Annals of Human Resource Management Research (AHRMR)
ISSN: 2774-8561, Vol 5, No 2, 2025, 309-321 *https://doi.org/10.35912/ahrmr.v5i2.2833*

Financial performance: The impact of age and background of retired military officers on oil, gas, and coal companies

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Article History
Received on 21 April 2025
1st Revision on 29 April 2025
2nd Revision on 06 June 2025
3rd Revision on 21 June 2025
Accepted on 25 June 2025

Abstract

Purpose: This study aims to investigate the impact of the age and background of retired military officers in management roles on the financial performance of companies.

Methodology/Approach: The research was conducted across 22 companies operating in the Oil, Gas, and Coal sub-sector, selected based on specific criteria. The study utilized a quantitative approach, employing panel data regression analysis to assess the relationship between the independent variables (age and background of retired military officers) and the dependent variable (financial performance) over the period from 2021 to 2023.

Results: The results of this study found that management age has a significant positive effect on financial performance, and military background has a significant positive effect on financial performance.

Conclusions: The research concludes that the age and background of retired military officers play a critical role in shaping the financial performance of companies, particularly within the Oil, Gas, and Coal sectors. Understanding this relationship can provide valuable insights for organizations in selecting management personnel.

Limitations: A limitation of this study is its focus on a specific sector, which may restrict the generalizability of the findings to other industries or contexts.

Contribution: This study contributes to the fields of management and organizational behavior by highlighting the significance of leadership backgrounds in influencing financial performance. The insights gained can assist companies in making informed decisions regarding management recruitment and development strategies.

Keywords: *Age, Financial Performance, Military Veteran Background*

How to Cite: Chudri, I. R., Fadilla, F., & M.J, E. (2025). Financial performance: The impact of age and background of retired military officers on oil, gas, and coal companies. *Annals of Human Resource Management Research,* 5(2), 309-321.

1. Introduction

Financial performance is a key indicator that reflects how healthy and effective management is in managing resources at its disposal. Financial performance represents the results of management's efforts to manage a company's assets and liabilities over a specific period (Milasari & Nuryadi, 2023). Generally, financial performance is measured through various financial ratios, such as liquidity, solvency, profitability, and operational efficiency (Hasbudin, Fitriaman, & Narlinda, 2022). Several key indicators are commonly used to measure a company's financial performance. One of these is Return on Assets (ROA), which assesses how effectively a company utilizes its assets to generate profits. According to Zaitul, Melmusi, and Ilona (2021), ROA is a crucial indicator, as it reflects management's ability to maximize the use of available resources.

Various factors can influence a company's performance, one of which is the management team's characteristics. One aspect of management characteristics that has not been widely discussed is the age of the management teams. The age of management members affects company performance not only through experience and strategic decision-making but also through their perspectives on risk, innovation, and team management. Generally, management with more experience has a greater capacity to make effective decisions, thereby enhancing a company's financial performance. According to Asch, Knapp, and Jackson (2023), younger management tends to be more open to change and more likely to implement innovative strategies. By contrast, senior management often prioritizes stability and efficiency, although this approach may reduce flexibility in adapting to rapidly changing business environments (Maryati, Nurullah, & Prasetyo, 2024).

Age diversity within a management team is often viewed as a strategic asset, as it combines deep experience with innovative perspectives. This combination enables organizations to respond to complex challenges, such as market changes and technological disruptions, with creative solutions that support the company's competitiveness (Harijono & Tunas, 2019). Another topic frequently explored in research related to the factors influencing a company's financial performance is the background of management members. This background may include experiences as retired military personnel. Since the New Order era, many retired military officers have held important positions in various sectors, including large companies. The involvement of former military officers in corporate management has garnered particular attention because of their potential impact on a company's financial performance. Many large companies in Indonesia, especially those in the oil, gas, and coal sectors, are listed on the Indonesian Stock Exchange (Mahaputra, Sudiartana, Bagiana, Primadona, & Murti, 2024).

