the mindset, work pattern, and mindset of employees to work better according to organizational expectations. Positive behavior generated by employees affects performance comprehensively. The performance of individuals and organizations has a significant improvement in changes in behavior. Employees should be given adaptation and trial time to implement the entire knowledge provided by the training program. Prospective assessors who take part in this training program are able to have a positive impact on behavior change. Work patterns can be formed with the commitment of participants to apply all materials as part of improving organizational performance. Below the table of results level 4 values (results) as follows:

Table 11. Level 4 Value Result (Result) of Trainees

No	Statement	Average	Category
1	After attending the Assessor training I felt that there was an increase in performance productivity.	2,8	Fairly
2	Able to innovate according to their field of duty in order to realize a more effective and efficient policy strategy.	3,1	Fairly
3	Able to optimize all potential internal and external resources of the organization in the implementation of the policy strategy of the agency unit	3,3	Fairly
4	The effectiveness of the task is better in terms of speed, accuracy and thoroughness according to the work procedure	3	Fairly
5	After attending the Training Institute Accreditation Assessor training, the work improvement I felt had a positive impact on organizational performance.	3,2	Fairly

Table 11 explains that participants saw a fairly good rate for level 4 (results) aspects. Participants of the training program assess that all training programs are able to significantly improve the results of work. The results of the work are assessed by punctuality, effective problem solving, and a significant increase in consumer satisfaction. The client feels that the contribution of the trainee assigned as the assessor can work professionally. The training program contributes greatly to the results of the work performed by the assessor. The quality of accreditation results is used as the basis for quality improvement information according to the recommendations of the assessor. Level 4 (results) provides a comprehensive description of the results of the training program.

Organizational Implication

The evaluation results shown by Kirkpatrick's model level were judged quite well by the trainees. The effectiveness of the training program is able to be well planned and systematic. Material planning, selection of resource persons, and facilities have supported the implementation of the training program. Level 1 (reaction) explains that the implementation of the training program has good planning and preparation. The reaction of trainees is positive and there is still much to be improved on the sustainability of the training program. The quality of the training program is largely determined by the formulation of planning according to the needs of the organization (Krötz & Deutscher, 2021). The organization has the hope that with the implementation of an effective training program it is able to correlate positively with employee performance. The positive reaction from the trainees was able to provide a positive stimulus for the sustainability of the competency improvement program to all employees (Cheng & Lunn, 2016).

Level 2 (learning) shows that the training process has been carried out quite well. Trainees are able to understand and practice it on the work process. The training process provides some technical ability, technological knowledge, professional ethics, and responsibilities as an assessor. All learning contexts provided by the training program can be used as new competencies as assessors. The assessment process carried out by the assessor must meet the standard standards according to the provisions of the government. The effectiveness of the learning process largely determines the quality of the training

program(Lourenco & Ferreira, 2019). The positive implications obtained by the organization are that all employees or assessors are able to carry out work according to regulations, job standards, and professional ethics. The impact of performance changes will be directly felt by organizations with new capabilities and competencies owned by employees(Bozionelos et al., 2020; Stamatelatos & Brooks, 2020).

Level 3 (behavior) indicates that the training process is able to change the work patterns of employees. Participants assessed that the training program had a positive impact on changes in work behavior. Positive work behavior is able to improve the quality of business processes (Carlucci et al., 2020; Muchiri et al., 2020). Assessors as trainees are expected to have professional work behavior, high dedication, responsibility, and commitment to carry out all accreditation regulations. Professionalism and professional ethics must be carried out responsibly by the assessor. The training program is considered to have a positive impact on changing participant behavior. Organizations have a positive impact on changes in the quality of work. Business processes run by assessors are able to be carried out properly according to professional ethics.

Level 4 (results) indicates that the training process has an impact on the achievement of employee performance. Participants assessed that the training program was able to increase work productivity. The expected work results by the organization are able to be achieved to the maximum by employees. The assessor is able to provide work results according to standards and accreditation provisions from the government. Participants are given improved abilities from both technical, conceptual, use of information technology, and standard procedures for measuring accreditation. Assessors are able to increase work productivity with maximum service to the community, private sector, and stakeholders related to the energy sector. The implementation of the training program must achieve high quality performance expectations. It will go according to the good expectations of the organization, employees, and the quality of work.

Recommendation from Impact Training Program

Evaluation of training programs provided to improve the skills and abilities of employees in job achievement. Prospective assessors who are given training are expected to have competencies according to organizational needs. Kirkpatrick's model provides four dimensions of reaction, learning, behavior, and outcomes. Mapping recommendations is given specifically through the following figure:
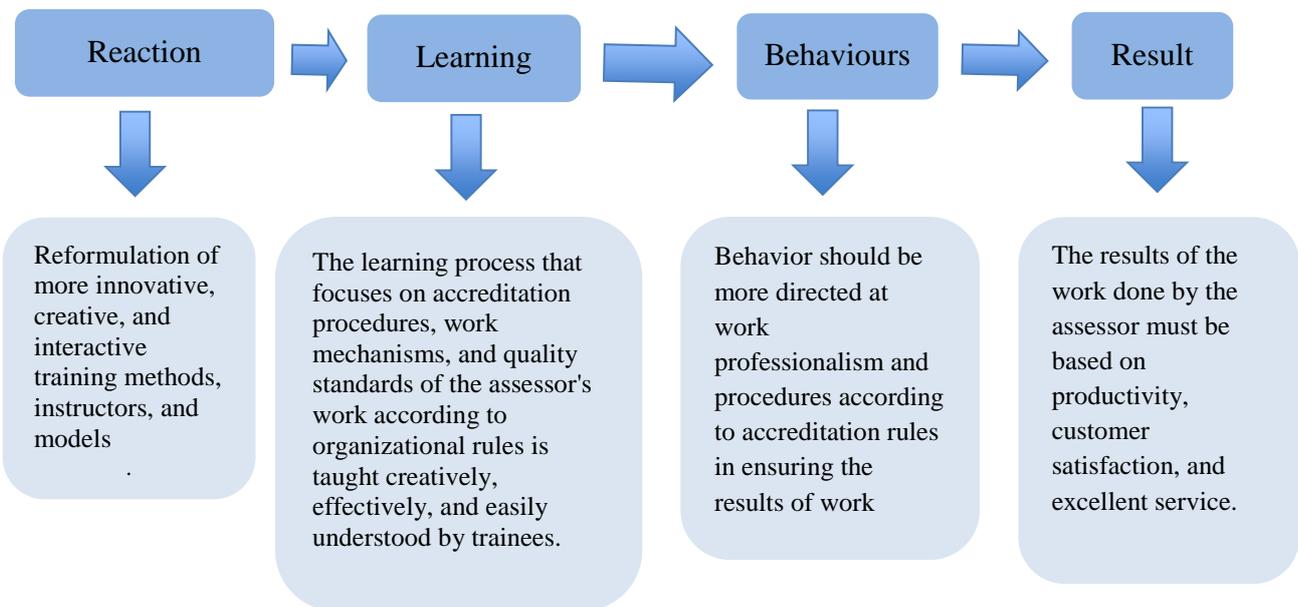
Figure 2. Training Evaluation Recommendation Model

The four models conceptualized or the Kirkpatrick model provide four recommendations. First, at the reaction level, it provides recommendations, namely the reformulation of more innovative, creative, and interactive methods, instructors, and training models. At this level the organization must make planning and redesign of training in the implementation of training programs. The selection of methods and infrastructure determines the quality of training. The balance of theory and practice must be obtained by trainees. Program training should be in accordance with the needs of quality accreditation on the energy environment and mineral resources. The business processes carried out by business people are in accordance with the security and quality of the government. The learning level provides recommendations, namely the learning process that focuses on the ethics of the assessor's professionalism according to organizational rules taught creatively, effectively, and easily understood by the trainees. The training method can be done both online and face-to-face. This level leads that the training program improves learning about the ethical concepts of assessor's professionalism. Training participants are directed to carry out a profession in accordance with the job standards set by the government. The learning method can be done both online and offline. This condition is adjusted to the level of the pandemic and the material presented to the training participants.

The third level recommends that behavior should be more directed at work professionalism and procedures according to accreditation rules in ensuring the results of work. This level expects an improvement in the behavior produced by prospective assessors through the training program. Participants understand the implementation of accreditation assessments in accordance with government standards. This guarantees that the business processes carried out by the client are in accordance with the procedures set by the government. Professionalism should be the jargon of the assessor in carrying out work according to high quality standards. The fourth level recommends that the work done by the assessor should be based on productivity, customer satisfaction, and excellent

service. The work process must be carried out with high quality by the accreditation assessors. The determination of accreditation must be based on the principles of transparency and accountability. High productivity, customer satisfaction, and excellent service must be carried out comprehensively. The exercise program will be continued according to the context and business needs of the organization.

Conclusion

This study concluded that the four levels in Kirkpatrick's model are sufficient to provide a comprehensive evaluation of the training program. The training program is considered sufficient and effective in carrying out the organization's business processes. The four levels in Kirkpatrick's mode are able to provide participants with a comprehensive overview of the evaluation of the training that has been carried out. Organizations must act reactively and responsively to business changes. Assessors must be equipped with new knowledge related to measurements, issues, and scale analysis related to the work process. The results of the evaluation are considered sufficient with several strategic recommendations as part of improving the quality of the training program. This research can be continued with different contexts such as implications with business processes, objectivity of organizational needs-based training, and leadership interventions in training planning. It's a different context to the case study approach. The results of the training can be analyzed from a variety of different points of view according to the research problem.

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Original Research

Effect of Environmental Values on Ecotourism Visit Intention: Evidence from a Sub-Saharan African Context

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Abstract

Human activities are causing great damage to the climate and the consequences are projected to be dire in the future. Tourism alone contributes about 8% to greenhouse emissions necessitating the call for sustainable tourism as a way to promote environmental conservation. This study examines the effect of environmental values on ecotourism visit intentions. The specific objectives were to ascertain the effects of biospheric, altruistic and egoistic values on ecotourism visit intention. Three hypotheses were stated and data was collected from 196 intending tourists out of which 163 were returned valid and used for the analysis. The data were collected through social media and the hypotheses were tested using multiple regression analysis via SPSS version 22 and descriptive statistics used to describe respondents' demographics. The result showed that biospheric and altruistic values both have a positive and significant effect on ecotourism visit intention. While egoistic values negatively predict ecotourism visit intentions. Based on the findings, this study recommends that tourist destination marketers should strongly communicate the environmental benefits of travel and tourism on ecotourism destinations.

Keywords: Ecotourism, environmental values, sustainable consumption, tourism, visit intention.

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Introduction

Man's activities – in production, distribution, and consumption – as advanced by technology and the industrial revolution results in natural resource depletion and climate change. The Intergovernmental Panel on Climate Change (IPCC) 2022 assessment depicts an unfavourable picture of the prospect of life on our planet, with ecosystem collapse, the loss of species, and climate threats such as heatwaves and floods (Hussein et al., 2023). As a result, political and social debates, such as the COP27, are now centred on achieving climate resilience and zero-carbon emissions by 2050 (Hussein et al., 2023; World Health Organization, 2021). In a recent report, the UN warned that human contribution to climate change and global warming is on the rise and alarmed about the consequences of future catastrophic consequences (Agoston et al., 2022). Despite its contribution to economic development, tourism contributes about 8% to greenhouse emissions and it is significantly more carbon-intensive than other potential areas of economic development (Lenzen et al., 2018). In Nigeria, the tourism sector has enormous economic potential but is largely underdeveloped (BusinessDay, 2021). The sector contributed 3.6 per cent (about USD 16 billion) to Nigeria's GDP in 2021 and it is projected to grow annually at an average rate of 5.4% between 2022-2032, outperforming the overall economy estimate of 3% growth (Statistica, 2022; WTTC, 2022). Nigeria is an eco-tourism haven for beautiful mountain sceneries, waterfalls, intriguing forests, exotic birds and animals, exquisite cuisines, as well as intriguing game reserves and conservation centres (Nwokorie & Adeniyi, 2021). Some of the ecotourism sites are Yankari Game Reserve, Borgu Game Reserve, Kainji Lake National Park, Lekki conservation centre, Bar Beach, Eleko Beach, Alpha Beach, Badagry Beach, Obudu Mountain Resort, Ikogosi Warm Springs, Zuma Rock, Gurara waterfalls etc (Jemirade, 2021; Tour Nigeria, 2021). Suffice it to say therefore that Nigeria has the potential to be a major destination for sustainable or eco-tourism.

