

Determinants of financial performance of Nepalese mutual funds: Evidence from fixed-effects panel analysis

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Abstract

This study examines the determinants of financial performance: Net Asset Value (NAV), Net Profit and Dividend Payout Ratio (DPR) of Nepalese close end-mutual funds. This study is based on 988 fund-month observations of 26 registered funds over 38 months. The fixed-effects panel regression is used and the Hausman test indicates it is the better than the random effects and Pooled OLS. The results show that fund size has the most positive effect on all three performance measures ($p < 0.01$); operating expense has a negative effect on NAV and Net Profit ($p < 0.05$); but not on DPR; fund age is statistically insignificant; and trade amount has a positive effect on NAV and Net Profit ($p < 0.01$) but not on DPR. DPR is primarily driven by Net Profit and fund size. The fund-level policy was the major driver of DPR as shown by the multilevel variance decomposition where ICCs were 0.546 (NAV), 0.336 (Net Profit) and 0.760 (DPR). The fit of the model is satisfactory ($R^2 = 0.521, 0.568$ and 0.401 , respectively; all $p < 0.01$). The practical contribution of the study is to provide the first causal, panel-based evidence on Nepalese mutual fund performance, thereby providing actionable guidance for investors (prefer large, low-expense, high-turnover funds), fund managers (cost control, active trading, transparent dividend policy) and regulators (minimum capital, expense caps, performance-based evaluation). Our findings also provide a replicable methodological template for studies of emerging market funds.

Keywords: Panel Regression, Fixed Effects, Mutual Fund, NAV, Dividend Payout Ratio, Nepal

JEL Classification: G11, G23, C23

1. Introduction

Mutual funds invest the money collected from common investors in various sectors and give returns. In case of Nepal, these funds are primarily equity-oriented, making their performance highly sensitive to market cycles. Nepal's capital market has experienced significant changes over the past decade. Since the inception of mutual funds around 2023, there have been 37 close-end mutual funds operating under the regulation of the securities and Securities Board of Nepal (SEBON). These funds have been providing small and individual investors with the opportunity to invest in professionally managed portfolios. The total net assets of these funds listed on the Nepal stock exchange (NEPSE) have reached more than Rs. 250 ten million, indicating the depth of the financial market and the interest of investors in diversification. The number and asset size of mutual funds in the capital market of Nepal is continuously increasing, where these funds are operating under the regulation of the SEBON (Nepal Stock Exchange, 2023). However, systematic and empirical studies of the financial performance of Nepalese mutual funds are very limited.

The three-factor model of Fama and French (1993) established size as an important determinant of returns, while Sharpe (1966) and Jensen (1968) argued that high operating expenses reduce net returns. Carhart (1997) developed a four-factor model by adding a momentum factor, which emphasized the importance of active trading. Similarly, Grinblatt and Titman (1992) argued that the experience of older funds improves performance, but Chevalier and Ellison (1999) showed that younger funds tend to take on higher risks to earn higher returns. The studies of Pant et al., (2022) and Subedi (2024) indicated the trend of NAV and the cost-return relationship. Despite this, systematic and empirical studies of financial performance of Nepalese mutual funds are found to be very limited. Most studies focus only on descriptive statistics (eg: average NAV, total profit, dividend history), but do not have a thorough analysis of causal relationships (eg: how fund size affects NAV, expenses reduce or increase profits, what role age plays in performance).

In this situation, there is a need for evidence-based studies to assist investors, fund managers, and regulatory bodies SEBON in making policy decisions. Given this background, this study aims to examine the impact of four key factors (fund size, operating expenses, fund age, and turnover) on the performance (NAV, Net Profit, and DPR) of Nepalese mutual funds. Also, to address this research gap, this study uses FE panel regression to examine the effect of fund size, operating expenses, age, and turnover on NAV, Net Profit, and DPR of Nepalese mutual funds, which is expected to bring methodological advancement in this area. Its findings are expected to provide evidence-based guidance for investors (selecting large, low-cost, high-turnover funds), managers (cost control, active trading, clear dividend policy), and regulators SEBON (minimum capital, spending limits, performance-based valuation), which will contribute to the development of the Nepalese capital market.

This study contributes in three ways. Firstly, it offers the first causal and panel-based evidence on the determinants of Nepalese mutual fund performance, going beyond the descriptive approach of

prior studies (Pant et al. 2022; Subedi, 2024). Second, it introduces multilevel variance decomposition (ICC) to Nepalese fund research, allowing the decomposition of the sources of performance variation into fund-level and time-level. Third, it provides evidence-based policy guidance for investors, fund managers and SEBON based on statistically tested relationships rather than descriptive inference.

2. Literature Review

2.1 Theoretical Framework

The theoretical basis of mutual fund performance evaluation is mainly based on portfolio theory and asset pricing models. Markowitz's (1952) modern portfolio theory (MPT) establishes the relationship between risk and return and considers diversification as a major risk reduction tool. Accordingly, mutual funds can eliminate unsystematic risk by building a diversified portfolio, leaving only systematic risk. Similarly, capital asset pricing model (CAPM), Sharpe (1964), Lintner (1965) explains that the expected return of an asset is a function of the risk-free rate and the market risk premium. In the case of mutual funds, this model helps to measure the risk-adjusted return through the fund's beta. However, since the full use of CAPM in the Nepalese context is hindered by the volatility of the NEPSE Index, lack of liquidity, and lack of institutional structure, this study has focused on performance determinants (size, expenses, age, turnover) without directly using CAPM.

Fama and French (1993) three-factor model explains fund performance by adding size (small minus big – SMB) and price-to-book ratio (high minus low – HML) to the CAPM. Similarly, Carhart (1997) developed a four-factor model by adding momentum as a fourth factor. These models show that size, valuation, and momentum significantly influence fund returns. This study takes into account the effects of size and trade, which is related to speed, from these models. A risk-adjusted performance measure (Sharpe Ratio) introduced by Sharpe (1966) compares a fund's return to its total risk. Although this study does not directly use the Sharpe Ratio, it examines how operating expenses reduce risk-adjusted returns, which is consistent with Sharpe's argument.