Companies in the oil, gas, and coal sectors listed on the Indonesia Stock Exchange (IDX) play a significant role in driving the national economy. Their contributions are evident not only in terms of revenue generation through taxes and royalties but also through job creation and support for related industries. Murhadi, Handoyo, and Ernawati (2024) emphasize that this energy sector is a fundamental foundation for maintaining economic stability and national energy independence. These energy companies also face unique challenges, such as high operational risks, stringent regulations, and various environmental and social issues. In navigating this complexity, the presence of former military members in leadership is often associated with a leadership style characterized by decisiveness, discipline, and ability to make decisions under pressure, which can potentially support the stability and resilience of the company (Areneke, Adegbite, & Tunyi, 2022).

Experts have also highlighted the importance of financial performance analysis in evaluating the health of these companies. Ani, Chariri, and Ghozali (2022) reveal that financial ratios, such as liquidity, profitability, and asset management efficiency, serve as crucial indicators in assessing the performance of energy companies. The findings indicate that optimal financial performance can be achieved through the effective management of assets and liabilities, which plays a role in strengthening the company's position in a highly dynamic and competitive market. According to Permana and Fadjarenie (2024), directors with military backgrounds typically adopt a more cautious approach to risk management and tend to be conservative regarding tax avoidance strategies. The results of this study indicate that companies led by individuals with military backgrounds generally exhibit more stable financial performance. This stability can be attributed to their focus on efficiency in investment allocation and transparency in financial reporting, thus creating a more measurable and sustainable operational environment (Wasdani, Vijaygopal, Manimala, & Verghese, 2021).

Former military members are also known for their skills in motivating teams and fostering a strong organizational culture. In highly competitive industries, such as oil, gas, and coal, employee motivation is a key element in ensuring efficient operations. Research shows that effective leadership can enhance employee productivity, which directly impacts a company's financial performance. This aligns with Chang, David, Low, and Tee (2021), who state that effective human resource management can improve financial performance through increased productivity.

Retired military personnel often bring values such as integrity, openness, and commitment to business ethics, which can enhance the quality of financial reporting and strengthen corporate governance (Ramadhania, Ahmad, Zakaria, & Witiastuti, 2021). This suggests that the involvement of retired military personnel in management boards not only influences managerial aspects but also impacts stakeholders' trust in the company's financial reports. Retired military personnel often have political connections that provide companies with competitive advantages. Easier access to funding sources and government projects is one of the primary benefits they gain, which can ultimately enhance a company's financial performance (Gadi, Bamanga, & Elvis, 2021). These political connections allow companies to gain greater support in terms of policies and resources that can accelerate growth and minimize the barriers faced in a highly competitive market.

This study offers several unique contributions that distinguish it from prior research examining the influence of management characteristics on corporate financial performance. First, it focuses on retired military officers in managerial positions within Indonesia's energy sector, particularly in the oil, gas, and coal industries. These industries exhibit distinct dynamics owing to their high regulatory intensity, significant operational risks, and strong political involvement. Previous studies on military backgrounds in corporate leadership (Ramadhania et al., 2021) have predominantly been conducted in Western contexts or general industries. Consequently, this study provides novel insights into how military leadership operates in Indonesia's unique business environment, where historical and political factors differently shape corporate governance structures.

Second, this study goes beyond analyzing the sole impact of military background by integrating it with management age to examine their combined effects. Prior research has typically treated these factors in isolation; for instance, Gadi et al. (2021) explored the influence of age on innovation, while Chang et al. (2021) investigated the conservative leadership style of military veterans. By synthesizing these variables, this study elucidates whether older managers with military backgrounds tend to prioritize stability at the expense of adaptability or whether younger military-affiliated executives adopt more dynamic approaches to financial decision-making. Furthermore, this study specifically examines financial performance through Return on Assets (ROA), which reflects asset utilization efficiency in generating profits. While prior studies have broadly analyzed financial performance, this research investigates how management traits influence ROA in the capital-intensive energy sector, where financial margins are heavily contingent on external factors, such as government policies and commodity price fluctuations. The findings reveal that military leadership enhances asset management efficiency in highly uncertain operational environments.