Sustainable tourist choices require that people hold general pro-environmental values (Passafaro et al., 2015). Generally, Values guide behaviour and are a significant predictor of sustainable lifestyle, such as sustainable clothing consumption (Nkamnebe & Ojiaku, 2023), sustainable waste disposal (Sneddon, Evers, & Gruner, 2022), and sustainable food choices (Claessens, Gillebaart, & de Ridder, 2023). Personal values are commonly defined as prescriptive beliefs and guiding principles oriented toward desirable end-states of existence (e.g., security) or modes of conduct (e.g., justice) that transcend specific situations or objects (Shin, Riper, Stedman, & Suski, 2022). These values influence the extent to which people become more conscious of the impact of their consumption choices (Kaur & Luchs, 2022).

Although sustainable behaviour is often considered to be the appropriate thing to do, in many cases, tourists are least likely to engage in sustainable behaviour (Dolnicar & Grun, 2009). Hence, the value–action gap or the green gap (Steg, Bolderdijk, Keizer, & Perlaviciute, 2014). In the context of sustainable consumption, biospheric (caring about the environment), altruistic (caring about others), egoistic (caring about personal resources) and hedonic (caring about pleasure and comfort) values are relevant in understanding behaviour (Bouman, Werff, Perlaviciute, & Steg, 2021). Biospheric and altruistic values are a strong determinant of sustainable behaviour (de Groot & Steg, 2008; Tolppanen & Kang, 2020) but consumers with strong biospheric values do not always

choose sustainable options. Nkamnebe and Ojiaku (2023) found a negative effect of surrogates of biospheric values on sustainable clothing lifestyles. The egoistic and hedonic values are negative predictors of sustainable behaviour. However, in the context of tourism, prior studies showed that tourists also practice sustainable tourism for fun and showing off (Tolppanen & Kang, 2020). Therefore, it is not clear how these personal values affect sustainable behaviour. Accordingly, this study seeks to examine the effect of personal values on sustainable tourism consumption among ecotourism destination visitors in Nigeria. In particular, the study will examine the biospheric, altruistic, and egoistic values of sustainable tourism consumption among ecotourism destination visitors in Nigeria.

Review of Related Literature

Conceptual Review

Sustainable Consumption Behaviour

Sustainable consumption has been defined as "consumption that simultaneously optimizes the environmental, social, and economic consequences of acquisition, use, and disposition to meet the needs of both current and future generations (Kaur & Luchs, 2022, p. 990). According to the Organisation for Economic Co-operation and Development (OECD; 2004), sustainability consumption refers to "the consumption of goods and services that meet basic needs and quality of life without jeopardizing the needs of future generations". More recently, Phipps et al. (2013) defined sustainable consumption as "consumption that simultaneously optimizes the environmental, social, and economic consequences of acquisition, use, and disposition to meet the needs of both current and future generations". Kaur and Luchs (2022) categorized sustainable behaviours into sustainable socially conscious consumption (what consumers buy) and frugal consumption (how much consumers buy). Sustainable consumption aims to enable a good present and future quality of life on Earth through the wise use of resources (Loy, Wieber, Gollwitzer, Oettingen, & Loy, 2016).

Generally, sustainable consumption includes buying and using fair trade and environmentally friendly goods, purchasing goods made from recycled materials, recycling household waste, embracing a simplified lifestyle, using energy-efficient appliances, and so forth.

Although the number of people willing to embrace sustainable consumption has increased in recent times (Joshi & Rahman, 2017), the practice is often considered in many cases to be less profitable, less pleasurable, more time- consuming or more effortful than environmentally-harmful actions. Organic products, for instance, are often more expensive than regular products, and using public transport is perceived as less convenient, slower and less pleasurable than travelling by car environment (Steg, Bolderdijk, et al., 2014). In other words, increased willingness to consume sustainably has not translated into real sustainable purchase activities (Young et al., 2010). Many of the past studies have observed a weak relationship between consumers' intention to buy and use sustainable products and behaviour. There is therefore a gap between consumers' thinking and actual actions and people generally overlook the environmental and social

impacts of their purchases. This discrepancy or gap is referred to as 'sustainable purchasing inconsistency' or 'sustainable intention–behaviour gap' (Joshi & Rahman, 2017).

Sustainable tourism consumption and Ecotourism

The World Tourism Organization (1993) defined Sustainable tourism as "tourism which meets the needs of present tourists and host regions while protecting and enhancing opportunity for the future". Mackenzie and Gannon (2019) posit that sustainable tourism encompasses accountability for the future and current environmental, economic, and social impacts, as well as tourism that addresses environmental, host community, visitor, or industry needs.

Sustainable tourism consumption behaviour has been largely studied within the context of nature-based tourism and ecotourism (Miller et al., 2015). Both the terms "ecotourist" and "nature-based tourist" encompass a diversity of tourists with varying attitudes, and subsequent care for, the natural environment (Miller et al., 2015). Ecotourism is the most suitable form of tourism which promotes green activities (Mary, Zaal, & Pour, 2022). Ecotourism concerns natural environments and participates in the protection of the environment. It also incorporates the social and solidarity dimensions (Haddouche & Salomone, 2018). Ecotourism can be defined as the act of "travelling to relatively undisturbed or uncontaminated areas with the specific objective of studying, admiring and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas" (Orams, 1995, p. 4). Ecotourism is defined as travel to relatively undeveloped natural destinations with the specific goal of acquiring knowledge of, appreciating, and enjoying natural settings and diverse wildlife in the ecosystem and learning the culture and history provided by the environmental settings, all of which can contribute to environmental conservation (Lee & Jan, 2017). Ecotourism's appeal resides in its integral ability to cater for economic development while catering for the environment (Teeroovengadum, 2019). Ecotourism would include tourists' visitation to wildlife parks, forest settings, ecological reserves, caves, and waterfalls among others. Eco-tourists are motivated to visit tourist sites to learn about nature in their natural habitat and to enjoy and appreciate the scenes, natural features and related cultural artefacts (Ballantine & Eagles 1994). Adam, Adongo, and Amuquandoh (2019) assert that eco-tourists travel to relax and rest from the hustle and bustles of work and home, meet people with similar interests and learn about nature and cultures.

Environmental Values

Environmental values are defined as affective environmental concerns (Schultz et al., 2005). They are beliefs about the significance of the well-being of the natural environment and how the natural environment is regarded by humans (Reser & Bentrupperbäumer, 2005). People that have strong environmental values consider protecting the environment an important personal goal in their life and they are motivated to do so (Nkamnebe & Ojiaku, 2023). These values reflect the extent people are aware of the consequences of their behaviour on the environment.

Within the context of environmental issues, four values appear most relevant: biospheric, altruistic, egoistic and hedonic values. The biospheric and altruistic values are grouped under the self-transcendent values while the egoistic and hedonic values are grouped under the self-enhancement values (Bouman, Steg, & Kiers, 2018).

Biospheric values are considered to be more analogous to an ecocentric or biospheric view of the value of nature that recognises the importance of the wellbeing of nature for its own sake. In other words, biospheric values reflect a concern for the environment in itself, without a clear link to human beings (Bouman et al., 2018). Ninh and Lobo (2016) found that consumers' biospheric values positively influence their attitudes towards environmental protection, which in turn translates into positive purchase behaviour of energy-efficient appliances. Similarly, Bouman et al., (2020) showed that perceived biospheric group values are associated with individuals' pro-environmental engagement. Specifically, the more individuals perceived their group to endorse biospheric values, the stronger their pro-environmental engagement was. Hence, it is expected that biospheric values will affect ecotourism visit intention.

H₁: There is a positive and significant effect of biospheric value on ecotourism visit intention in Nigeria

Altruistic values are reflected in the individual's prioritization of the protection and enhancement of the well-being of people, other species, and the environment (Stern et al., 1993). Altruistic values reflect goals to care about others, social welfare and society. Stronger endorsement of altruistic values also often encourages people to support pro-environmental behaviour, as many of such sustainable behaviour benefit the wider society. As pro-environmental beliefs and behaviours oftentimes relate to positive outcomes for human beings (e.g., health benefits) or are seen as a requirement to preserve our planet for future generations, altruistic values are typically also positively related to pro-environmental beliefs and behaviours when such behaviours also benefit other people (Bouman et al., 2018). Kim and Stepchenkova (2019) reported that tourists' altruistic values impact their attitude formation of eco-travel by making the tourists pleasant and enjoyable.

H₂: There is a positive and significant effect of altruistic value on ecotourism visit intention in Nigeria

Self-enhancement values, on the other hand, include egoistic and hedonic values (Schwartz, 1994; Schwartz et al., 2012; Steg et al., 2014). Egoistic values reflect goals to care about possessions, money and status. Egoistic values make individuals highly self-centred and orient them towards wealth, power, and authority, instead of helping other people, and society (Kaur & Luchs, 2022). It reflects a focus on the costs and benefits a choice has on someone's resources, and power or achievement. Hedonic values make people focus on attaining pleasure, positive feelings and reducing effort (Bouman et al., 2018). Hedonic values are strongly linked to a leisurely experience such as travelling and are therefore of particular interest when studying a tourism experience (Cavagnaro, Staffieri, & Postma, 2018).

Egoistic values focus on goals that primarily benefit oneself. Individuals who strongly endorse these two values are typically less likely to engage in pro-environmental action because such actions often have some individual costs (e.g. financial or effortful; Bouman et al., 2020). However, recent findings suggest that even individuals who have hedonic or materialistic values may also act in environmentally friendly ways in certain circumstances. That is, they may seek status and want to part-take in green trends (Tolppanen & Kang, 2020). In the tourism context, hedonic values are strongly linked to a leisurely experience such as travelling (Kim, Ritchie & McCormick, 2012), and enhancing egoistic values (such as status) may be a reason for travelling sustainably (Cavagnaro et al., 2021). Steg, Perlaviciute, Werff, and Lurvink, (2014) argued that interventions aimed to promote pro-environmental actions should carefully take into account possible hedonic consequences of the relevant actions, as these may be important barriers to behaviour change. Fig. 1 shows the relationship between environmental values and ecotourism visit intention.

H₃: There is a negative and significant effect of egoistic values on ecotourism visit intention in Nigeria
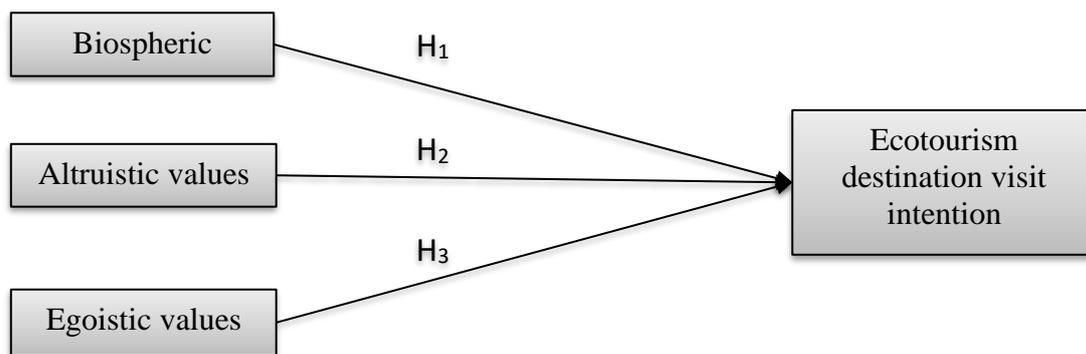

Fig. 1. Conceptual Model

Theoretical Framework

Schwartz's theory of basic values

Schwartz's theory of human values proposes that individuals have a set of values that convey what is important to them (Schwartz, 1992). According to this theory, values can be classified into ten distinct types, including power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security (Schwartz, 1992; Schwartz & Boehnke, 2004). Through examining the relationships between these individual value types, four higher-order value clusters have emerged, namely self-transcendence, self-enhancement, openness to change, and conservatism (Schwartz, 1992, 2007; Schwartz & Boehnke, 2004).