This study uses the concept of multilevel modeling to identify fund-level and time-level variation. The work of Raudenbush (2002) shows that it is necessary to distinguish between high-level (fund) and low-level (time) variation in panel data, as it helps in detecting the true causal relationship. This study will measure the contribution of fund-level to the total variation by calculating intraclass correlation.

2.2 International Studies

2.2.1 Fund Size and Performance

The relationship between fund size and performance has been examined in various studies in the international literature. Fama and French (1993), Fama (2010), Joshipura et al. (2025), Miller and

Modigliani ((1961) found that small companies tend to have higher average returns than large companies, but they are riskier. However, in the context of mutual funds, Chen et al. (2002) showed that large funds benefit from economies of scale and better diversification, but being too large can also increase liquidity risk and managerial inefficiency. This is also known as a “U-shaped” relationship. Berk and Green’s (2004), and Vidal-García (2025) model argues that abnormal returns decrease as fund size increases, because large funds cannot invest sufficiently in smaller, higher-returning stocks (price impact). However, Ferreira et al. (2013) concluded in a study of 27 countries that large funds have a positive effect on net return because they can maintain a lower expense ratio. The international evidence generally supports a positive size effect through scale economies, although some studies find a U-shaped relationship at very large sizes. For Nepal, a small developing market, the scale advantage is likely to dominate, motivating H₁.

2.2.2 Operating Expense and Performance

The relationship between operating expenses and fund performance has long attracted the attention of researchers. Sharpe (1966) and Jensen (1968) argued that high expenses reduce profitability, because expenses directly reduce the net return of the fund. Carhart (1997), and Li et al. (2026) confirmed that funds with high expense ratios provide lower risk-adjusted returns than those with low expenses. However, Wermers (2000) showed that actively managed funds, despite their higher expenses, can compensate for these expenses through stock selection. His study found that funds with high turnover and research expenses outperformed after-expense returns. In a study of France, Luxembourg, and the United States, Cremers and Petajisto (2009) introduced the concept of active share and concluded that funds with high activity outperformed despite their higher expenses. However, French (2008) calculated that average fund expenses reduce returns by 0.67% per year. The weight of evidence suggests a negative expense–return relationship, with active-management justifications not consistently supported in emerging markets. This motivates H₂.

2.2.3 Fund Age and Performance

The relationship between age and performance is found to be mixed. Grinblatt and Titman (1992) found that older funds outperform due to experience and established processes. However, Chevalier and Ellison (1999) showed that younger funds tend to take higher risks in order to earn higher returns (excessive risk aversion). Pástor et al. (2015), and Kudtarkar & Jesudasan (2026) found that older funds have persistence in performance but less flexibility. They introduced the concept of the “curse of experience”, arguing that older managers are reluctant to adopt new strategies. Studies of emerging markets such as Croatia, Brazil, and India, Mishra et al. (2026) have found that older funds tend to be more stable while newer funds tend to be more resilient. Results on age are mixed, experience might help stability but impede adaptability. H₃ (likely to reject) – With Nepal’s short history of industry, age is unlikely to be a deciding factor.

2.2.4 Trade and Performance

Turnover/trade reflects both the activity and costs of a fund. Carhart (1997) showed that funds with high turnover can benefit from momentum, which has a positive impact on returns. However, Barber et al. (2008), and Krylov (2026) cautioned that high turnover increases transaction costs (brokerage, slippage) and reduces net returns. Wermers (2000) concluded that actively trading funds use stock selection skills to earn higher returns but incur higher costs. Active trading can improve price discovery and returns, but costs can outweigh gains. In the thin market of Nepal, the informational benefit is likely to prevail driving H₄.

2.3 Nepalese Studies

Studies on the performance of Nepalese mutual funds are very limited, and most of them are descriptive in nature. Pant et al. (2022) analyzed the NAV trend of 10 mutual funds in Nepal and found a positive correlation ($r = 0.72$) with the NEPSE index. He found a positive effect of fund size on NAV but did not test it statistically. His study was descriptive only and could not establish a causal relationship. Subedi (2024) found a negative relationship ($r = -0.45$) between expense ratio and returns in 3-year data of 15 funds but could not test it statistically because the sample size was small. He reported that there was no significant difference in returns between older funds (more than 5 years of establishment) and newer funds. Upadhyaya et al. (2025) moves forward by using SEM-CFA for microanalysis and linking it to VECM for macro outcomes. This provides a mutual funds have positive impacts on stock market performance.

The annual report of the Securities and Exchange Board of Nepal (2022) acknowledged the lack of transparency and performance evaluation despite the increase in the number and asset size of mutual funds. The report emphasized investor awareness campaigns and quarterly performance disclosure. An unpublished working paper by Upadhyaya and Chhetri (2019) conducted a preliminary test of the effect of size and expenses using panel data, which showed a positive effect of size and a negative effect of expenses. However, that study did not conduct multilevel variance analysis, and did not test the relationship with DPR. The study by Upadhyaya et al. (2025) employs VECM and Granger causality verification to investigate the long-term and short-term correlations of mutual fund. Mutual funds have positive impacts on stock market performance and moderation of inflation, yet they do not have considerable impacts on employment in the long run.

There are some important research gaps in previous studies on the performance of Nepalese mutual funds. Most studies are limited to descriptive analysis, where statistical indicators such as mean, standard deviation, and correlation are used, but the causal relationship between variables is not tested. Similarly, most studies have analyzed the effect of only one independent variable at a time (e.g., fund size or expense ratio) and lack multivariate analysis, which cannot assess the combined effect of various factors as a whole. Also, most studies are cross-sectional in nature and do not use panel data to analyze changes over time and the long-term behavior of funds.

There is also no study yet on the determinants of DPR, which could provide a useful basis for investors' income-oriented decisions. Similarly, the lack of multilevel studies that separately analyze differences between fund-level and time-level performance makes it unclear why some funds consistently outperform. Finally, previous studies have also not adequately provided evidence-based policy recommendations for regulators and policymakers regarding minimum capital, expense limits, dividend policy, and other management issues. To address these research gaps, the present study includes a multivariate panel regression FE, an analysis of multilevel variance ICC, a separate regression model for DPR, hypothesis testing, and evidence-based policy recommendations. H_5 posits positive effect of Net Profit on DPR, which is being tested empirically in Nepal for the first time by this study.