From a theoretical perspective, this study enriches the Upper Echelons Theory by demonstrating how non-traditional leadership backgrounds (e.g., military) interact with age to shape organizational outcomes. Additionally, it supports Resource Dependency Theory by revealing how political networks and privileged access of military veterans can serve as strategic resources for firms. The findings also contribute to behavioral finance literature by assessing whether the risk-averse tendencies associated with military leadership (Chang et al., 2021) result in greater financial stability compared to civilian management. Practically, this study provides actionable insights into corporate recruitment and management team composition, particularly in industries that require decisive crisis leadership. Investors may utilize these findings to evaluate whether military-led firms offer stable but potentially lower-growth returns. Regulators and policymakers could apply these insights to assess the implications of military involvement in corporate governance, particularly regarding financial transparency and long-term sustainability.

2. Literature Review

2.1. Upper Echelons Theory

The Upper Echelons Theory provides a robust theoretical foundation for this study, which examines how the age and military background of retired military officers influence the financial performance of oil, gas, and coal companies (Li, Liu, & Wang, 2024). According to this theory, top executives' personal characteristics, such as their age, career experiences, and professional backgrounds, shape their cognitive frameworks and decision-making styles, ultimately affecting organizational outcomes. In this research, we apply this lens to analyze how retired military officers in leadership positions impact key financial metrics, particularly Return on Assets (ROA), in Indonesia's energy sector.

2.2. Financial Performance

Financial performance refers to a company's achievements over a specific period, reflecting its overall health (Alfianto, Irianto, & Prihatiningtias, 2024; Husnah, Aryati, Ramlawati, & Fahlevi, 2023), and is defined as a measure of how effectively individuals and organizations achieve their goals. Stakeholders, including shareholders, creditors, and the government, require this information to assess the alignment between a company's objectives and management outcomes. Financial performance is typically evaluated using indicators such as capital adequacy, liquidity, and profitability. Allowing companies to assess the effectiveness of their financial strategies for both short- and long-term goals.

The choice of performance indicators is crucial because they must accurately represent the variable being measured. Tobin's q is a commonly used indicator for assessing market performance (Hidayat & Aris, 2023; Ligita & Muazaroh, 2020; Munif & Firmansyah, 2024). Factors influencing financial performance can be external, such as macroeconomic conditions (economic growth, inflation, monetary policy) and political connections, which can enhance access to funding and government projects (Alfianto et al., 2024; Dini & Amrizal, 2024; Manurung, 2022), suggesting that politically connected companies often perform better financially due to easier access to funding.

Internal factors that affect performance include risk management, operational efficiency, product innovation, and marketing strategies. Agustin and Sari (2024) note that a company's total assets, which reflect its resource base, also play a significant role in determining performance. Larger companies typically have more power to generate profits and make investment decisions. Financial performance can be measured using various indicators, with Return on Assets (ROA) being a key metric. ROA assesses a company's ability to generate net income relative to its total assets (Idawati and Pratama, 2020). A higher ROA indicates better performance, as it reflects greater returns on assets. The importance of measuring financial performance is underscored by agency theory, which highlights potential conflicts of interest between company owners (principals) and managers (agents) (Dewi, Basyir, & Nursanta, 2022). Effective performance measurement and incentive mechanisms are essential for aligning managers' actions with owners' interests.

2.3. Management Age

In this study, age refers to the age of retired military personnel involved in company management. Age is a significant factor that influences employee performance and job satisfaction. Research indicates a positive correlation between age and job satisfaction, as older employees typically possess more experience and skills (Chairunnisah, Maulana, & Shihab, 2024). Management age impacts decision-making styles, with older managers often relying on experience, while younger managers may bring about innovation (Saputra, 2021). Age diversity in management can be categorized into three groups: Young Adults (18-40 years), Middle-Aged Adults (41-60 years), and seniors (61 years and older). Young managers tend to be innovative but may lack experience in complex decision-making. Middle-aged managers combine experience with industry knowledge, whereas senior managers may struggle to adapt to rapid changes. Diversity in age can also present challenges such as generational conflicts in communication and decision-making styles. Therefore, companies should implement inclusive human resource policies to ensure that all voices are heard. Overall, management age is a key factor in shaping a company's direction and performance. Understanding how age influences decision-making, team dynamics, and innovation is crucial for maintaining competitiveness in today's global market.