The self-transcendence values cluster includes values that are concerned with issues beyond mere self-interest, such as equality, social justice, and protection of the environment (Schwartz, 1992, 1994). Conversely, the self-enhancement values cluster includes values focused primarily on self-interest, such as power and achievement

(Schwartz, 1992, 1994). The openness to change values cluster is characterized by values of self-direction, stimulation, and hedonism, which emphasize novelty and independent thought (Schwartz, 1992, 1994). In contrast, the conservatism values cluster includes values of tradition, conformity, and security, which emphasize respect, stability, and resistance to change (Schwartz, 1992, 1994).

Schwartz's model for classifying the dimensions of values is based on four dimensions: self-enhancement versus self-transcendence, openness to change versus conservatism, self-direction and stimulation versus security, conformity, and tradition (Vecchione, 2022). The dimension of self-enhancement versus self-transcendence reflects the conflict between values that prioritize self-interest and those that prioritize concern for others' interests and welfare (Sagiv & Roccas, 2021). The dimension of openness to change versus conservatism reflects the conflict between values that emphasize independent thought and novelty and those that emphasize social order and tradition (Vecchione, 2022). Finally, the dimension of self-direction and stimulation versus security, conformity, and tradition reflects the conflict between values that emphasize individuality, creativity, and personal growth, and values that emphasize social order, stability, and tradition (Schwartz et al., 2012).

Schwartz values have been successfully applied in determining consumers' pro-environmental behaviours in various contexts. For instance, Agissova and Sautkina, (2020) showed that Security values predict environmental concern and New Environmental Paradigm (NEP). Similarly, Ye, Soutar, Sneddon, and Lee, (2017) reported that the effects of self-enhancement versus self-transcendence were larger than that of subjective norm and perceived behavioural control; and the total effect of openness-to-change versus conservation on intentions was larger than that of the subjective norm.

Research Method

Sample and Design

A Judgmental sampling method was used to collect the data from 196 prospective tourists on social media. The Judgmental sampling method was used because it is based on the judgment of the researcher in selecting respondents that meet the criteria of inclusion for the research. In this study, the researchers used prospective tourists based on the respondents' social media activity such as following and active engagement with tourist destination handles on social media. In particular, data were collected from intending tourists who engaged with tourist organizations and campaigns on social media such as #TourNigeria. These people who followed or commented on ecotourism destinations on social media and Google Places were contacted to participate in the study. The profile of the respondents showed that a majority of them are between the ages of 26 to 30 years (53%) and between 18 and 25 years (38%). More than half of the respondents are male (57%) and about 63 per cent are single. The respondents are mostly educated with more than half of them having a bachelor's degree (54.7) or postgraduate degree (16.0). About 40 per cent of the respondents are civil servants, while 20 per cent are self-employed (see Table 1 below).

Measure Instrument

The survey instrument was a self-administered questionnaire. The questionnaire was divided into two versions – online and offline version. The online version was prepared with Google Forms and distributed through social media and e-mail. The questionnaire was in two sections, section A elicited responses regarding demographic information while Section B collected data relating to the study variables as discussed below: Environmental Values: environmental values are deconstructed and measured with biospheric, altruistic, and egoistic. Biospheric values are measured with 4 items e.g., "It is important to me to prevent environmental pollution". Altruistic values are measured with 5 items such as "it is important to me to be helpful to others". Egoistic values are measured with 4 –items e.g.," It is important to me to have money and possessions". The scale is anchored on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). The scale items were adapted from (De Groot & Steg 2008; Bouman et al., 2018). Ecotourism intentions: Ecotourism visit intention will be measured with 6 items. The items are adapted from Cheng et al., (2021). The questions pertained to the "likelihood to visit ecotourism interest such as Tropic forests and indigenous bush, and National parks". The scale was anchored on a 7-point semantic scale from 7 = very likely to 1 = not at all.

Table 1. Demographic Profile of Respondents

Scale	Items	Frequency	Valid Percent	Mean	Standard Deviation
Age	18 - 25 years	62	38.3		
	26 to 30 years	86	52.6		
	31 to 35 years	14	8.3		
	35 - 50 years	1	.8		
	Total	163	100.0	1.72	.48
Gender	Female	67	42.8		
	Male	91	56.1		
	Prefer not to say	5	1.1		
	Total	163	100.0	.57	.50
Marital Status	Single	103	63.1		
	Married	58	35.8		
	Separated	2	1.1		
	Total	163	100.0	.38	.51
Educational Qualification	FSLC	14	8.7		
	OND/NCE	17	10.6		
	HND/B.Sc	105	64.7		
	Postgraduate	43	16.0		
	Total	163	100.0	2.48	1.07
Occupation	Students	30	18.2		
	Govt. employee	64	39.5		
	Priv. Sect. employ	36	22.2		
	Self-Employed	33	20.2		
	Total	163	100.0	1.99	.88

Data Presentation and Analysis

Out of the 196 copies of the questionnaire used for the study, a total of hundred and sixty-three (163) were returned valid and used for the analysis, representing an eighty-three per cent response rate. In other words, about 17 per cent of the responses were either not returned or were invalid. To test the hypotheses, report the findings from the study. Data collected were analysed using SPSS version 22 to generate needed information and findings using descriptive statistics; Principal component analysis was also performed to reduce the data and test for commonality while Multiple Regression Analysis was used to test the proposed hypotheses. For this study, the alternate hypothesis is accepted if the p-value is less than 0.05, otherwise, it is rejected.

Factor Analysis

To obtain the explanation for the measurement variance and reliability, Principal Component Analysis and Cronbach alpha were used. The Principal component analysis was computed with varimax rotation, set at an eigenvalue greater than one and factor loadings greater than 0.5. Table 2 shows that all the variance in the construct was more than 60% and all the reliability of the measurement items were above 0.70. Three items with loadings below 0.5 were deleted to enhance and improve the construct's reliability and to also obtain an optimal result. A summary of the factor analysis and reliability measurement is shown in Table 2 below.

Table 2. Factor loading explained the variance and reliability of the construct

Component Label	Items	Factor Loadings	Explained Variance (%)	Cronbach alpha (α)
Biospheric values	It is important to me to prevent environmental pollution.	.863		
	It is important to me to protect the environment.	.843		
	It is important to me to respect nature.	.690		
	It is important to me to be in unity with nature.	.680	24.6	.86
Altruistic values	It is important to me that every person has equal opportunities.	.860		
	It is important to me to take care of those who are worse off.	.802		
	It is important to me that every person is treated justly.	.788		
	It is important to me that there is no war or conflict.	.777		
	It is important to me to be helpful to others.	.752	13.5	.87

Component Label	Items	Factor Loadings	Explained Variance (%)	Cronbach alpha (α)
Egoistic values	It is important to me to have control over others' actions.	.786		
	It is important to me to have authority over others.	.761		
	It is important to me to be influential.	.698		
	It is important to me to have money and possessions.	.882		
	It is important to me to work hard and be ambitious	.860	*11.3*	*.74*
Ecotourism Intention	There is a high likelihood that I will visit an ecotourism site in Southeast, Nigeria	.752		
	I want to visit an ecotourism site in Southeast, Nigeria	.789		
	I intend to visit an ecotourism site in Southeast, Nigeria	.758		
	I will visit an ecotourism site anytime soon in Southeast, Nigeria	.668	*5.5*	*.80*
Note: extraction method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization; Variance explained: 63.6%				

Hypotheses Testing

The hypotheses stated were tested using multiple regression analysis with the aid of SPSS version 22. The multiple regression results show that the multiple correlation coefficients (R) using all the predictors simultaneously is .42 and adjusted R^2 is 17%. In other words, 17 per cent of the variance in the dependent variable (ecotourism visit intention) can be predicted from all the independent variables combined (biospheric values, altruistic values and egoistic values). The F – statistics from the ANOVA table show a statistically significant relationship between ecotourism visit intentions and environmental values $F_{(5, 324)} = 13.52$, $p < 0.001$; and verifies the research model goodness of fit. Table 4.3 shows the regression coefficients of the constructs. Biospheric values ($\beta = 0.21$, $p < .001$) were found to be positive and statistically significant. Therefore, biospheric values increase the intention to visit ecotourism destinations confirming Hypothesis 1. Similarly, altruistic values ($\beta = 0.13$, $p < .05$) were found to have a positive and statistically significant effect on ecotourism visit intention. Therefore, Hypothesis 2 was supported. The third hypothesis tested the negative effect of egoistic value ($\beta = -0.16$, $p < .05$) on ecotourism visit intention. The result showed that egoistic value has a negative and significant effect on ecotourism visit intention. Therefore, hypothesis 3 is supported.

Table 3. Regression Result and Hypotheses Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.059	.425		7.192	.000
Egoistic values	-.160	.065	-.142	-2.45	.015
Biospheric values	.221	.056	.209	3.950	.000
Altruistic values	.127	.055	.119	2.303	.022
Note: R = .42,	*R^2 = 17.3,*		*F = 13.52*		*p < 0.001*

a. Dependent Variable: Ecotourism visit Intention

Discussions, Conclusion and Recommendations

Discussions

Compared to other sectors, tourism contributes significantly to climate change (Lenzen et al., 2018). Therefore, tourists must reduce their carbon footprints and imbibe sustainable lifestyles by shifting their values towards concerns for the environment. This study examined the effect of environmental values on ecotourism visit intention. The result showed that biospheric values and altruistic values are positively related to ecotourism visit intentions while egoistic values have a negative effect on ecotourism visit intention.

The positive effect for biospheric values (β = 0.21, p < .001) suggest that tourist that demonstrates concern for the environment – that is, respect nature, protect the environment and prevent pollution – are likely to visit ecotourism destinations. This finding corroborates Perkins and Brown (2012) who found that biospheric values are strongly associated with interest in ecotourism, and Steg et al. (2014) who also found that consumers with strong biospheric values were more likely to sacrifice their comfort or pleasure to reduce their energy consumption.

The result also showed a positive and significant effect of altruistic values on ecotourism visit intention (β = 0.13, p < .05). The result contradicts Shin et al. (2022) who found that altruistic values did not significantly predict behaviour to pro-environmental behaviour but confirms and Doorn and Verhoef (2015) who found that consumers' altruistic values are not significantly associated with their organic purchasing. But confirms Nguyen et al. (2017) who found that consumers' altruistic values are positively associated with their attitudes towards environmental protection and Becker-Leifhold (2018) who showed that consumers' altruistic values are positively associated with their behavioural intentions– willingness to rent fashion clothes. Tourists are likely to visit ecotourism destinations because they are concerned for the society and well-being of others.

Finally, the result showed that egoistic values negatively predict ecotourism visit intention (β = -0.16, p < .05). The finding suggests that tourists who value authority, influence and money and possession are less likely to visit ecotourism destinations. This confirms Doorn and Verhoef (2015) who found that consumers' egoistic values are

negatively associated with their organic purchasing and Perkins and Brown (2012) who found that egoistic values are negatively associated with commitment towards environmental protection. But contradicts Becker-Leifhold (2018) who found that consumers' egoistic values are positively associated with willingness to rent fashion clothes and Verma (2019) who also found that consumers' egoistic values are positively associated with their attitudes towards green hotels and environmental concerns.
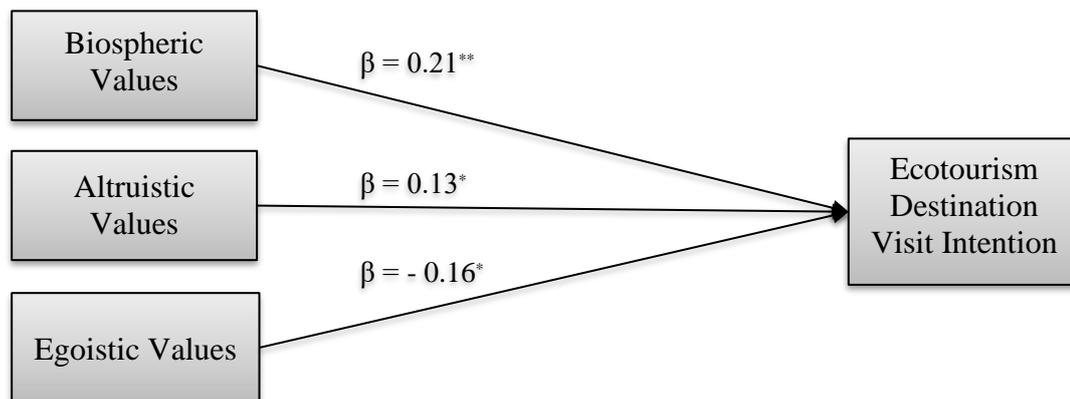

Fig. 2. Hypothesis Result

Recommendations

Based on the findings of this study the following recommendations are suggested for ecotourism destination managers and policymakers:

Tourist destination marketers should strongly communicate the environmental benefits of travel and tourism on ecotourism destinations. They can use such campaigns to appeal to people with strong biospheric environmental values. To promote ecotourism behaviours, these campaigns should clarify the negative consequences of conventional tourism, the advantages of behavioural alternatives and the consequences that adopting these alternatives has for society and the environment as well as how people can go about performing these behavioural alternatives. They should emphasize the importance of preventing environmental pollution, protecting the environment, and respecting nature. For example, videos and pictures showing the serenity of ecotourism destinations in contrast to conventional tourism and how activities within these destinations impact on the environment can be used online and in traditional media. Ecotourism planners can also hold a series of special ecotourism events and festivals to achieve greater visibility and promotion.