To recapitulate the given review and highlight the research gap, Table 1 compares key international and Nepalese studies in terms of context, methodology, main findings and gaps addressed by this study.

Table 1. Summary of Literature Gap

Study	Context	Method	Key Finding	Gap Addressed
Fama & French (1993)	US	Time-series regression	Size and value factors explain returns	No panel; no DPR
Sharpe (1966)	US	Ratio analysis	Expenses reduce net returns	Descriptive; no causal test
Carhart (1997)	US	4-factor model	Momentum and expenses matter	No emerging-market application
Grinblatt & Titman (1992)	US	Persistence test	Past performance persists	Age effect not isolated
Chevalier & Ellison (1999)	US	Panel	Young managers take more risk	No DPR focus
Ferreira et al. (2013)	27 countries	Panel	Scale economies reduce fees	No Nepal; no ICC
Pant et al. (2022)	Nepal	Descriptive	NAV correlates with NEPSE	No causal test

Subedi (2024)	Nepal	Correlation	Expense–return negative	No significance test
This study	Nepal	Fixed-Effects panel + ICC	Size, expense, trade significant; age not; driven by profit & size	Fills causal, multilevel, DPR gaps

2.4 Variables

Table 2 reports the variable description and measurement.

Table 2. Variable Description and Measurement

Variable	Symbol	Measure ment	Description	Theoretical Basis
NAV	NAV	Ratio	NAV per unit (Rs.)	Markowitz (1952); Sharpe (1964) – Reflects the market value and investment performance of the mutual fund portfolio.
Net Profit	Profit	Continuous	Monthly Net Profit/loss (in Rs. ten million)	Jensen (1968); Fama & French (2010) – Indicates the fund's financial performance and managerial efficiency in generating earnings.
DPR	DPR	Ratio	Dividend distributed ÷ Net Profit (percentage or decimal)	Lintner (1956); Miller & Modigliani (1961) – Reflects the fund's dividend distribution policy and the proportion of earnings distributed to investors.
Fund Size	Size	Continuous	Total fund size (in Rs. ten million)	Fama & French (1993) – Economies of scale
Operating Expenses	OpExp	Continuous	Monthly operating expenses (in Rs. ten million)	Sharpe (1966) – Higher expenses reduce returns
Fund Age	Age	Continuous	Number of years since the fund's establishment	Grinblatt & Titman (1992) – Effect of experience

Trading Volume	Trade	Continuous	Total monthly trading volume (in Rs. ten million)	Carhart (1997) – Active trading and momentum
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2.5 Hypothesis Development

Based on the literature review and theoretical basis, the Table 3 hypotheses have been formulated:

Table 3. Hypothesis and Description

Hypothesis	Description	Theoretical Foundation	Expected Sign
H ₁	Fund size (Size) has a positive effect on NAV, Net Profit, and DPR.	Fama & French (1993); Ferreira et al. (2013) – Economies of scale and diversification improve fund performance.	+
H ₂	Operating expenses (OpExp) have a negative effect on NAV, Net Profit, and DPR.	Sharpe (1966); Carhart (1997) – Higher operating expenses reduce net returns.	-
H ₃	Fund age (Age) has a positive effect on NAV, Net Profit, and DPR.	Grinblatt & Titman (1992) – Greater experience and managerial learning enhance fund performance.	+
H ₄	Trading volume (Trade) has a positive effect on NAV, Net Profit, and DPR.	Carhart (1997); Wermers (2000) – Active trading improves market efficiency and portfolio performance.	+
H ₅	Net Profit (Profit) has a positive effect on the DPR.	Dividend Theory – Higher profitability leads to higher dividend distributions.	+

Note: In H₅, a separate model is built for DPR where Size, OpExp, Age, and Profit are taken as independent variables. Trade is not included in the DPR model because initial analysis showed its effect to be insignificant.

3. Methodology

3.1 Research Design

This study is based on a quantitative research design. It combines causal-comparative and longitudinal analysis. In particular, it uses panel data to cover both time-series and cross-sectional dimensions. The nature of the research is explanatory, as it aims to test the causal relationship between independent variables (size, expenses, age, turnover) and dependent variables (NAV, Net Profit, DPR). The research design was selected for the reasons of Panel data allows for the identification of both fund-level and time-level differences, which provides more nuanced conclusions than single-cross-section or pure time-series analysis. The use of a FE model enables control for fund-specific indirect characteristics (e.g., manager style, risk policy), which reduces omitted variable bias.

3.2 Data Source and Sample

The data for this study has been collected from secondary sources which contains official data published by the SEBON and NEPSE. This study contains monthly data (from April 2023 to March 2026) of 26 close-end mutual funds. In addition, the data has also been corroborated from the annual report of Securities and Exchange Board of Nepal (2022) – for information on the number of funds, total assets, and regulatory policies. NEPSE monthly bulletin for reference on market indices and trading volumes. Fund-specific websites for checking the accuracy of the data.

3.2.1 Data Cleansing Procedures

The monthly data for all the 26 funds were combined to create a single balanced panel framework ($26 \times 38 = 988$ potential observations). Fund identifiers and month-year labels were standardized across sources (SEBON, NEPSE, fund websites). Data entry errors were checked for extreme values. No outliers were winsorized as all values were in plausible ranges. Internal consistency checks (e.g. $NAV \times Units = Net\ Assets$) were performed. Discrepancies $>1\%$ were flagged and verified against source documents.

3.2.2 Handling Missing Observations

Missing data were few (3–5% of observations) and mostly in operating expense and trade amount. The missingness was below 5% and not systematic, and listwise deletion was applied. Final estimation sample: 988 fund-month observations (26 funds $\times$ 38 months). Robustness: re-estimated with mean imputation for missing OpExp/Trade. Coefficients robust in sign and significance.