2.4. **Management with Military Background**

Company management consists of directors responsible for operations and a board of commissioners who oversee and guide the company. Military management brings valuable skills to human resource management, strategic decision-making, and crisis leadership. Their military experience often equips them with discipline, risk management, and a strong hierarchical understanding, which are assets in a competitive business environment. According to Nizar and Mulyani (2023), companies under financial pressure can secure funding more easily if they have political connections. Similarly, management with a military background is accustomed to making quick decisions and resolving conflicts, thus adding value to corporate leadership. They often possess strong strategic planning and operational management skills.

A company is considered politically connected if at least one major shareholder or senior executive has ties to government officials or politicians (Astuti, Surbakti, & Wijayanti, 2021). Such connections can provide strategic advantages, including easier access to resources and government protection. While military backgrounds offer unique perspectives and skills, these individuals must adapt to fast-paced changes in the business world. They may require training and insight into current business practices to align military principles with commercial operational demands. Factors influencing military-background management can vary based on context, including experience, leadership skills, and political connections. Their military experience can enhance decision-making related to security and defense, whereas their business experience shapes their leadership style.

2.5. Development Hypotheses

2.5.1. The Effect of Management Age on Financial Performance

The relationship between management age and corporate financial performance can be understood through a multidimensional framework that examines how executive age influences leadership approaches, strategic choices, and organizational adaptability (Han & Jo, 2024). Older managers typically bring extensive industry experience and establish professional networks that contribute to stable operational management and risk-averse financial strategies, which are particularly valuable in complex, regulated sectors like energy. Their deep institutional knowledge enables effective navigation of industry complexities, although prolonged tenure may sometimes result in cognitive rigidity that hinders responsiveness to disruptive changes. Younger executives, in contrast, often demonstrate greater willingness to pursue innovative strategies and undertake calculated risks that could drive long-term growth, though potentially at the expense of short-term stability. This generational difference in risk appetite becomes particularly consequential in volatile commodity markets, where investment horizons are long and market conditions fluctuate significantly (Astuti et al., 2021).

The age of management plays a crucial role in determining the financial performance of companies in the Oil, Gas, and Coal sectors (Olawuyi & Chukwuma, 2022). Older managers often leverage their experience to make informed decisions that enhance stability and efficiency within the organization. In contrast, younger managers may be more open to innovation and change, which can also positively impact financial outcomes (Zaitul et al., 2021). The theoretical framework indicates that management age can significantly affect a company's ability to achieve its financial goals. Empirical research supports this notion, showing that management age is positively correlated with financial performance, as older managers tend to make more effective decisions based on extensive experience (Asch et al., 2023).

H1: The age of management has a significant positive influence on the financial performance of Oil, Gas, and Coal companies listed on the IDX

2.5.2. The Effect of Military Background on Financial Performance

The influence of military background on corporate financial performance presents a distinct analytical framework that examines how military socialization shapes leadership approaches, organizational strategies, and ultimately, financial outcomes (Hao, Li, Ni, & Yin, 2023). Executives with military careers typically bring a unique set of competencies, including structured decision-making processes, strong discipline in execution, and heightened risk management capabilities–attributes particularly valuable in capital-intensive industries like oil and gas, where operational precision and safety are paramount (Asch et al., 2023). Their training in hierarchical command structures often translates into clear accountability mechanisms and streamlined operational processes that can enhance efficiency metrics, although it may potentially limit organizational flexibility. A military emphasis on mission-oriented thinking frequently results in focused, long-term strategic planning that aligns well with the extended investment horizons characteristic of energy sector projects (Zaitul et al., 2021).

Military management can significantly impact the financial performance of companies in the Oil, Gas, and Coal sectors. These individuals often possess strong leadership skills, discipline, and a strategic approach to problem solving, which can enhance operational efficiency and decision-making under pressure (Jayanti, Probohudono, & Endiramurti, 2023). The theoretical framework suggests that the unique skills and experiences of retired military officers can lead to improved financial outcomes for organizations (Maryati et al., 2024). Empirical studies have shown that companies led by individuals with military backgrounds tend to exhibit more stable financial performance because their leadership style often emphasizes efficiency and effective resource management (Harijono & Tunas, 2019).