Ecotourism benefits both visitors and host communities with little or zero impact on the environment. Therefore, highlighting the benefit of ecotourism on host communities and in preserving natural heritages should inform campaigns to appeal to tourists with strong altruistic values. This is important in reducing dependency on non-sustainable tourism. To this end, ecotourism operators, tour operators, travel agents, and guides can cooperatively develop communication strategies and materials that emphasize the importance and benefits of ecotourism for the preservation of the environment and culture while generating positive benefits for residents and tourists. It is important to me that

every person has equal opportunities. It is also important that to emphasize altruism by showing commitment to care for those who are worse off among the locals, ensure that people are treated justly, promote no war or conflict campaigns and be helpful to others.

Ecotourism operators should spend a great amount of time and effort on communication and education strategies for those with strong egoistic values. This, of course, requires a long-term commitment since values are relatively stable and takes time to change once it is embedded. Perhaps an effective and efficient approach is that local and central authorities can develop consumer and production programs and policies aimed at changing consumers' behaviours about environmental and sociocultural issues. Such programs and policies should emphasize the importance of environmental protection as well as advocate making small lifestyle changes to help further the conservation of natural and sociocultural resources while increasing individuals' happiness in life and improving their quality of life overall.

Conclusion

The tourism potential of Nigeria, when developed and properly harnessed can satisfy the curiosity of every kind of tourist, including ecotourist. However, to fully develop and harness the ecotourism destinations in Nigeria, targeting consumers with strong environmental values is critical. This study provides an important contribution to sustainable tourism. The study empirically demonstrates that tourists with strong biospheric and altruistic values are likely to visit ecotourism destinations. Whereas, consumers' egoistic values will significantly decrease their intention to visit ecotourism destinations. Our findings shed light on the imperative of developing ecotourism destinations and showed that demonstrating environmental protection, respect for and unity with nature are important predictors of ecotourism behaviour. Also, the study suggests that providing opportunities equal opportunities for locals and tourists and stakeholders, caring for those worse off and treating people justly are important factors that could attract tourist to destination sites. Finally, tourists with egoistic tendencies and like to exercise authority and control over others' actions, that conspicuously display affluence and possession are not likely to visit ecotourism destinations.

Limitations and directions for future studies

This study has several limitations and suggested areas for future studies. An important limitation that is generalizing the finding to a wider population due to the sample. While the study used respondents that engaged with tourist and ecotourism destinations on the Internet, the sample size was small and not an adequate representation of the wider population of Nigeria or actual ecotourists. Therefore, further studies may be conducted to examine the with a larger and more representative sample size.

Another limitation of this study is the potential social desirability bias. The aim of the study was revealed to the respondents while collecting data, this may motivate respondents to answer affirmatively to questions bordering on environmental protection. Though respondents were assured of the confidentiality of responses it possibly could reduce social desirability bias following Chung and Monroe (2003). Further studies may

use other data collection methods such as experiments and observation rather than self-reports.

Finally, the present study investigated behaviour intentions that were of interest. However, while intentions are the end of an individual's conscious choice process (Bamburg & Schmidt 2003, Bamburg & Möser 2007) not everyone acts following their intentions (Conner and Armitage 1998). This may be because as Ajzen (1991) explains, intentions may change between the time of measurement and when actions are performed, while behaviour may also be influenced by factors which people may have limited control over. For example, factors such as available information, skills and abilities, willpower, time and opportunity could affect the extent to which intentions lead to behaviour (Ajzen 1991), while strong habits can also reduce the extent to which intentions lead to behaviour (Verplanken & Wood 2006). A longitudinal study could provide insight into the extent to which ecotourism intentions result in actual sustainable tourism behaviour and enable the investigation of the extent to which habits and a lack of control affect sustainable tourism.

Author Contributions

OOC developed the first draft, designed methodology and the research instrument, ran the analysis and drafted the discussions section.

CEE initiated the topic, outlined the body, wrote the second draft, collected data and entered, and cleaned data and wrote the concluding section

ICN wrote the final draft, contributed to the introduction and fine-tuning the research objective, co-wrote the method section and discussion.

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Original Research

Corporate Governance Mechanisms and Financial Performance: Evidence from the Listed Bank in Bangladesh

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Abstract

The determination of this research is to investigate the level to which the regulations governing professional authority have an influence on the efficiency of the banking sector in Bangladesh. In this study, we selected 100 (one hundred) sample from commercial banks from 2017 to 2021 years, respectively. These banks were all active participants and registered in the Dhaka Stock Exchange (DSE). To examine the relationship between the independent variables (bank size, board size, board composition, and CEO status) and the dependent variable (CEO status), a random effect of panel least square regression analysis was conducted (return on asset, return on equity and earnings per share). According to the results from the analysis, the size of a bank has a favorable effect on ROA and ROE, but a negative effect on EPS. Moreover, the success of Bangladeshi banks tends to increase as their size increases. Corporate governance and financial institution performance in Bangladesh are significantly associated.

Keywords: Commercial Banks, Governance, Listed Banks, Performance of Banks.

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Introduction

Corporate governance develops the structure, methods, and procedures that optimize long-term shareholder value via managerial responsibility and firm performance. Managerial goals may be more likely to be achieved if they are supported by such a framework, procedures, and practices that address the agency problem. Recent difficulties in corporate governance include management using business resources without permission from stockholders (Eldenburg et al. 2004 and Fan 2004). This has resulted in a reconsideration and inspection of the current practices of commercial authority, in addition to a strong interest in the empirical research of business supremacy organizations and the previous two decades have affected the economic and financial markets growth of the concerned nations, alerting their governments to the necessity for effective corporate governance to ensure economic stability (Fan 2004). Governments, corporations, and academic institutions are now focused on how corporate governance impacts company presentation (Doidge et al 2007; Abdulsamad and Zulkafi 2007 and khumaini et al 1998). At this time, intervention concerns originating from the departure of possession and organization continue to affect firm's worldwide (Jensen & Meckling, 1976). Recent research shows that companies with greater agency issues perform poorly (Wisbach 1993 and Wisbach 1995). These concerns allow managers to benefit themselves rather than the owners. Effective governance is one of the most important agency problem-solving techniques. However, the financial business has gotten more convoluted. Supervising bank operations and management choices is challenging. This is why banking has ongoing problems. Corporate governance failures cause most catastrophes. Bangladesh lacks corporate governance. Bangladeshi banks have financial issues. Regulatory authorities and bank board usually supervise banks together. Good banking governance includes regulatory agency and bank board oversight (John, Mehran and Qian, 2003). This improves financial institution performance. Bangladesh Bank applies governance standards. Bangladesh Bank capped bank directors. There's also a website rule for forming a private commercial bank. Bangladesh Bank implemented the 1991 Banking Companies Act, 1993's Securities and Exchange Commission Act, and The Financial Institutions Act to maintain good corporate governance. Improvements in Bangladesh's banking sector's corporate governance are positive. SEC publishes a corporate governance notice in 2006. Few empirical studies have looked at bank corporate governance, including Adams and Mehran (2003, 2005); Caprio et al. (2007); Levine (2004); Andresand Vallelado (2008); Elyasiani and Jia (2008); and Macey and O'Hara (2003). The study looked at the effectiveness of boards of directors' advising and oversight functions in the banking sector. For banks with more watchful boards, better governance is thought to lead to greater production of shareholder value. For a variety of reasons, the governance of banks may be different from that of unregulated, non-financial enterprises. One is that the numerous parties having an interest in financial institutions make their governance complex. Investors are not the only ones interested in a bank's performance; depositors and regulators also care. Overall, regulators are interested in how governance influences financial institution performance since it is essential to economic growth. Therefore, the ownership structure and board of directors of a bank may both have a big impact on how the bank is governed overall.Bangladesh has made some progress in recent years toward stronger corporate governance.In 2006, the Bangladesh Securities and Exchange Commission (SEC) released a "Corporate Governance Notification" establishing standards for corporate governance procedures, including the

composition of the boards of publicly traded businesses on a "Comply or Explain basis." As part of a World Bank reform initiative, this was done. The board of a corporation should consist of not more than twenty members, at least ten of whom shall be independent, and at least two of whom shall be distinct from the chairman and chief executive officer (PDF). study of Bangladeshi banks' efficiency and corporate governance. According to the literature (Klapper and Love, 2004; Rajagopalan and Zhang, 2008), strong corporate governance has been associated with high levels of financial performance and market value. The banking sector in Bangladesh might benefit from improved corporate governance, as evidenced, in part, by an examination of the many aspects of the board structure, a crucial tool for governance. Recent data from publicly traded banks in Bangladesh confirm our finding that an independent board improves a company's bottom line. This indicates, in accordance with the agency argument, that having independent board members enhances the success of the business. Our results are consistent with the resource dependence theory, which contends that banks with larger boards benefit from a wider range and deeper level of expertise, knowledge, and social and professional networks. We also offer proof that having female board members has no discernible impact on company outcomes. On the other side, managerial stockholdings are associated with worse financial outcomes. The results of this study contribute to the body of knowledge in a number of ways. We examine the relationship between corporate governance and bank performance in Bangladesh, a developing nation with little recent research on the subject. Recent SEC suggestions that outline precise requirements for board structure underline the significance of the corporate board as an essential tool for governance for publicly traded companies in Bangladesh. The study's conclusions offer a compromise between legislative and regulatory adjustments, strengthening corporate governance in Bangladesh's banking sector. The findings of this study may be applicable to banks in other countries. Evidence from Bank Performance and Corporate Governance in Bangladesh (PDF). Evidence from Bangladesh about corporate governance and bank performance.

Definition of Corporate Governance

Corporate governance lacks a widely accepted notion. The description that corporate governance set the rules and incentives that drive and regulate the administration of a firm is more reflective of the concept. Good corporate governance improves long-term profitability and shareholder value (Khumani et al., 1998). After that, they present some examples of the numerous forms that expropriation might take. It is possible for the entry to only take the incomes for themselves, trade the produce, resources, before stocks of the company they regulator to extra company they individual at prices that are lower than the market price, redirect corporate opportunities away from enterprises, place incompetent relatives in management roles. This expropriation is very necessary for Jensen and Meckling's analysis of the agency predicament (1976). Governance in corporations is more important than it has ever been in today's world. Becht, Bolton, and Rosell (2002) provide a number of hypotheses to account explain this phenomenon. The overthrow upsurge of the 1980s and the Crisis of East Asia of 1997 are two examples of these kind of events. Companies need to optimize benefit competence and stockholder worth to generate cash to oil development potential, as noted by Yoshikawa & Phan (2001), as a result of greater worldwide rivalry and fast technical advancements resulting in reduced value limits. Activity difficulties, such as large gaps amid regulator and money

movement human rights and inadequate marginal human rights defense (Claessens et al. 2002). As a result, there is an urgent need to address several problems and business ascendancy in Asia. Several recent legal, economic, and monetary reforms in Bangladesh have built the pillars of corporate governance by encouraging more slide, answerability, and adherence to the laws in the country business sector. These considerations have bolstered the motivation to improve Bangladeshi economy. Even though the experience in Bangladesh has only been short, it has shown that business communities have gone through many steps to adopt good corporate governance principles. Corporate governance isn't just something that government groups are interested in. A number of private forums and groups have also been set up to help spread the idea.