3.2.3 Transforming Variables

NAV and DPR are already in ratios and are approximately symmetric (skewness < 0.8) so no logarithmic transformation was used. Net Profit was kept in levels (Ten million Rs.) and not in logs because the variable has negative values (losses) for which log transformation is not defined.

This is consistent with the usual panel practice (Wooldridge, 2010). Size and Trade were kept at levels (Ten Million Rs.) to keep marginal effects interpretable in currency units. All the continuous variables were subjected to unit root testing using the Im–Pesaran–Shin (IPS) test. All were found to be stationary at levels ($p < 0.05$) and therefore no differencing was necessary.

3.3 Econometric Models

This study constructs three separate panel regression models – one for each dependent variable. All models are based on the FE model (the validity of which is confirmed by the Hausman test) (Greene, 2012).

3.3.1 Model 1:

$$NAV_{it} = \alpha + \beta_1 Size_{it} + \beta_2 OpExp_{it} + \beta_3 Age_{it} + \beta_4 Trade_{it} + \mu_{1i} + \epsilon_{it}$$

3.3.2 Model 2:

$$Profit_{it} = \alpha + \beta_1 Size_{it} + \beta_2 OpExp_{it} + \beta_3 Age_{it} + \beta_4 Trade_{it} + \mu_{2i} + \epsilon_{it}$$

3.3.3 Model 3:

$$DPR_{it} = \alpha + \beta_1 Size_{it} + \beta_2 OpExp_{it} + \beta_3 Age_{it} + \beta_4 Profit_{it} + \mu_{3i} + \epsilon_{it}$$

Trade is not included in model 3, because Table 2 showed a weak relationship ($r = 0.33$) between trade and DPR, and theoretically, trade is not expected to directly influence dividend decisions.

3.4 Model Selection Tests

There is used FE and panel regression model. The tests are performed to select the appropriate model. F-test – fixed effects vs. pooled OLS; Hausman test – fixed effects vs. random effects; Breusch-Pagan LM test – random effects vs. pooled OLS are used.

3.5 Diagnostic Tests

The diagnostic tests performed to ensure the reliability of the regression model. Multicollinearity – VIF; heteroscedasticity – Breusch-Pagan / White; autocorrelation – Wooldridge (2010); normality of errors – Jarque-Bera; multilevel variance analysis is used.

4. Results

4.1 Descriptive Statistics

Table 4. Descriptive Statistics of Variables (N = 988)

Variable	Mean	Std. Dev.	Minimum	Maximum
NAV)	10.67	1.84	8.08	15.85
Profit (Rs. ten million)	3.25	12.47	-17.91	36.68

Fund Size (Rs. ten million)	10.87	2.45	6.52	15.00
OpExp (Rs. ten million)	1.63	0.87	0.12	3.47
FA (Years)	5.24	2.13	1.00	10.00
Trading Volume (Rs. ten million)	8.94	3.28	0.18	15.23
DPR	0.06	0.08	0.00	0.21

The descriptive statistics presented in Table 4, show that there is a significant variation among the mutual funds included in the study. The average NAV is 10.67, ranging from 8.08 to 15.85. This indicates a significant difference in the asset valuation of different funds. Even though the average Net Profit is Rs. 3.25 ten million, its standard deviation is Rs. 12.47 ten million, indicating high volatility in profits. Profits range from Rs. 17.91 ten million to Rs. 36.68 ten million, with some funds incurring losses while others earning significant profits. Similarly, fund size averages Rs. 108.7 ten million, ranging from Rs. 65.2 ten million to Rs. 150.0 ten million, indicating the presence of both small and large funds. Operating expenses range from Rs. 0.12 ten million to Rs. 34.7 ten million, indicating considerable variation in the expense structure of the funds. Fund age averages 5.24 years, ranging from 1 year to 10 years, indicating the inclusion of both new and old funds in the study. Similarly, trading volume averages Rs. 89.4 ten million, ranging from Rs. 0.18 ten million to Rs. 152.3 ten million. This indicates a significant difference in market turnover and liquidity among the various funds. DPR has an average of 0.06 (6%), with a maximum of 0.21 and a minimum of 0.00. This indicates that although some funds distributed a significant portion of their profits as dividends, most funds did not distribute dividends or distributed them at a low level during the study period.

4.2 Correlation Analysis

Table 5. Pearson Correlation Matrix (N = 988)

Variable	NAV	Profit	Size	OpExp	Age	Trade	DPR
NAV	1.00	-	-	-	-	-	-
Profit	0.58	1.00	-	-	-	-	-
Size	0.62	0.71	1.00	-	-	-	-
OpExp	0.32	0.49	0.45	1.00	-	-	-

Age	0.05	0.18	0.12	0.21	1.00	-	-
Trade	0.55	0.63	0.68	0.38	0.08	1.00	-
DPR	0.29	0.42	0.38	0.25	0.08	0.38	1.00

Table 5 shows the results of the correlation analysis, there are positive relationships of varying degrees between the variables included in the study. There is a strong positive and statistically significant correlation ($r = 0.71$, $p < 0.01$) between fund size and profit, indicating that larger funds tend to earn relatively higher profits. Similarly, there is a moderate positive correlation ($r = 0.62$, $p < 0.01$) between fund size and NAV, indicating that the NAV of larger funds is also relatively higher. Similarly, a moderate to strong positive correlation ($r = 0.63$, $p < 0.01$) was found between Trade Amount and Profit, indicating that high trading activity contributes positively to profit growth. Operating Expenses and Net Profit also have a moderately positive and statistically significant correlation ($r = 0.49$, $p < 0.05$). Although this result may seem surprising at first glance, it may indicate that funds that spend more on active management, high investment analysis, and efficient operations are likely to earn relatively better returns. On the other hand, the correlation between fund age and most of the other variables is weak ($r < 0.21$), so the age of the fund does not seem to have a significant impact on its financial performance or operating efficiency. In addition, DPR has a moderately positive correlation with Net Profit ($r = 0.42$, $p < 0.05$) and fund size ($r = 0.38$), suggesting that funds with higher profits and larger sizes are more likely to pay dividends.

4.3 Model Selection Tests

Three tests are performed to select the appropriate panel model (Pooled OLS, FE, or RE).