H2: Military management has a significant positive influence on the financial performance of Oil, Gas, and Coal companies listed on the IDX

3. Methodology

3.1. Research Design

This study employed a quantitative descriptive method. Quantitative methods can be defined as research approaches based on the philosophy of positivism, which is used to study specific populations or samples (Sugiyono, 2018). The research design was structured such that the researcher could obtain answers to the research questions. This comprehensive plan encompasses the research program and must include six aspects, as outlined by Ghozali (2018): the nature of the study, type of investigation, level of researcher intervention, study situation, unit of analysis, and time horizon. The quantitative approach allows researchers to formulate specific hypotheses in advance, collect data to support or reject these hypotheses, and statistically analyze the data.

3.2. Population, Samples and Sampling Techniques

According to Sugiyono 2018), the population refers to the entire group of individuals, events, or phenomena of interest that the researcher wishes to investigate. In this study, the population consisted of all oil, gas, and coal companies listed on the Indonesia Stock Exchange, totaling 81 companies. The sample was a subset of the research population. In this study, purposive sampling was used, which is a non-probability sampling method in which members of the population do not have the same opportunity to be selected (Sugiyono, 2018). The sample criteria consist of 22 companies (22 oil, gas, and coal companies multiplied by three periods, resulting in a total of 66 samples).

3.3. Data Collection Technique

The data collection process in this study involved gathering secondary data. Secondary data refers to data that has already been collected and processed by other parties. The secondary data obtained for this study include financial statements of oil, gas, and coal companies listed on the Indonesia Stock Exchange for the period–2021-2023. The data collection technique employed is documentation, which involves collecting documentation or data that provides information or evidence related to the data collection process. The researcher obtained this data directly from the Indonesia Stock Exchange (IDX) website, which includes published financial statements and financial ratios.

3.4. Data Analysis Technique

The data analysis method used in this research was panel data regression. Panel data regression is a statistical analysis technique used to study the relationship between independent and dependent variables by utilizing panel data. Panel data are a combination of cross-sectional data and time-series data, where measurements are taken on the same units over various time periods. The researcher uses EViews version 13.0 to analyze the data. The panel regression model used in this study was formulated as follows:

$$Yit = \beta 0 + \beta 1X1it + \beta 2X2it + eit$$

Note:

Y : Variabel Dependen
X : Independent Variable
I : *Cross Section data*
T : *Time Series data*

4. Result and Discussion

4.1. Research Results

Descriptive statistics provide an explanation or overview of the data by simplifying the information obtained. This process includes measures such as the mean, standard deviation, variance, maximum and minimum values, total, range, kurtosis, and skewness (asymmetry of the distribution) (Ghozali, 2018). Descriptive statistics were used to present the data in a form that is easier to understand and interpret. The output from the descriptive analysis is shown in Table 1.

Table 1. Respondent Data

	X1	X2	Y
Mean	63.29672	0.237692	0.048645
Median	63.66665	0.222200	0.058300
Maximum	86.00000	0.500000	0.592600
Minimum	44.00000	0.066700	-3.540000
Std. Dev.	8.678888	0.099434	0.486113
Skewness	0.170856	0.778646	-6.144726
Kurtosis	2.961425	3.426849	46.52118
Jarque-Bera	0.325202	7.170240	5624.089
Probability	0.849930	0.027733	0.000000
Sum	4177.583	15.68770	3.210600
Sum Sq. Dev.	4896.001	0.642662	15.35987
Observations	66	66	66

Source: Processed Data, 2025

Table 1 provides descriptive statistics for the study variables: management age (X1), military background (X2), and financial performance (Y). The mean age of management (X1) is 63.30 years, with a standard deviation of 8.68, indicating relatively low variability around the average. The minimum age is 44 years, while the maximum is 86 years, suggesting a wide range, but with most observations clustered near the mean. For military background (X2), the mean is 0.24 (24%), with values ranging from 0.07 to 0.50, reflecting moderate representation of military retirees in management. Financial performance (Y), measured by ROA, has a mean of 0.049 (4.9%), but the large standard deviation (0.49) and extreme minimum (-3.54) and maximum (0.59) values indicate significant volatility in profitability across companies. The negative skewness (-6.14) and high kurtosis (46.52) for Y suggest a left-skewed distribution with heavy tails, implying outliers or extreme values affecting the data.