Objectives of the study

The primary objective of this study is to examine the effect of corporate governance practices on the financial performance of traditional banking firms traded on the Dhaka Stock Exchange in Bangladesh.

Secondary objectives are:

1. To examine the typical board structure in Bangladesh's traditional banking organizations.

2. To determine how corporate governance affects bank performance on how well a bank performs.

3. To assist the industry's decision-makers since little research had previously been done in this area.

4. To determine the extent to which the incidence of panel conferences and the percentage of women on the board both have an impact on the organization.

Scope of the study

The proposed research aims to investigate the relationship between corporate governance mechanisms and financial performance within the context of listed banks in Bangladesh. Corporate governance is a critical aspect of ensuring effective management, accountability, and transparency within organizations. This study will focus on understanding how various corporate governance mechanisms impact the financial performance of banks in Bangladesh. When it comes to a company's potential to turn a profit, sound corporate governance is an essential component. A very little change in one or more of the components of corporate governance may have a large and discernible effect on the amount of money that a company makes. This study was evaluated using a variety of criteria, and the results may help shed some light on the problem with corporate governance. Due to the fact that it is mainly founded on the results of the inquiry, the advice made in the report have to be taken into account as well.

Problem Statement

The primary research problem in this study is to examine the relationship between corporate governance mechanisms and the financial performance of banks that are listed on the stock exchange in Bangladesh. This entails investigating how different aspects of corporate governance practices within these banks contribute to or influence their financial performance metrics. The process of operating a corporation in such a way that its owners or other stakeholders are receiving a fair return on their investment and that the firm's financial performance is solid is known as corporate governance. The research that is included in this report will demonstrate how the corporate governance elements and the financial presentation of the nominated banks that are registered on the Dhaka stock exchange are connected to one another (DSE). Key Components:

Corporate Governance Mechanisms: The study aims to identify and analyze various corporate governance mechanisms that are in place within the listed banks in Bangladesh. These mechanisms could include board composition, executive compensation, ownership structure, audit practices, disclosure standards, and other relevant factors.

Financial Performance: The research will evaluate the financial performance of the listed banks. Financial performance indicators could encompass metrics such as return on assets (ROA), return on equity (ROE), net profit margin, asset quality, and other relevant financial ratios.

Relationship Analysis: The core objective is to establish a connection between corporate governance mechanisms and financial performance. Researchers might investigate whether stronger governance practices lead to better financial performance, or if there's a significant impact on certain financial indicators due to specific governance practices.

Context of Bangladesh: The research problem is specifically situated in the context of Bangladesh, which implies that the findings may be influenced by the country's regulatory environment, cultural norms, economic conditions, and specific challenges faced by the banking sector in Bangladesh.

Listed Banks: The study is limited to banks that are listed on the stock exchange. This selection criterion suggests that the research focuses on entities that are subject to public disclosure and regulatory scrutiny, which can have implications for their governance practices and financial performance.

Review of Related Literature

Business authority's influence on business performance has been studied extensively. Most of these studies support the premise that good make up is linked to business performance, which we shall discuss more below. Jensen and Meckling (1976) planned a link between corporate governance and organizational effectiveness. They blended components of the activity philosophy, stuff price theory, and finance philosophy to produce the firm ownership structure theory. The rising agency cost will reduce the firm's net value. Rising management ownership will boost the company's worth. This line of

reasoning was also presented in additional empirical research, all of which came to the same conclusion (Milton 2002). The findings of the research that came after Jensen and Meckling's (1976) study investigate the influence of different ownership structures. Eldenburg et al. (2004) imagined that various proprietorship structures would be related with various directorate priorities and styles of corporate management.

They examined significant actions that boards take, such as the choice to change the CEO, as well as the degree to which this choice varies based on the kind of ownership, in order to assess this idea. The ownership structure of the company has a result on the arrangement of the panel of directors, which in turn causes shifts in the factors that determine the frequency with which board members and the CEO step down from their positions. When it comes to the effects of being on board, empirical studies produce contradictory outcomes (outside directors and board independence, specifically). Some people say that there shouldn't be any more outside directors than there now are (Potton and Baker 1987 and Jensen1993). There is no data to back up the claim that companies with outside directors perform better (Abdulsamad and Zulkafi 2007). Though, there is solid indication that external directors perform admirably in nursing and switch roles (Weisbach 1988; Masulis et al 2005 and Block 1999). Weisbach (1988) investigated the possibility there are several dominated each other's. He drew parallels between the departure of CEOs and rising stock prices and profits. He also investigated if the connection between the CEO and the CEO's successor differs depending on the extent of the company, the possession construction, or the industry. Yermack (1996) conducted research on how the size of a board influences management as well as the success of a business. The purpose of this education is to inspect the hypothesis that the effectiveness of a panel of managers, which is responsible for overseeing and making decisions for a corporation, is proportional to the size of that board. Market value to replacement cost was the dependent variable in the reversion study, and he start that board size was the most significant explanatory factor. Yermack (1996) employs the reoccurrence on properties ratio and the reoccurrence on auctions ratio as supplementary tools for assessing a company's worth and profitability.

It would appear that companies with large boards produce less profit and make less efficient use of their assets. National features are the most significant factor determining business authority, and investor protection in the country and firm governance are complimentary. Because less developed nations lack institutional infrastructure and extensive capital markets, improving governance frequently has less benefits than costs. This is because the capital markets are extremely competitive and shallow. They came to the conclusion that the characteristics of the country were responsible for a sizeable amount of the variance that was discovered in the evaluation of corporate governance.

The absence of legal safeguards for investors in Italy prompted Volpin (2001) to study the factors that affect CEO turnover and business value as a function of governance and possession. According to his findings, a lack of permitted defense for savers and, in particular, top managers with ties to the controlling shareholder, is a hallmark of poor governance. According to what he discovered, turnover is more sensitive to performance in circumstances in which control is at risk and in circumstances in which controlling owners maintain a bigger part of the cash flow rights. In particular, Arun and Turner (2004) tackled the challenges of corporate governance that come up when doing business

with financial institutions in underdeveloped nations. They say that a prudential regulatory framework is the only thing that is needed to make banking reforms work. This is based on a theoretical look at bank corporate governance. Developing countries must privatize financial institutions if they want to fix up their banking systems. They also imply that changes may have to be made to a firm's business authority in order for the government to be bright to sell its share in the company. They also originate that the augmented race that may result from the admission of international banks could potentially contribute to changes in the commercial authority procedures of banks that serve emerging economies. This was another finding made by the researchers. Abdulsamad and Zulkafli (2007) examined the business authority of publicly registered banking enterprises in nine Asiatic developing nations and found that bank and non-bank monitoring approaches are different. They divided the corporate governance systems that fulfilled the aim of monitoring banking firms into the following categories: first, the technique of ownership monitoring for large shareholders; next, ownership by the government; and finally, ownership by foreign investors.

The second strategy is the approach of internal control and monitoring of controls. A controlling nursing system originates in at number three, while a disclosure monitoring system occupies the number four spot. The authors of this study employed a regression model based on the hypothesis that there is a causal connection between the business authority nursing system and the business presentation of investment companies as restrained by (Tobin's Q ratio and ROE). This conclusion was obtained because the researchers hypothesized a causal relationship between the two variables. As the research shows, there is no connection between performance and the way internal controls are watched. All forms of ownership monitoring have a negative correlation with bank performance indicators, but regulatory and disclosure monitoring both have favorable correlations. Spong and Sullivan (2007) carried out a study in which they selected a number of state-chartered community banks at random for the purpose of determining the extent to which particular facets of corporate governance influence bank performance.

They came to the conclusion that reducing the potential for principal-agent conflicts, as predicted by financial theory, could be accomplished by providing recruited management with some ownership in the bank. This would be consistent with the expectation that principal-agent conflicts would be reduced. They also found that boards of directors had a higher beneficial impact on public banks' presentation when managements have a important monetary stake in the bank. That was another discovery of theirs. At the end of the day, they concluded that managers' and directors' wealth, in addition to their positions within the company's financial structure, had a significant effect on both their own risk tolerance and the bank's willingness to take chances. Micco, Panizza, and Yanez (2004) found that a significant association does exist between ownership and presentation in emerging nations, but that this correlation does not exist in industrialized ones. Foreign banks make local banks in emerging countries more efficient by cutting down on overhead costs and spreads, but they don't have much of an effect on how much money the local banks make. Another finding from a study. Khanna and Rivkin (2001) looked at how participation in groups affects how much money a business makes. They discovered evidence that company groupings had an effect on the patterns of economic performance. Returns tend to be more comparable amongst companies

operating within the same business group as opposed to companies operating within separate groups.

This research showed that the governance, profitability, and efficiency of Bangladeshi banks are all affected by their ownership and control structures. It turns out that there are two distinct facets to this role, and they're both affected by the authority of the company's ultimate shareholder. There is a negative impact on a bank's efficiency when a single shareholder holds disproportionate elective and money movement human rights to a company. An increase in the concentration of ownership boosts the bank's bottom line. Price et al. (2011) conducted research to determine whether or not adhering to Best Corporate Practice increased the performance of companies. Participants on the market receive information from the Code on the quality of business authority practiced by businesses listed on the Mexican stock exchange. The Code would make this information available to market participants. This study explores the determinants of financial performance. Corporate governance, firm size, and ownership are analyzed as antecedents of financial performance. This novel study combines fuzzy-set qualitative comparative analysis (fsQCA) of a large panel of firms (1207 companies from 59 countries for the period 2013 to 2015) with linear and non-linear multiple regression analysis (MRA). It thus overcomes the known limitations of linear regression analysis (Woodside, 2013) by using a comprehensive approach that embraces Poisson regression and fsQCA. The study has two salient features. First, from a methodological perspective, the study combines the use of three empirical techniques. Second, the study provides some useful hints for practitioners and managers regarding the controversial relationship between corporate governance and financial performance. The academic debate on the link between corporate governance and financial performance is open. For example, do high stock dividends negatively impact future returns? Does a high capitalization ratio affect return on equity (ROE)? And what is the optimal board size? Certain scholars suggest that corporate governance and firm performance are complex (Hermalin & Weisbach, 1991; Dalton & Dalton, 2011; McGuire, Dow, & Ibrahim, 2012a; Fogel & Geier, 2007). These scholars have found multiple contradictory linkages including outside directors, compensation, and board size. Furthermore, the empirical findings in this area are not conclusive (Bhagat & Black, 2001; Klein, 2015). Yet, studies have failed to jointly control for board size, compensation, and ownership dispersion. Research has shown that ownership dispersion is relevant to financial performance (La Porta, Lopez-De-Silanes, Shleifer, & Vishny, 2002; Maury & Pajuste, 2005; Konijn, Kräussl, & Lucas, 2011). This study uses board size and ownership dispersion to provide a new perspective on previous studies (Bhagat & Black, 1999; Eisenberg, Sundgren, & Wells, 1998; Jensen, 1993; Hermalin & Weisbach, 2001). Additionally, there is no clear consensus on the most suitable way to measure financial performance (Dalton & Dalton, 2011). This study uses ROE as a direct measure of financial performance (Bhagat & Black, 1997).

Research Methodology

This article examines if the bank's governance structure affects its performance. According to past study, bank size and riskiness must be considered. Banks of different sizes and risk exposures may have variable degrees of corporate governance performance. The study model will test panel least square regression.

Therefore, null hypotheses can be stated as:

H₁: Board size does not affect bank performance.

H₂: External board of directors does not affect bank performance.

H₃: CEOs does not affect bank performance when CEO and Chairman are separate people.

H₄: Bangladeshi bank size does not affect bank performance.

An institution's success is difficult to pin down and evaluate. It's the final outcome of an action, and how it's measured varies with the type of company and the purpose of the analysis. Academics use metrics of reappearance on possessions and reappearance on fairness to compare the performance of various financial institutions. To ensure the resilience of your system, you should try out different ownership percentages. Board of Director Membership can also be determined by other metrics, such as percentage of ownership. One method for determining the level of management ownership is to look at CEO share ownership. The number of board members who are currently functioning in an active capacity determines the total membership of the board. We take into account both the size of the bank and the risk it faces.