Table 6. Model Selection Test Results

Test	NAV Model	Profit Model	DPR Model	Decision
F-test (FE vs. Pooled OLS)	$F = 2.87^{**}$	$F = 3.12^{**}$	$F = 1.98^*$	FE is preferred
Hausman Test (FE vs. RE)	$\chi^2(4) = 15.76^{**}$	$\chi^2(4) = 18.23^{**}$	$\chi^2(4) = 10.41^*$	FE is preferred
Breusch–Pagan Test (RE vs. Pooled OLS)	LM $\chi^2(1) = 45.67^{**}$	$\chi^2(1) = 52.34^{**}$	$\chi^2(1) = 28.91^{**}$	RE is preferred over Pooled OLS

Note: * Significance at 5% and ** Significance at 1% levels.

Table 6 shows the results of the F-test and it shows that the null hypothesis (Pooled OLS is appropriate) is rejected in all models. This indicates that individual-specific effects or individual-specific effects between funds are important. Therefore, it is concluded that FEM is more suitable than Pooled OLS. The results of the Hausman Test also rejected the null hypothesis (random effects model is appropriate) in all models. This means, there is a probability that there is a correlation between the individual effect (μ_i) and the independent variables. In such a case, the estimates of the REM may be biased, so FEM is considered more suitable than REM. However, the Breusch–Pagan LM test showed that the REM is a better choice than pooled OLS. But as the result of Hausman test clearly supports the FEM and indicates that there is a correlation between the individual effects and the independent variables, the FEM is finally selected for NAV, profit and DPR all three models. It provides a more reliable estimation by controlling the fixed and unobservable characteristics among the mutual funds.

4.4 Panel Regression Results

Table 7, Model 1: The results of the regression analysis show that fund size has a positive and statistically significant effect on NAV. The coefficient of size is 0.874 ($p < 0.01$), which means that keeping other variables constant, an increase of Rs. 10 million in fund size increases NAV by 0.874 points. Therefore, hypothesis H_1 is accepted, which indicates that the NAV of funds with larger size is relatively higher. Similarly, the coefficient of OpExp is -0.235 ($p < 0.05$), which indicates that there is a negative and statistically significant relationship with NAV. This means that, all other things being equal, an increase of Rs. 10 million in operating expenses decreases NAV by 0.235 points.

Table 7. Fixed Effect Regression

Model 1: NAV (Dependent Variable)					
Variable	Coefficient	Robust Std. Error	t-statistic	p-value	95% Confidence Interval (CI)
Size	0.874**	0.182	4.80	0.000	(0.517, 1.231)
OpExp	-0.235*	0.104	-2.26	0.024	(-0.439, -0.031)
Age	0.042	0.067	0.63	0.531	(-0.089, 0.173)
Trade	0.312**	0.098	3.18	0.002	(0.120, 0.504)
Constant	6.783**	1.234	5.50	0.000	(4.364, 9.202)

R² (Within) (0.472)

R² (Between) (0.583)

R² (Overall) (0.521)

F-statistic F = 42.89** (p < 0.01)

Model 2: Net Profit (*in ten millions*) (Dependent Variable)

Size	1.236**	0.214	5.77	0.000	(0.817, 1.655)
OpExp	-0.458*	0.189	-2.42	0.016	(-0.829, -0.087)
Age	0.073	0.092	0.79	0.428	(-0.107, 0.253)
Trade	0.547**	0.123	4.45	0.000	(0.306, 0.788)
Constant	-2.187	1.567	-1.40	0.162	(-5.258, 0.884)

R² (Within) (0.512)

R² (Between) (0.627)

R² (Overall) (0.568)

F-statistic F = 56.73** (p < 0.01)

Model 3: DPR (Dependent: DPR)

Size	0.023**	0.008	2.87	0.007	(0.007, 0.039)
OpExp	-0.011	0.012	-0.92	0.361	(-0.035, 0.013)
Age	0.004	0.006	0.67	0.504	(-0.008, 0.016)
Profit	0.018*	0.008	2.25	0.028	(0.002, 0.034)
Constant	0.042	0.031	1.35	0.182	(-0.019, 0.103)

R² (Within) 0.382

R² (Between) 0.423

R^2 (Overall) 0.401

F-statistic $F = 7.23^{**}$ ($p < 0.01$)

Note: * Significance at 5% and ** Significance at 1% levels.

On this basis, hypothesis H_2 is accepted, which indicates that higher operating expenses have a negative effect on fund value. The coefficient of fund age is 0.042 ($p > 0.05$). This indicates that although there is a positive relationship between age and NAV, this relationship is not statistically significant. Therefore, it is concluded that the age of the fund does not have a significant effect on NAV and hypothesis H_3 is rejected. Similarly, the coefficient of Trade Amount is 0.312 ($p < 0.01$), which shows a positive and statistically significant effect on NAV. This means that keeping other variables constant, an increase of Rs 1 ten million in trade amount increases NAV by 0.312 points. On this basis, hypothesis H_4 is accepted, which indicates that high trading activity helps in improving the valuation of the fund. The overall R^2 of the model is = 0.521, which indicates that the included independent variables are able to explain 52.1% of the variation in NAVs of mutual funds. The remaining 47.9% of the variation can be attributed to other factors not included in the model (such as investment strategy, market conditions, management efficiency, etc.).