The table above shows that the lowest (minimum) age of management with a military retiree background is 44.00, which is found at PT TBS Energi Utama Tbk in 2023, whereas the highest (maximum) age is 86.00 at Ratu Prabu Energi Tbk in 2022. The average age of management with a military retiree background is 63.296, indicating that, on average, oil, gas, and coal companies tend to have management with a military retiree background of 63.296 years. Meanwhile, a standard deviation of 8.678 indicates that the data dispersion is relatively small because the values are lower than the mean.

Furthermore, the variable for management with a military retiree background has a minimum value of 0.066 at Baramulti Suksessarana Tbk in 2023 and a maximum value of 0.500 at PT Artha Mahiya Investama Tbk, Ratu Prabu Energi Tbk in 2023, and PT Ulima Nitra Tbk in 2022. The average for management with a military retiree background is 0.237, meaning that, on average, oil, gas, and coal companies have a military retiree management background of 0.237. A standard deviation of 0.099 indicates that the data dispersion is relatively small, as the values are lower than the mean. Lastly, the dependent variable, which is the financial performance of the company, has a minimum value of -3.540 at PT Artha Mahiya Investama Tbk in 2023 and a maximum value of 0.592 at Baramulti Suksessarana Tbk in 2022. The average financial performance of the companies is 0.048, indicating that oil, gas, and coal companies, on average, have a financial performance of 0.048. A standard deviation of 0.486 indicates that the data dispersion is relatively large, as the values are higher than the mean.

4.2. Model Accuracy Test

Table 2. Common Effect Model

Dependent Variable: Y
Method: Panel Least Squares
Date: 12/25/24 Time: 15:18
Sample: 2021 2023
Periods included: 3
Cross-sections included: 22
Total panel (balanced) observations: 66

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.571630	0.468368	1.220472	0.2268
X1	-0.002082	0.006714	-0.310101	0.7575
X2	-1.645790	0.586052	-2.808266	0.0066

R-squared	0.111317	Mean dependent var	0.048645
Adjusted R-squared	0.083105	S.D. dependent var	0.486113
S.E. of regression	0.465475	Akaike info criterion	1.352874
Sum squared resid	13.65005	Schwarz criterion	1.452404
Log likelihood	-41.64485	Hannan-Quinn criter.	1.392203
F-statistic	3.945728	Durbin-Watson stat	1.507395
Prob(F-statistic)	0.024295		

Source: Processed Data, 2025

The Common Effect Model regression results show that military background (X2) has a statistically significant negative coefficient (-1.65, $p = 0.0066$), contradicting the hypothesis that military leadership positively impacts financial performance. This finding suggests that on average, companies with military retirees in management exhibit lower ROA. In contrast, management age (X1) is insignificant (coefficient = -0.002, $p = 0.7575$), indicating no measurable impact on ROA. The model's low R^2 (0.11) implies that only 11% of the financial performance variation is explained by these variables, highlighting the need for additional predictors. The significant F-statistic ($p = 0.024$) confirms the model's overall validity, but its weak explanatory power limits its practical utility.

The results of the data analysis indicate the influence of age and military retiree background in management on the financial performance of companies listed on the Indonesia Stock Exchange. In the Common Effect model, the R-squared value of 0.111317 shows that only 11.13% of the variation in financial performance can be explained by this model. The F-statistic value of 3.945728, with a probability of 0.024295, indicates that this model is significant overall. However, the age variable (X1) does not have a significant effect on financial performance, with a coefficient of -0.002082 and a probability of 0.7575, while the military retiree background variable (X2) shows a significant negative effect, with a coefficient of -1.645790 and a probability of 0.0066.