Define the variables

a) Board size: Dimensions the bank board's size is its membership. Board size and bank performance have been studied extensively. They're opposed. Board size depends on company size and type (Dehaence, De Vuyst, and Oogne, 2001). Countries vary. Too-large boards cause a co-orientation difficulty. The CEO's inefficiency generates unsatisfactory performance (Eisenberg et al., 1998; Fernandez et al., 1997). The research demonstrates a undesirable suggestion between board size and bank performance. Large board impairs presentation. Mak and Yuanto (2005) found that board size inversely affects business value. Malaysia and Singapore statistics were utilized. Agency theory explains the competition between shareholders and management and how to monitor it, which improves corporate performance (Fama and Jensen, 1983). Business authority improves banks' efficiency. Mak and Kusandi (2005) suggested that small firms perform better. According to the research, proper board size favorably affects company performance. Large boards hurt bank performance, whereas tiny boards help. Most researchers agreed that a huge board boosted a bank's monitoring capability, but inefficient communication and decision making devalued it. Optimal board size improves bank presentation.

b) Board composition: Board Composition shows autonomous and non-independent managements. This impacts bank performance. Boards oversee internal monitoring and improve company performance. Board composition affects bank performance. Bangladesh's SEC announced (Feb. 20, 2008) the board makeup. One-tenth of firms consider minimum one. Chiang (2005) says board composition improves company success. Independent directors boost bank performance. Some research demonstrates independent director's hurt corporate success. Some scholars say non-independent directors boost corporate performance. If directors aren't independent, they're told.

Agency problems are reduced. Studies show that if bank directors are independent, monitoring efforts improve bank presentation. Much research suggests an independent board of director's increases a company's worth. When the independent board isn't engaged in banking, prosperity expansion improves.

c) CEO-Status: It has an effect on the performance of the corporation when the chairman and the CEO are the same person. These days, the majority of cons are the result of having the same chairman and CEO. Beasley et al. Studies suggest unraveling the chairman and CEO positions will enhance agency performance. When Chairman and CEO choose, the business performs better. Dual employment is a common source of agency difficulties. We hope to increase the value of the bank by maintaining two people in two positions.

d) Bank Size: The size of a bank may influence its performance. Relevant components that are interdependent include bank characteristics and bank performance. Any bank's competence is directly proportional to its size. Increased bank size has a favorable effect on the bank. By expanding its size, a bank may exert more regulator ended its competence, therefore enhancing its performance (Molyneux and Iqbal, 2005). Increasing the size of banks has repercussions for the economy as well. Increasing the size of a bank leads to improved overall bank performance. There are times when an expanding bank's size may also have a undesirable influence on the bank's overall presentation.

Data and Sampling

We gathered 100 secondary observations from the yearly intelligences of 20 banks traded on the DSE from 2017 to 2021 to analyze the connection between corporate governance and bank performance in Bangladesh's publicly traded banking institutions. Utilizing panel data, we may assess the effectiveness of Bangladesh's banking system. There is a strict focus on collecting just the information needed for the study, with any extraneous material being deleted.

Econometric Model and Variables Specification

On panel data, we employ a multiple linear regression model. The data is analysed using descriptive statistics, a correlation matrix, and the results of a Panel least squares regression. Following the regression model used in this paper:

$$BP_{it} = \alpha + \beta_1 BSM_{iT} + \beta_2 BOD_{iT} + \beta_3 IBM_{iT} + + \beta_5 CEO_{iT} + \varepsilon_{it}$$

Where, α = constant
$\beta_1 \ to \ \beta_4$ Coefficient of explanatory variables' determinants;
i (banks number) = 1….17;
t (time-interval) =1……5;
ε = Error term.
(BP) is dependent variable.
And independent variables are
BSM= Banks size measure.
BOD: Total numbers of Bank Directors Numbers.

IBM: The number of Bank Managers.
CEO: The number of Chief Executive Officers.

Results and discussions

Descriptive and correlation analysis

Table 1. Descriptive Statistics

	ROA	Total assets	No of directors	IBM	EPS	ROE
Mean	0.523125	12.56967	11.52500	3.637500	4.212000	9.048625
Median	0.650000	12.64301	11.00000	3.000000	2.370000	9.565000
Maximum	2.020000	14.28002	20.00000	12.00000	32.32000	32.20000
Minimum	-5.870000	10.50219	5.000000	1.000000	0.020000	-29.20000
Std. Dev.	1.136584	0.739362	3.593155	2.576642	5.086408	8.057050
Probability	0.000000	0.000370	0.216777	0.000000	0.000000	0.000000
Observations	100	100	100	100	100	100

Table 1 presents a collection of descriptive data on the variables that are incorporated into the model. The table demonstrates the business authority and bank presentation over a certain period of time based on some particular variable impacts. Calculated variable star, counting Mean, Standard Deviation, Minimum, and Maximum values, are displayed in Table 1 and are derived from the data found in the chosen sample Bank. The reappearance on assets of all twenty banks, on average, is.52 percent, the mean number of total assets held by banks is 12.56, and the average number of directors working in banks is approximately 11.52. The return on equity for these banks is an average of 9.04 percent. The standard deviation of the total assets comes in at.73. In addition, the return on assets ranges from a low of -5.87 to a high of 2.02, with a minimum return of -5.87 and a maximum return of 2.02. The other variables, such as earnings per share of companies and independent directors of banks, have remained relatively constant at 3.2 and 4.21 respectively. Because the kurtosis value of all the variables is more than three and their skewness is positive, it can be concluded that all of the variables are definitely tilted and leptokurtic. The association constant is a statistical term for the forte and way of a lined connection amid deuce variable star on a scatterplot. Its abbreviation in the field of statistics is r. The value of r is never outside of the range of +1 and -1. To interpret its value.

Table 2. Pearson Correlation Matrix

	No of DI	IBM	Total asset	ROA	ROE	EPS	CEO
No of DI	1						
IBM	0.03	1					
Total asset	-0.14	0.62	1				
ROA	-0.0015	-0.04	0.08	1			
ROE	0.66	0.7	-0.11	0.6	1		
EPS	-0.24	0.27	0.1	-0.13	0.17	1	
CEO	0.38	0.03	-0.01	0.006	-0.04	0.005	1

According to our correlation tables, two out of the maximum number of variables have a positive association with one another, while the other variables have a negative relationship. For instance, there is an inverse relationship between the total asset, salaries each part, and reappearance on possessions, as well as the number of directors a bank has. In addition, IBM has a optimistic connection with Total asset but a negative correlation with Return on Assets (ROA). There is an optimistic connotation among the value of CEO and ROA and EPS, yet there is a negative correlation between CEO value and ROE. There is a optimistic connection between Number of Directors on the Board and IBM (r=0.03), ROE (r=0.66), and CEO (r=0.38), whereas there is a undesirable correlation between Number of Directors on the Board and Total Assets (r=-.14), ROA (r=-0.0015), and EPS (r=-.24). Whereas IBM has a positive association with Total asset (r = - 0.62), ROE (r = - 0.7), EPS (r = - 0.27) and CEO (r = - 0.03) but a negative correlation with ROA (r = -.04). In addition, Total asset has a negative association with ROE and CEO (r=-.11), (r=-0.1), and a positive correlation with ROA and EPS (r=- 0.08), (r=- 0.1). ROA possesses a positive association with ROE and CEO (r=- 0.6), (r=- 0.006), however its correlation with EPS is negative (r=-.13). In conclusion, return on equity (ROE) shows a positive association with earnings per share (r=0.17). Where return on equity has a negative connection with chief executive officer (r = - 0.04) and earnings per share has a positive association with chief executive officer (r = 0.005).

Econometrics Analysis

Table 3. Random effect panel regression 1 output

Variable	Coefficient	Std. Error	T-Statistic	Prob.
Total Asset	0.52	0.25	2.06	0.04
No Of Directors	0.02	0.04	0.37	0.71
CEO	0.63	0.02	0.47	0.05
IBM	-0.06	0.07	-0.79	0.04
C	-6.05	3.24	-1.87	0.04

This research considers 20 planned banks for 2017-2021. To achieve the study's aims, the Panel OLS Regression with Random Effect Model was used. Tables 3, 4, and 5 show RER findings. The Regression Model is statistically significant and fit because F-statistics is 0.000, which is less than 0.05. Table 3 shows that two of four independent variables are significant and can be utilized to accept or reject the hypothesis. No of directors and IBM have probabilities over 0.05 (0.71 and.43). Falsifies the hypothesis.

Table 4. Random effect panel regression 2 output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Total asset	1.67	1.70	0.98	0.33
No of directors	0.27	0.32	0.85	0.40
CEO	1.25	0.40	0.75	0.25
IBM	-0.68	0.49	-1.40	0.17
C	-12.63	21.63	-0.58	0.56

In light of the purpose of the research, we will be employing the REPRM for the regression. The fact that the regression model's probability value for the F-statistics is 0.000, which is less than 0.05, demonstrates that the model fits the data and is statistically significant. The outcomes of regression 2, which compares the monetary presentation of the 20 national central banks of different nations. According to the findings, Total Asset, Number of Directors, and Chief Executive Officer all have a score of 1.67, 0.27, and 1.25 respectively, which indicates a positive and insignificant correlation with Bank Performance Indicators (ROE). While IBM and BP may have a strong negative connection (P =.02).

Table 5. Random effect panel regression 3 output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Total asset	-2.09	0.96	-2.18	0.03
No of directors	-0.35	0.18	-1.93	0.06
CEO	-0.24	0.47	-2.45	0.09
IBM	0.80	0.27	2.91	0.00
C	31.65	12.22	2.59	0.01

It is important to point out that the findings of regression 3 are considerably distinct to those of regressions 1 and 2, which principals to the assumption that the primary answers of this training are reliable since the example was used to get rid of the probable outlier. The findings suggest that the adjusted R-square value is 0.58; this indicates that the explanatory variables that are included in this model are responsible for explaining 56% of the changes in the dependent variable. The fact that the F-statistics probability value is 0.00 demonstrates that the regression model is both statistically substantial and a appropriate model. The total asset, the number of directors, and the CEO all have a substantial and adverse relationship with BP (EPS). EPS is likewise favorably associated to IBM, albeit the relationship is not substantial. The overall results of all three regressions suggest a mixed impact. As indicated by regression number 1, if one unit each of total asset, number of directors, and CEO is raised, then bank performance will also rise. However, the transposition result shown by regression 3 indicates that if there is a rise of one unit in total asset, number of directors, or CEO, then BP will fall by one unit.

Summary of findings

We can summarize the findings as follows:

❖   Better corporate governance and would increase Bank performance metrics with regard to banks.

❖   This research looked at how corporate governance affects financial institutions. The result of business authority on bank performance was examined using a panel data regression model. Utilizing data from 2017 to 2021, the study aimed to answer issues about the extent to which corporate governance affects bank performance.

❖   This study's findings maintained the idea that sound business authority definitely touches financial institutions' bottom lines. Improvements in key measures of a bank's

presentation are to be expected as a direct outcome of implementing best performs in business authority. The answers of this study provide credence to the idea that better corporate governance is linked to higher profits.

Recommendations

❖   Banks' adherence to Corporate Governance Codes in the Bangladeshi Financial System should be monitored on a regular basis, and various measures should be taken to guarantee that this is the case.

❖   Banks under scrutiny in this research should begin by examining their existing corporate governance framework and Bank performance indexes. Beyond following corporate governance laws to the letter, bank boards and management should make good governance a way of life.

❖   Bank boards and management should assess performance indicators in light of corporate governance frameworks, since these affect banks' performance and survival in the corporate environment. Corporate governance may transform the banking business. Archimedes, the renowned mathematician, said he could move the earth with a lever. If the same corporate governance lever is pushed across the nation's economy, we may expect changes in the Investment manufacturing. Business authority should be adopted by the nation's top institutions. Listing criteria and yearly reports might impact the listed purpose.

Conclusion

This study using panel data and OLS estimates, we evaluate the hypothesis. According to this study, an external panel fellow, the CEO's status, and the board of directors favorably affect the effectiveness of openly operated groups in Bangladesh. The size of the bank can affect ROA, ROE, and EPS, although these outcomes are not statistically significant. This article improves the efficiency of Bangladeshi banks by establishing robust corporate governance procedures. These empirical findings have wide-ranging implications. Both a bank's board of directors and management team must control all variables that assess corporate governance and bank performance qualitatively and quantitatively. It is a given that regulatory bodies such as the Central Bank of Bangladesh (BB) should overhaul their bank supervisory and regulatory framework to prevent corporate banking failures caused by commercial authority and bank presentation. Various stakeholders in the investment manufacturing, such as depositors, customers, shareholders, etc., should be involved to ensure unethical and unwholesome practices do not occur. Regulators should revamp their bank.