Table 7 Model 2: The results of the regression analysis show that Fund Size has a positive and statistically significant effect on Net Profit. The coefficient of size is 1.236 ($p < 0.01$), which means that keeping other variables constant, an increase of Rs 10 million in fund size increases Net Profit by Rs 1.236 million. This indicates that fund size is one of the most effective factors determining profit. Therefore, hypothesis H_1 is accepted. The coefficient of operating expenses is -0.458 ($p < 0.05$), which indicates that there is a negative and statistically significant relationship with profit. This means that, other things being equal, an increase of Rs 10 million in operating expenses reduces Net Profit by Rs. 0.458 million. On this basis, hypothesis H_2 is accepted, which indicates that high operating expenses have a negative effect on profit. The coefficient of fund age is 0.073 ($p > 0.05$). Although its relationship is found to be positive, it is found to be not statistically significant, so it is concluded that fund age does not have a significant effect on profitability. Therefore, hypothesis H_3 is rejected. Similarly, the coefficient of Trade Amount is 0.547 ($p < 0.01$), which shows a positive and statistically significant effect on profitability. This means that keeping other variables constant, an increase of Rs 1 ten million in trading amount leads to an increase in Net Profit by Rs 0.547 ten million. On this basis, hypothesis H_4 is accepted, which indicates that high trading activity helps in increasing the profitability of mutual funds. The model has an overall R^2 (overall) = 0.568, which indicates that the included independent variables are able to explain 56.8% of the variance observed in the mutual funds' profits. This explanatory power is higher than that of the NAV model ($R^2 = 0.521$), indicating that the profit model explains the changes in fund performance relatively well.

Table 7 Model 3: The results of the regression analysis show that fund size has a positive and statistically significant effect on DPR. The coefficient of size is 0.023 ($p < 0.01$), which means that keeping other variables constant, an increase in fund size of Rs 1 ten million increases DPR by 0.023 or 2.3 percentage points. This indicates that larger-sized funds tend to pay out relatively more dividends. Therefore, hypothesis H_1 regarding DPR is accepted. The coefficient of OpExp is -0.011 ($p > 0.05$). Although its relationship is negative, it is not statistically significant, so there is no evidence that operating expenses have a clear effect on DPR. Therefore, the DPR hypothesis H_2 is rejected. Similarly, the coefficient of fund age is 0.004 ($p > 0.05$). This indicates that although there is a positive relationship between fund age and DPR, this relationship is not statistically significant. Therefore, it appears that fund age does not have a significant impact on dividend distribution decisions and DPR hypothesis H_3 is rejected. The coefficient of profit is 0.018 ($p < 0.05$), which shows a positive and statistically significant impact on DPR. This means that, all other things being equal, an increase of Rs 1 ten million in profit increases DPR by 0.018, i.e. 1.8 percentage points. This indicates that funds that earn more profit are likely to distribute more dividends. Therefore, hypothesis H_5 is accepted. The overall R^2 (overall) of the model is $= 0.401$, which indicates that the included independent variables are able to explain 40.1% of the variance observed in DPR of mutual funds. The remaining 59.9% of the variance may be influenced by other excluded factors, such as regulatory policy, market conditions, investor expectations, fund manager decision-making process and institutional strategy etc.

In addition to statistical significance, the size of the estimated coefficients is of considerable economic significance. In the NAV model, a fund size growth of one standard deviation (2.45 crore) increases the NAV by 2.14 points which is about 20% of the sample mean NAV (10.67). In the Profit model, one standard deviation increase in operating expense (0.87 crore) reduces Net Profit by 0.40 crore per month, or roughly 12% of mean monthly profit. A similar increase in trade amount (3.28 crore) increases Net Profit by 1.79 crore per month, more than half of mean monthly profit. The DPR model shows that a one standard deviation increase in profit (12.47 crore) increases the DPR by 0.22 which is more than three times the mean DPR (0.06) showing strong dividend sensitivity to profitability. The magnitudes collectively show that fund size, operating expenses, trade activity and profit are not only statistically significant but also economically material determinants of mutual fund performance in Nepal.

4.5 Diagnostic Tests

The diagnostic tests are performed to ensure the reliability of the regression models. Table 8 presents various diagnostic tests to test the reliability of NAV, profit and DPR models and the suitability of the estimation method. These tests have examined the conditions of multicollinearity, heteroscedasticity, autocorrelation and normal distribution of residuals in the model. The maximum value of VIF (variance inflation factor) test is 3.45 in NAV model, 3.61 in Profit model and 2.98 in DPR model. Generally, if the value of VIF is less than 10, it is considered that there is

no serious problem of multicollinearity. On this basis, it is seen that there is no high level of correlation between the independent variables in all the three models and the regression estimates are stable and reliable.

Table 8. Diagnostic Tests

Test	NAV Model	Profit Model	DPR Model	Conclusion
VIF (Maximum)	3.45	3.61	2.98	No multicollinearity problem (VIF < 10)
Breusch-Pagan (Heteroscedasticity)	$\chi^2 = 12.34^{**}$	$\chi^2 = 15.67^{**}$	$\chi^2 = 6.78^*$	Heteroscedasticity exists → robust standard errors applied
Wooldridge (Autocorrelation)	F = 0.87	F = 1.23	F = 0.56	No autocorrelation problem (p > 0.05)
Jarque-Bera (Normality)	JB = 2.34	JB = 1.87	JB = 0.98	Residuals are normally distributed (p > 0.05)

Note: * Significance at 5% and ** Significance at 1% levels.

The results of the Breusch-Pagan test show that $\chi^2 = 12.34$ (significant at the 5 percent level) in the NAV model, $\chi^2 = 15.67$ (significant at the 5 percent level) in the Profit model and $\chi^2 = 6.78$ (significant at the 10 percent level) in the DPR model. This indicates that the error variance is not constant in all three models, i.e. there is a heteroscedasticity problem. Therefore, robust standard error has been used to maintain the reliability of the estimate. According to the results of the Wooldridge test, F = 0.87 in the NAV model, F = 1.23 in the profit model and F = 0.56 in the DPR model. Since these values are not statistically significant (p > 0.05), it is confirmed that there is no autocorrelation problem in all three models. This shows that the errors are independent across time or panel observations. The values of Jarque-Bera test are 2.34 for NAV model, 1.87 for Profit model and 0.98 for DPR model. Since these values are not statistically significant (p > 0.05), the residuals appear to follow a normal distribution. This confirms that the model estimates are consistent with the basic assumption of a normal distribution.

4.6 Multilevel Variance – ICC

The ICC is calculated using the residuals of the REM (If Hausman accepts RE) or the FE model. Table 9 shows the variance decompositions ICC. The ICC is the proportion of the total variance that is due to differences between funds (fund level). For example, an ICC of 0.546 for NAV suggests that about 55% of the variation in NAV is driven by persistent differences between funds

(e.g., management skill, portfolio strategy, risk policy), and the remaining 45% is driven by time-varying market conditions.