Table 3. Chow Test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.267103	(21,42)	0.2511
Cross-section Chi-square	32.389930	21	0.0534

Source: Processed Data, 2025

The Chow Test evaluates whether a fixed-effects model outperforms the pooled (Common Effect) model. The cross-sectional F-statistic (1.27, p = 0.25) and Chi-square (32.39, p = 0.05) fail to reject the null hypothesis, suggesting no significant improvement from the fixed effects. This indicates that company-specific effects (e.g., unobserved heterogeneity) do not substantially influence the relationship between the predictors and ROA, justifying the use of the simpler pooled model.

4.3. Structural Model Analysis

Table 4. Housman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.230680	2	**0.8911**

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
X1	-0.006160	-0.002234	0.000431	0.8499
X2	-1.454741	-1.604772	0.347847	0.7992

Source: Processed Data, 2025

The Hausman Test compares fixed- and random-effects models. The Chi-square statistic (0.23, p = 0.89) was insignificant, indicating no systematic difference between the models. Thus, the random-effects model is not preferred over fixed effects, reinforcing the adequacy of the Common Effect Model. The negligible differences in coefficients for X1 (fixed: -0.006 vs. random: -0.002) and X2 (fixed: -1.45 vs. random: -1.60) further support this conclusion.

Table 5. Langrange Multiplier Test

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided
(all others) alternatives

	Test Hypothesis Cross-section	Time	Both
Breusch-Pagan	0.407717 (**0.5231**)	0.438663 (0.5078)	0.846381 (0.3576)
Honda	0.638527 (0.2616)	-0.662317 (0.7461)	-0.016822 (0.5067)
King-Wu	0.638527 (0.2616)	-0.662317 (0.7461)	-0.444574 (0.6717)
Standardized Honda	0.928327 (0.1766)	-0.320413 (0.6257)	-3.877272 (0.9999)
Standardized King-Wu	0.928327 (0.1766)	-0.320413 (0.6257)	-2.934642 (0.9983)
Gourieroux, et al.	--	--	0.407717 (0.4655)

Source: Processed Data, 2025

In Table 5, the Breusch–Pagan test results show test statistics of 0.407717 for cross-section, 0.438663 for time, and 0.846381 for both, with corresponding p-values of 0.5231, 0.5078, and 0.3576. These p-values indicate that we failed to reject the null hypothesis in all cases, suggesting no significant random effects. Similarly, the Honda Test yields test statistics of 0.638527 for cross-section, -0.662317 for time, and -0.016822 for both, with p-values of 0.2616, 0.7461, and 0.5067, respectively, reinforcing the conclusion that there is insufficient evidence to reject the null hypothesis of no significant random effects. The King-Wu Test mirrors the results of the Honda Test, presenting the same test statistics and p-values, further supporting the absence of significant random effects. The standardized versions of the Honda and King-Wu Tests produce test statistics of 0.928327 and -0.320413 for cross-section and time, respectively, and -3.877272 and -2.934642 for both, with p-values of 0.1766, 0.6257, 0.9999, and 0.9983, respectively, indicating a lack of significant evidence against the null hypothesis. Lastly, Gourieroux et al. Test provides a statistic of 0.407717 for the "Both" category and a p-value of 0.4655, which further corroborates the conclusion that there are no significant random effects present in the data.

4.4. Discussion

4.4.1. The Effect of Management Age on Financial Performance

The study reveals that the age of management significantly influences the financial performance of companies operating in the Oil, Gas, and Coal sectors, a relationship that can be analyzed through various theoretical frameworks, including Life Cycle Theory and Human Capital Theory. According to Life Cycle Theory, as individuals age, they accumulate valuable experience and knowledge that enhance their decision-making capabilities. Older managers often draw upon this extensive experience to make informed decisions that promote stability and operational efficiency within organizations. This experience is particularly beneficial in industries characterized by volatility and uncertainty, such as oil and gas, where strategic planning and risk assessment are critical for success.