Author Contributions

Md. Nasirul Islam have made a substantial contribution to the concept or design the article; and analysis, interpretation of data for the article. Have given final approval of the version to be published and accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Farha Siddique helped to collect the data and involved in drafting the manuscript or revising it critically for important intellectual content.

Abu Hurira have given final approval of the version to be published and accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Original Research

The Nomination and Remuneration Committee: Does it Really Matter on the Financial Performance of Insurance Companies in Bangladesh?

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Abstract

The establishment of the nomination and remuneration committee (a key element of corporate governance structures) arises from the imperative to uphold principles of fairness, impartiality and transparency within the organization which serves to strengthen stakeholders' confidence and enhance overall business performance. The purpose of this paper is to investigate the relationship between a firm's financial performance and its nomination and remuneration committee (NRC). As shown in the section delineating the research technique, the statistical software STATA was employed to analyze the correlation between the independent and dependent variables in this inquiry. The dataset consisted of total 48 insurance firms listed in the Dhaka Stock Exchange over the time period of 2015 to 2022 resulting in a total of 384 firm-year observations. The results show that there is a statistically significant positive relationship between the financial measures (EPS, ROE) and the independent variable (NRC) except the ROA which is not statistically significant. This investigation seeks to address a gap in the existing literature by examining the company financial performance within the emerging insurance sector of Bangladesh. The study concludes by suggesting that further investigation and research in this area are warranted. Presumably, this means there are more aspects to explore regarding the relationship between financial performance and NRC in the context of the insurance sector in Bangladesh.

Keywords: Firms' Performance, Insurance Companies, Nomination and Remuneration Committee (NRC).

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Introduction

The issue of corporate governance has been a source of interest to investors, policy makers, and corporations especially after recent corporate scandals (Aribaba and Ahmodu, 2017; Sobhan, 2021). Corporate governance can be defined as a set of mechanisms which ensures that potential providers of external capital receive a fair return on their investment (Derayat et al. 2020). Governance ratings of the company had a significant positive impact on its financial performance (Datta, 2018). The importance of this matter further enhanced when dealing with insurance companies because insurance companies promote savings and investment by managing risk in the economy (Kripa, 2016). As a result, researchers and other stakeholders are very much interested to understand the nexus between corporate governance and firm performance.

As a governance tool the topic of executive compensation has drawn considerable attention from shareholders, investors, and regulators alike in today's fast-paced and constantly-changing corporate world. The remuneration packages awarded to senior executives exert a profound influence on the conduct, performance and overall success of businesses. The research study of Almarayeh (2021) also supported this phenomenon through the findings that there is a positive relationship between board compensation on firm financial performance. The necessity for efficient corporate governance processes becomes more and more important as businesses continue to negotiate the complexity of international marketplaces and public demands. And corporate financial performance (CFP) is a key benefit that comes with the adoption and implementation of a good corporate governance structure in organizations (Asamoa and Puni, 2021). Within a corporate governance structure, the board includes a specialized subcommittee known as the Nomination and Remuneration committee. Its primary responsibilities encompass recommending suitable candidates for senior management positions on the board and determining their compensation packages. The establishment of the nomination and remuneration committee arises from the imperative to uphold principles of fairness, impartiality and transparency in the selection of board members and senior executives. The process becomes more impartial and less prone to potential conflicts of interest by having a dedicated committee. The committee's activity aids in locating people with the necessary training and expertise to run the business successfully. Setting proper compensation packages is also essential for attracting and keeping talented workers while coordinating their interests with the long-term profitability of the business. Overall, the committee is essential to corporate governance and building investor faith in the company's management. The determination of executive compensation is entrusted to the remuneration committee, a key element of corporate governance structures. This committee aligns executive pay with the organization's strategic objectives and its long-term sustainability. An effective nomination committee could play an important role in enhancing the board of directors' effectiveness and hence firm performance (Al-Absy and AlMahari, 2023). The research findings of Yahaya (2022) indicate a significant positive relationship between the remuneration committee and profitability of the business. By establishing a well-structured independent remuneration committee, the process of setting executive pay can be enhanced to be more transparent, accountable and equitable. Such measure serves to bolster stakeholders' confidence and enhance overall business performance.

Problem statement

The purpose of this research is to determine how Nomination and Remuneration Committees (NRCs) affect the financial success of Bangladesh's listed insurance companies. Due to a number of compelling factors, including corporate governance enhancement, legal framework, investor confidence, sector-specific dynamics, limited past research, practical ramifications, and strategic decision making, this topic is highly relevant today. The efficacy of board committees is one of the least studied topics (Cybinski & Windsor, 2013; Huse, 2011; Handa, 2018). Based on the available information, there appears to be a dearth of study undertaken on this particular subject matter within the context of Bangladesh. According to the existing literature, it was observed that a majority of studies opted to utilize banks, as well as other financial institutions, as their research subjects (Habib, 2016; Pravitasari and Setiany, 2022; Tornyeva and Wereko, 2012). Because of the capital-intensive nature of the insurance business, this investigation chosen insurance companies as the subjects of the research. The Insurance company provide unique financial services to the growth and development of the economy (Udayanga and Buddhika, 2021). Ultimately, this study aims to provide valuable insights for managers and investors in their decision-making process by examining the impact of NRC on financial performance of the companies.

Bangladesh Corporate Governance Code 2018, mandates that companies listed on the stock exchange establish both an audit committee and a nomination and remuneration committee (NRC) as a means of demonstrating their adherence to corporate governance regulations. This legislation outlines comprehensive guidelines concerning the composition, functions and duties of the NRC, which plays an important role in assisting the board of directors in developing nomination criteria and policies for evaluating the qualifications, positive attributes, experiences and independence of directors and senior level executives. Additionally, it provides a framework for the formal consideration of director and senior executive remunerations. This research endeavor aims to investigate whether the establishment of a robust and well-structured NRC has a positive impact on the financial performance of insurance corporations of Bangladesh. The study evaluates financial metrics such as profitability, solvency and efficiency to determine the potential influence of NRCs on these aspects.

Literature Review and Hypothesis Development

One of the most crucial committees within a company's board of directors, known as the nomination and remuneration committee (NRC), plays a central role in mitigating agency conflicts by ensuring that newly appointed board members collaborate effectively to advance the interests of the shareholders. Consequently, the NRC wields significant influence over the ultimate success or failure of the business. Research conducted by Zraiq and Fadzil in 2018, titled "The Impact of Nomination and Remuneration Committee on Corporate Financial Performance," identified a positive correlation between the NRC and Corporate Financial Performance (CFP) on Jordanian enterprises. This study revealed that the NRC's decision regarding board appointments and the configuration of the executive management team have a discernible impact on the CFP of all enterprises. These findings were corroborated by Ajemunigbohun et al. in their 2020 research.

To increase the likelihood that the firm will succeed, the NRC must ensure that the appropriate candidate with the relevant profile is selected (Appiah & Chizema, 2016). An independent NRC with independent members is less likely to have the CEO or other executive directors influence the appointment of directors, according to a number of empirical studies (Zraiq and Fadzil, 2018). According to Cybinski and Windsor (2013) and Zajac & Westphal (1996), this event will steer to an enlarge in the recruitment of executives who have a recognition for ardently utilizing their influence over the administrative directors. Above all, the NRC needs to be powerful enough to make independent proposals on its own without engaging the CEO or the executive directors (Zraiq and Fadzil, 2018). An increased representation of external directors on the board or the remuneration committee would encourage management to act more pro-actively, according to previous research studies that looked into the effectiveness of compensation committees. Jermias & Gani (2014) investigated the relationship between several board variables and firm performance. Their results were consistent with the view that firms benefit from competent board members to monitor managers which ultimately ensure better performance for the business. According to Bhattacharyya and Mohanty (2018), NRC is in charge of making sure that (a) the board's composition is appropriate in terms of capabilities, diversity, and independence; (b) the succession planning is solid; and (c) the remuneration policy structures are suitable for luring and retaining talent at the board and senior management levels.

The effectiveness of nomination committees is the subject of few existing literature. There is no factual evidence to back up the claim that the creation of a nomination committee would have any impact on the levels of CEO compensation. According to a recent study, Al'Absy, Ismail, and Chandren (2018) contend that board chairmen (BC) may have a significant impact on the firm's productivity, particularly if they serve on board committees. Aldegis et al. (2023) developed a conceptual framework to support a research study targeting 68 non-financial companies over 4 years to evaluate the impacts of CG (particularly through the characteristics of nomination and remuneration committee and risk management committee as tools for good governance) on financial performance in Jordan as a developing country. Alfarisa and Harymabwan (2021) state that the study discovered a negative relationship between independent commissioners and directors' compensation, demonstrating that concerns with a higher segment of free-spirited commissioners pay their administrators less as a result of better control over management's opportunistic behavior. The study found a good relationship between the success of the company and the remuneration committee, according to Harymawan et al. (2020). Izquierdo, Mendez, and Garcia (2018) claim that their study discovered lower CEO pay and CEO pay growth in companies with female representation on their compensation committees. Bel-Oms and Moliner's findings from 2022 show that the presence of remuneration committees increases the likelihood that companies will disclose information about their corporate social responsibility efforts, and the presence of independent board members positively modifies this association. Finally, NRC's existence contributes to the company's value. Additionally, the board frequently possesses distinctive ideas, experiences, and thinking abilities, which forms the basis for improved outcomes during the formulation of decisions and policies and upgrades the CFP (Pirzada et al., 2017).

Theoretical background

The concept of corporate governance stems from a number of theories that explain the intricate dynamics within organizations and their impact on firm performance such as the Agency theory, the stewardship theory, and resource-based theory and the stakeholder theory (Maharjan, 2019). This paper explores how the NRC operates within these theoretical frameworks, with a particular focus on the agency theory and resource dependency theory.

Agency theory

The agency theory, initially proposed by Berle and Means (1932) and further developed by Jensen and Eisenhardt, (1989); Meckling (1976), investigates the challenges arising from the separation of ownership and control in organizations. Two primary concerns underpin this theory, information asymmetry and the misalignment of interests between principals (shareholders) and agents (managers). The agent typically possesses more extensive information about the company, creating a power disparity. Additionally conflicting interests may emerge between the principals and the agent due to differing objectives. There may be disputes of a gain between the ruling and the emissary as a result of their having different interests (Jensen and Meckling, 1976; Hill and Jones, 1992).

From an agency theory standpoint, the NRC addresses the information asymmetry issue by facilitating transparency and accountability in executive appointments and remuneration. By overseeing the selection of qualified individuals and designing performance-based compensation packages, the NRC mitigates potential conflicts of interest between executives and shareholders.

Resource Dependency theory

In contrast, the resource dependency theory emphasizes an organization's reliance on external resources for optimal functioning and financial performance. It centers on the ability of board members, particularly those in the NRC, to provide access to critical resources required by the firm. This theory suggests that an effective NRC can play a major role in ensuring the organization secures the necessary talents, skills and competencies to enhance shareholders' returns (Zraiq and Fadzil, 2018).

The resource dependency theory underscores the NRC's role in attaining external resources, including human capital. Through its oversight of talent acquisition and remuneration strategies, the NRC ensures that the organization attracts and retains the necessary expertise and competencies to remain competitive and financially viable. From this discussion the following hypothesis can be developed:

H_1: There is a connection between the nomination and remuneration committee and ROA.

H_2: There is a relation between the EPS and the nomination and remuneration committee. H3: The nomination and remuneration committee and ROE are related.

Research Methodology

This study aims to examine the quantitative relationship between the NRC and the financial performance of the listed insurance companies in Bangladesh. This study utilizes secondary panel data derived from the audited financial statements appended to the annual reports of insurance companies registered on the Dhaka Stock Exchange (DSE) over a span of 8 years, from 2015 to 2022. The sample comprises of total 48 insurance companies that have been listed.