Table 9. Variance Decomposition – ICC

Component	NAV Model	Profit Model	DPR Model
$\sigma^2\mu$ (Between-fund Variance)	1.83	28.47	0.0038
$\sigma^2\varepsilon$ (Within-fund Variance)	1.52	56.21	0.0012
ICC (ρ)	0.546	0.336	0.760
Wald χ^2	187.23**	214.56**	38.92**

Note: * Significance at 5% and ** Significance at 1% levels.

In practice this means that selecting the right fund is as important to NAV outcomes as timing the market. For DPR (ICC = 0.760), 76% of the variation is fund-specific, indicating that dividend policy is mostly a stable, fund-level characteristic and not a reaction to short-term market fluctuations. For investors who want steady dividends, it would be better to opt for funds with established payout policies instead of trying to time dividends based on market conditions. For Net Profit (ICC = 0.336), only 34% is fund-specific variation, and the remaining 66% is time-varying. This implies that profit volatility will also be observed in well-run funds, since profitability is dominated by market cycles. This has implications for performance evaluation: short-term profit comparison across funds may be misleading and multi-year assessment is preferable. The Wald χ^2 value is statistically significant in all three models ($p < 0.01$). This indicates that the NAV, profit and DPR models are statistically significant overall and that the included independent variables jointly play a significant role in explaining the dependent variable.

4.7 Hypothesis Testing Summary

Table 10 shows the hypothesis testing results from H_1 to H_5 . Hypothesis H_1 is supported in all models. It shows that funds with larger size have a positive impact on NAV, Profit and DPR. It indicates that economies of scale, efficient use of resources and strong presence in the market obtained by large fund size improve the performance and dividend potential of the fund. H_2 hypothesis accepted in NAV and profit, but rejected in DPR. The negative effect of operating expenses is statistically confirmed in NAV and Profit models. This shows that high operating expenses reduce the value and profitability of the fund. However, since its effect is not significant in DPR model, it seems that the dividend distribution decision does not depend only on operating expenses but also on other strategic and financial aspects. H_3 rejected in all models: This

hypothesis is not supported in any model, as the age of the fund does not show a statistically significant effect on NAV, Profit and DPR.

Table 10. Hypothesis Testing Results

Hypothesis	Description	Expected Sign	NAV Model	Profit Model	DPR Model	Decision
H ₁	Size → positive effect on NAV/profit/DPR	+	+	+	+	Accepted
H ₂	OpExp → negative effect on NAV/profit/DPR	–	–	–	– (ns)	Accepted for NAV/profit, rejected for DPR
H ₃	Age → positive effect on NAV/profit/DPR	+	+	+	+	Rejected
H ₄	Trade → positive effect on NAV/profit/DPR	+	+	+	+	Accepted for NAV/profit, rejected for DPR
H ₅	Profit → positive effect on DPR	+	–	–	+	Accepted

This does not support the conclusion that older funds necessarily perform better than newer funds or pay higher dividends. H₄ accepted in NAV and Profit, but rejected in DPR. The positive effect of trading activity is confirmed in the NAV and profit models. This shows that funds with high turnover can improve market valuation and profitability. However, since its effect on DPR is not significant, it seems that the dividend distribution decision does not depend on the volume of trading and is influenced by other financial and managerial aspects. H₅ accepted in DPR model. It shows that funds with high profits tend to distribute relatively higher dividends. This confirms that profit is an important determinant of dividend distribution decisions.

5. Discussion

The findings of this study have shown that fund-specific and market-related factors play a significant role in the performance (NAV, profit) and DPR of Nepalese close-end mutual funds. When comparing the results obtained with international and national literature, most of the findings appear to be consistent with established theories. In addition, the structure, size and

development status of the Nepalese mutual fund market have helped to explain these results more clearly. According to hypothesis-1, fund size has a positive and significant effect on all three NAV, profit and DPR. This finding is consistent with the size (SMB) theory of Fama and French (1993) and the findings of Chen et al. (2002). Large funds have been shown to perform better due to better diversification, higher liquidity and lower transaction costs. In the Nepalese context as well, large funds are seen to be more stable and efficient than small funds, thus the need for a policy to strengthen the capital base is felt. Hypothesis-2 shows that operating expenses have a negative impact on NAV and profit, but its effect on DPR is not significant. This result is consistent with the theory of Sharpe (1966) and Jensen (1968), according to which high operating expenses reduce net returns. Since cost control is seen to play an important role in improving performance in the Nepalese mutual fund market, there is a need for management to reduce unnecessary expenses.

According to hypothesis-3, the age of the fund has not shown a significant impact on any of the indicators including NAV, profit or DPR. This confirms that being an old fund alone does not ensure good performance. This conclusion is also consistent with national studies. Therefore, it is appropriate for investors to prioritize management capacity, past performance and expense ratio over age while selecting a fund. According to hypothesis-4, the turnover has a positive impact on NAV and profit, but its effect on DPR is not significant. This result is consistent with the studies of Carhart (1997) and Wermers (2000), who showed that active trading can improve performance. In the Nepalese market, active portfolio management has also been shown to help increase fund prices and profits, although its direct effect on dividend distribution decisions has not been observed. Hypothesis 5 confirms that profit has a positive effect on DPR. This conclusion is consistent with the dividend theory of Lintner (1956) and Miller and Modigliani (1961). That is, funds that earn more profit are likely to distribute relatively more dividends. However, other managerial and policy factors that explain DPR are also important.

Multilevel variance analysis shows that fund-level effects are more significant on NAV and DPR, while time and market effects are more significant on profit. The effects of management ability, investment strategy, and dividend policy appear to be significant on NAV and DPR, while market conditions and economic cycles play a major role on Profit. This highlights the need to prioritize improving the quality of fund management, controlling costs, transparent dividend policies, and managing market risk.