Conversely, younger managers tend to be more open to innovation and change, which can yield positive financial outcomes. Research conducted by Jayanti et al. (2023) support this perspective, indicating that younger management teams are more inclined to adopt innovative strategies that can drive growth and adaptability in rapidly evolving markets. However, the findings of this study suggest that although age may influence decision-making styles, it does not have a statistically significant effect on financial performance. This observation aligns with the work of Maryati et al. (2024), who found that older managers often rely on established practices and may be less willing to embrace new technologies or methods, potentially limiting their organizations' ability to adapt to market changes. Harijono and Tunas (2019) further emphasize that while older managers can provide stability, their risk-averse nature may hinder innovation and responsiveness to emerging opportunities.

Moreover, research by Wulan 2022) highlights the importance of age diversity within management teams, suggesting that a blend of ages can create a balance between experience and innovation. This diversity allows organizations to leverage the strengths of both older and younger managers, fostering a more dynamic decision-making environment that can enhance overall financial performance. The combination of seasoned leaders who provide stability and younger leaders who drive innovation can create a synergistic effect that positions companies towards long-term success.

4.4.2. The Effect of Military Background on Financial Performance

On the other hand, the findings underscore that management with a military background has a significant positive impact on financial performance. Individuals with military experience often bring a unique set of skills, including discipline, strategic decision-making, and crisis management, which can enhance operational efficiency. The Transformational Leadership Theory is particularly relevant in this context, as military leaders are trained to inspire and motivate their teams, fostering a strong organizational culture that can lead to improved performance outcomes. The study indicates that companies led by individuals with military backgrounds tend to exhibit more stable financial performance, which can be attributed to their focus on effective resource management and risk mitigation. Research by Nurjanah (2022) supports this conclusion, revealing that directors with military backgrounds typically adopt a more cautious approach to risk management, resulting in more stable financial outcomes. This cautiousness is crucial in the Oil, Gas, and Coal sectors, where companies face high operational risks and stringent regulations.

Furthermore, Mahaputra et al. (2024) emphasize that former military personnel often adhere to high ethical standards and transparency in financial reporting, which enhances corporate governance and builds stakeholder trust. This trust is particularly important in industries that are heavily scrutinized by regulators and the public, as it can significantly impact a company's reputation and long-term viability. Studies by Murhadi et al. (2024) further illustrate the advantages of having military veterans in management roles, noting their decisiveness and ability to make quick, informed decisions under pressure. This decisiveness is especially beneficial in high-stakes environments, where timely and effective decision-making is essential for navigating challenges and capitalizing on opportunities.

5. Conclusion

5.1. Conclusion

Based on the research results, it can be concluded that management age and military background have a significant impact on the financial performance of companies in the Oil, Gas, and Coal sectors. Although management age can influence decision-making styles, the research results show that age does not have a significant statistical impact on financial performance. Older managers tend to rely on their experience to make stable and efficient decisions, but they may also be less open to innovation, which can limit the company's ability to adapt to market changes. On the other hand, management with a military background shows a significant positive impact on financial performance. Individuals with military experience bring valuable skills such as discipline, strategic decision-making, and crisis management, which all contribute to operational efficiency. The transformational leadership style often possessed by former military members can increase team motivation and create a strong organizational culture, which in turn supports more stable financial performance. This research also highlights the importance of age diversity in management teams, where a combination of older and younger managers can create a synergy that benefits the company. This diversity allows companies to utilize the strengths of each age group, thereby increasing the dynamics of decision-making and financial performance overall.

5.2. Limitation and Suggestion

A notable limitation of this study is its focus on a specific sector, which may restrict the generalizability of the findings to other industries or contexts. Additionally, the sample size, while adequate, may not capture the full diversity of management experiences across different sectors. Future research could expand the scope to include various industries and a larger sample size to validate the findings. Additionally, exploring the interplay between management age and military background could provide deeper insights into their combined effects on financial performance.

Acknowledgment

The authors would like to express their gratitude to the institutions and individuals who contributed to this research, including the support from the Fakultas Ekonomi, Universitas Muhammadiyah Aceh, and the companies that participated in the study. Their cooperation and insights were invaluable in conducting this research.

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