The purpose of this study is to conduct an empirical examination of the regression equation associated with the stock market performance model in order to address the research objectives. In addition, the study will employ descriptive statistics, correlation matrix, and regression analysis to provide empirical evidence in support of those hypotheses. Microsoft Excel is commonly employed for the purpose of data collection. The study was undertaken to assess the dependability and precision of data through the utilization of STATA software. The hypothesis has also been examined in order to ascertain whether the association is positive or negative.

Model specification

(1) $EPS_{it} = \beta_0 + \beta_1 NRC_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 Leverage_{it} + \varepsilon_{it}$

(2) $ROA_{it} = \beta_0 + \beta_1 NRC_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 Leverage_{it} + \varepsilon_{it}$

(3) $ROE_{it} = \beta_0 + \beta_1 NRC_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 Leverage_{it} + \varepsilon_{it}$

(In this case, β_0 = Regression Constant; β_1…. B_4 = Regression coefficient, represents the error term)

Table 1. Summary of Variables Measurement

No	Variables	Operationalisation
(1) Dependent Variables	(1) ROA (2) ROE (3) EPS	(1) Earnings divided by total assets of the firm. (2) Earnings divided total equity (3) Net income divided by total number of outstanding shares
(2) Independent Variable	(1) NRC	Measured by '1' if company has NRC and '0' otherwise
(3) Control Variables	(1) FA (2) FS (3) Leverage	(1) Natural log of firm total assets (2) Natural log of firm size (3) Debt-equity ratio of the firms

Descriptive Presentation and Analysis

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
NRC	384	0.5130208	0.5004825	0	1
EPS	384	1.857716	1.364378	0	8.43
ROA	384	0.0504615	0.0221823	0.0102	0.207
ROE	384	0.1308274	0.6596183	0.0163	10.88
FA	384	3.569993	2.655086	1.0986	21.63
FS	384	21.61255	1.106427	19.99	24.75
Leverage	384	0.6484754	0.2511547	0.1629	1.77

As previously indicated, this study centers its attention on three dependent variables, namely earnings per share (EPS), return on assets (ROA), and return on equity (ROE), with the (NRC) being regarded as the independent variable. Table 2 presents a succinct summary of the descriptive statistics pertaining to the dependent and independent variables utilized in the study. Descriptive statistics comprise a set of measures that include the mean, median, minimum, maximum, standard deviation, skewness, and kurtosis. The mean values of NRC, EPS, ROA, ROE, FA, FS, and Leverage are 0.5130208, 1.857716,0.0504615, 0.1308274, 3.569993, 21.61255, 0.64084754 respectively, as denoted by the mean. The dataset utilized in this research encompasses the time period from 2015 to 2022 and comprises a comprehensive set of 48 insurance companies that are publicly listed on the DSE. So table 2 presents the dataset consists of 384 observations. Nevertheless, it is crucial to acknowledge that the organizations included in the dataset exhibit a range of ages.

Table 3. Regression Analysis

NRC	Coef.	Std.Err.	T	p>[t]	[95%conf.	interval]
EPS	0.0616081	0.0182671	3.37	0.001	0.0256899	0.0975263
ROA	1.464078	1.480433	0.98	0.326	-1.462592	4.390749
ROE	-.0472394	0.011117	-4.25	0.000	-0.069098	-0.025380
FA	0.0158611	0.0096466	1.64	0.101	0.0031069	0.034829
FS	0.054231	0.0241612	2.24	0.025	0.0067234	0.1017387
Leverage	0.448142	0.0864709	5.18	0.000	0.2781584	0.6182099
_cons	-1.18846	0.5568089	-2.13	0.033	-2.2833	-0.093619

The p value column of Table 3 reveals that all variables, with the exception of ROA, have values below 0.05, indicating a substantial association between the independent variable and EPS, ROE, FA, FS, and leverage. Additionally, there is no connection between the independent variable, NRC, and the ROA.

The R-squared value is 0.0966, as the table also demonstrates. The analysis shows that the firm's market performance may be responsible for a sizeable amount of the entire change, approximately 9.66%.

Table 4. Regression statistics for model 1

EPS	Coef.	Std.Err.	T	P>[t]	[95% conf.	Interval]
NRC	0.5169999	.1363335	3.79	0.000	.2489351	.7850648
FA	-0.865449	0.25158	-3.44	0.001	-.136011	-.037078
FS	0.1988762	0.0612117	3.25	0.001	0.0785191	.3192334
Leverage	-0.480084	.2714848	-1.77	0.078	-1.013889	.053721
_cons	-2.085449	1.362894	-1.53	0.127	-4.76523	.5943317

The outcomes presented in table 4 exhibit a noteworthy level of statistical significance for the NRC variable, supported by a 95 percent confidence level. It is evident from the analysis that the p-values for NRC, FA and FS, with the exception of leverage, all fall below the 0.05 threshold. This observation implies a statistically significant relationship between EPS and the independent variable. Upon closer examination of the study's findings, the R-squared value is calculated to be 0.1046 while the adjusted R-squared value stand at 0.0952. This analysis indicates that a substantial portion of the overall variation, specifically 9.52 percent, can be attributed to the firm's market performance, as illustrated by its earnings per share (EPS). Furthermore, when consider only relevant variables, EPS accounts for 9.52 percent of the total variability. The current analysis also highlights a statistically significant inverse correlation between financial distress risk and leverage, with consequent implications for the firm's market performance. And this suggests that an increase in the ratio of firm assets (FA) and leverage has an impact on the organization's market performance.

Table 5. Regression statistics for model 2

ROA	Coef.	Std.Err.	T	P>[t]	[95% Conf.	Interval]
NRC	.0055642	0.021776	2.56	0.011	0.0012826	0.0098458
FA	-0.00154	0.0004018	-3.65	0.000	-0.002336	-0.000755
FS	-0.00549	0.0009777	-5.62	0.000	-0.007419	-0.003574
Leverage	-0.02125	0.0043362	-4.90	0.000	-0.029782	-0.01273
_cons	.1857081	0.0217685	6.53	0.000	0.1429059	0.2285103

The findings presented in table 5 indicate that the NRC demonstrates a significant level of statistical significance with a confidence level of 95 percent. ROA have significant relationship with NRC as it has p value below 0.05 threshold. The outcomes demonstrate that the R-squared value is 0.1358, but the adjusted R-squared value is 0.1267. The analysis reveals that a significant portion of the total fluctuation, specifically 12.67% may be attributed to the firm's market performance, as elucidated by the return on assets (ROA). In addition, when only pertinent variables are taken into account, the return on assets (ROA) is able to account for 12.67% of the overall variation. The present analysis demonstrates a statistically significant inverse correlation between firm assets (FA), firm size (FS), leverage, and the market performance of the firm. This discovery implies that a rise in the ratio of firm assets (FA) and leverage, as well as the firm size (FS), will affect the market performance of the organization.

Table 6. Regression statistics for model 3

ROE	Coef.	Std.Err.	T	P>[t]	[95% Conf.	Interval]
NRC	-0.0764139	0.0693711	-1.10	0.271	-0.2128144	0.0599866
FA	-0.0060186	0.0128012	-0.47	0.639	-0.0311889	0.0191517
FS	-0.0341395	0.0311466	-1.10	0.274	-0.0953813	0.0271023
Leverage	-0.0409889	0.1381407	-0.30	0.767	-0.3126079	0.2306284
_cons	0.9559375	0.6934867	1.38	0.169	-0.4076258	2.319501

The findings presented in table 6 indicate that, at a 95% confidence level, there is no statistically significant correlation between return on equity (ROE) and the variables under investigation. It is observed that the variables NRC and FS exhibit p-values below 0.05, while FA and Leverage have p-values above 0.05. The analysis further reveals that the R-squared value is 0.0081, but the adjusted R-squared value is -0.0023 which suggest that ROE accounts for only 0.81% of the total variation in market performance. However, when considering only relevant variables, ROE contributes to a mere -0.23% of the overall variation. Notably, this analysis establishes a statistically significant inverse correlation between the variables NRC, FA, Leverage and the firm's market performance. This implies that a higher proportion of NRC, FA, and Leverage negatively impact the market performance of the firm.

Table 7. Pearson Correlation

	NRC	EPS	ROA	ROE	FA	FS	Leverage
NRC	1.0000						
EPS	0.1866	1.0000					
ROA	0.0444	0.3733	1.0000				
ROE	-0.0680	0.0201	0.0634	1.0000			
FA	0.0272	-0.1770	-0.1465	-0.0195	1.0000		
FS	0.1125	0.2090	-0.2159	-0.0597	-0.1016	1.0000	
Leverage	0.1883	-0.0646	-0.1826	-0.0198	-0.0301	-0.1053	1.0000

According to Pallant (2016), the occurrence of multicollinearity can be observed when the correlation coefficients between independent variables above a threshold value of 0.70. Based on the correlation analysis shown in the aforementioned table 7, it is evident that all of the coefficients displayed therein demonstrate values that are less than 0.7. Hence, it may be deduced that the variables exhibit no evidence of multicollinearity.

Table 8. VIF

Variable	VIF	1/VIF
NRC	1.06	0.944627
Leverage	1.06	0.945954
FS	1.04	0.958801
FA	1.01	0.985680
Mean VIF	1.04	

In order to substantiate this claim, it is imperative to calculate the Variance Inflation Factors (VIF) for each independent variable and integrate them into the presented table. Multicollinearity can be mitigated by ensuring that the Variance Inflation Factor (VIF) values remain below 5, and that the reciprocal of the VIF values (1/VIF) are all less than 1. The table presented above provides information regarding variance inflation factors (VIF). Based on the data provided in the table, it is evident that the values of the Variance Inflation Factor (VIF) are all below the threshold of 5. This observation suggests that the independent variables included in this study fall within an acceptable range, indicating that the issue of multicollinearity is not a significant worry.

Here it can be concluded that there is a statistically significant positive relationship between the dependent variables and the independent variable. The primary aim to examine the association between the NRC and a firm's financial performance, is successfully accomplished which support the acceptance of the hypothesis. Hence the findings indicate that the Nomination and Remuneration Committee indeed exerts an influence on a firm's financial performance.

Conclusion and Recommendations

This study's aimed to assess the relationship between the NRC (Nomination and Remuneration Committee) and financial performance within the scope of listed insurance companies in Bangladesh. It has also strived to address the existing knowledge gap concerning the role of NRC as an effective governance tool for managing the financial performance of insurance firms. The study operated on several assumptions to facilitate the analysis of the relationship between independent and dependent variables. It utilized data from 48 listed insurance companies over an eight-year period, and the findings of the study suggest a noteworthy and positive correlation between NRC and the financial performance of these entities.

The positive correlation found between NRC and financial performance implies that the presence and effectiveness of NRCs within these insurance companies are associated with improved financial outcomes. Nevertheless, it is crucial to acknowledge the limitations of the study, particularly its focus on a specific industry, which may limit the generalizability of the findings. In light of these results, the study proposes various avenues for future research in this domain.

One avenue for further research is exploring potential moderating or mediating variables that could provide deeper insights into how NRC influences corporate performance. By considering additional factors that may interact with or mediate the relationship between NRC and financial performance, researcher can gain a more comprehensive understanding of the underlying mechanisms.

Furthermore, expanding the set of variables to encompass various determinants of financial performance within the context of good governance is recommended. This could involve investigating other aspects of corporate governance, such as board composition, other supporting committees (audit committees), and internal control mechanism to understand how they collectively impact financial performance.

The study also suggests that future research endeavors should consider investigating the interplay between NRC and financial performance using alternative theoretical frameworks, such as stakeholder theory, institutional theory and stewardship postulate, as these frameworks may offer valuable perspective within this context (Zraiq and Fadzil, 2018) allowing for a more comprehensive analysis of the subject.

In conclusion, the study's findings suggest a significant positive correlation between NRC and the financial performance of listed insurance companies in Bangladesh, highlighting the importance of effective governance in this sector. However, further research is needed to explore the nuances of this relationship, consider additional variables and apply alternative theoretical frameworks to enhance our understanding of how Nomination and Remuneration Committee contributes to financial performance in the context of insurance companies.

Author Contributions

The manuscript is my original contribution and has not been plagiarized/copied from any source/individual. It does not contravene on the rights of others and does not contain any libelous or unlawful statements and all references have been duly acknowledged at the appropriate places.

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