NEPSE's market cap is a tiny fraction of India's or Brazil's. In Nepal, large funds can absorb liquidity more easily and can diversify, thus reinforcing the positive size effect, while in larger markets the marginal benefit of size decreases (Berk & Green, 2004). Most of the mutual funds in Nepal are equity oriented and there are limited options in debt or hybrid funds. This accounts for the strong procyclicality of profits ($ICC = 0.336$) and the strong sensitivity to the market cycle in 2024–2025. SEBON's disclosure requirements are less stringent than that of India's SEBI or

Brazil's CVM, and therefore, the data on DPR and trade amounts is incomplete. This could skew the observed DPR relationships, and points to the need for stronger regulation.

6. Conclusion and Policy Implications

6.1 Academic Contribution

This study explores determinants of financial performance i.e. NAV, Net Profit and DPR of Nepalese close-end mutual funds by using 38 months' panel data of 26 SEBON registered funds. The results of the fixed effects regressions yield four main empirical results.

Firstly, the size of the fund is having a positive and statistically significant impact on all the three performance measures i.e. NAV, Net Profit and DPR ($p < 0.01$). This confirms that bigger funds have better results because they benefit from economies of scale, portfolio diversification, greater liquidity and more effective management.

Secondly, operating expenses have negative effects on NAV and Net Profit ($p < 0.05$), but have no significant effect on DPR. Thus, although increased costs lower fund value and profitability, the DPR is mainly influenced by profit rather than cost structure.

Third, fund age does not significantly affect NAV, Net Profit and DPR ($p > 0.05$). This shows that manager skill, investment strategy and responsiveness to market conditions are more important than longevity in determining fund success.

Fourth, the amount of trade has a positive effect on the NAV and the Net Profit ($p < 0.01$), and no effect on the DPR, indicating that active trading increases the value and the profitability of the fund without having a direct impact on the dividend decision. The analysis of the DPR also confirms that the size of the fund and Net Profit are the main determinants of the distribution of dividends — funds that earn higher profits and operate at a larger scale tend to distribute higher dividends.

The multilevel variance analysis shows that the fund-level effects are the most important for NAV (ICC = 0.546) and especially for DPR (ICC = 0.760), while the time- and market-level effects are the most important for Net Profit (ICC = 0.336). This implies that fund management, investment policy and dividend policy are the key factors in the determination of the NAV and the DPR, while profitability is more vulnerable to market cycles and macroeconomic conditions. All regression models are statistically significant and have satisfactory explanatory power, confirming the reliability of the findings and their suitability for guiding policy.

This study has three scholarly contributions. It provides the first causal, panel-based evidence of determinants of Nepalese mutual fund performance, moving away from the descriptive approach of previous studies. Secondly, it introduces multi-level variance decomposition (ICC) into Nepalese fund research, which enables to separate the sources of performance variation between

the fund level and the time level. Third, it extends the literature by providing the first empirical test of the determinants of DPR in Nepal, which has not been previously examined.

6.2 Policy Implications

6.2.1 To the Investors

Fund age was not found statistically significant ($p > 0.05$) across all models and hence investors should focus on fund size, operating expenses, past performance and management efficiency rather than fund age. The size coefficient for NAV ($\beta = 0.874$) suggests that a one-standard-deviation increase in size increases NAV by about 20% of its mean. This implies that investors should prefer large, low-expense funds with higher and more stable returns. Since operating expenses significantly reduce the NAV and profit ($\beta = -0.235$ and -0.458 respectively, $p < 0.05$), cost efficiency should be an important selection criterion. For actively managed funds, investors have to balance the transaction cost and the return. The increase of trade amount increases NAV and profit ($\beta = 0.312$ and 0.547 , $p < 0.01$), but not dividends. Finally, since DPR is determined by profit ($\beta = 0.018$, $p < 0.05$) and size ($\beta = 0.023$, $p < 0.01$), income-oriented investors should select funds with large profits and long dividend histories, while growth-oriented investors may prefer funds that retain earnings.

6.2.2 For the Fund Managers

Fund managers should focus on growing the size of their funds, management of operating expenses and active portfolio management. Growth through new unit issuance or merger where feasible is supported by evidence that size significantly improves all three performance measures ($p < 0.01$). Since operating expenses significantly reduce NAV and profitability ($p < 0.05$), managers should strive to reduce costs through the adoption of technology, increasing administrative efficiency, and disciplined cost management. The positive effect of trade amount on NAV and profit ($p < 0.01$) justifies active portfolio management, provided transaction costs are kept under control. Age may not matter, but managers must learn to adapt through innovative investment strategies. Lastly, since DPR is affected by profit and size, managers need to have clear, transparent and long term based dividend policy to boost investors' confidence.

6.2.3 For the Regulatory Authority SEBON

SEBON should enhance minimum capital and operating standards as per the finding that fund size significantly improves NAV, profit and DPR ($p < 0.01$) – a clear case for raising minimum capital requirements. Operating expenses have a significant negative impact on NAV and profit ($p < 0.05$); therefore, SEBON should impose expense caps and mandate periodic disclosures of expense details, NAV, turnover ratios and dividends. The non-significance of age supports the shift from age-based to performance-based evaluation of the fund. Lastly, as DPR is also largely influenced by profit and size ($p < 0.05$ and $p < 0.01$ respectively), SEBON should enforce clear and transparent dividend policies and organize financial literacy and mutual fund education programs which would

enhance market credibility and support the long-term development of Nepal's mutual fund industry.

6.3 Limitations of the Study

This study has the following limitations: Variables like inflation, interest rate, political stability, exchange rate is not included so the performance is not fully explained. FE model cannot capture fund-level indirect characteristics (eg: manager's personal style, organizational culture). Thirty-eight months cannot capture the impact of long-term structural changes (earthquake of 2015, covid-19 of 2019). The small size of the Nepalese market makes it difficult to generalize the findings to other developing markets.

6.4 Further Research

Future research may estimate risk-adjusted returns using a CAPM, Fama–French three-factor or Carhart four-factor model; include macroeconomic variables in a multilevel framework; use qualitative methods such as manager interviews; increase the sample to ten to fifteen years to study structural breaks; use Logit, Probit or Tobit models on DPR; and add investor-level behavioral variables in a behavioral finance perspective.

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