Performance Evaluation of Closed End Mutual Funds in Nepal: A Comparative Study of GIMES1, NEF, LEMF and CMF1

A Dissertation submitted to the Office of the Dean, Faculty of Management, in partial fulfilment of the requirements for the Degree of Masters of Business Studies

by

Rumi Maharjan

T.U. Registration No.: 7-2-410-35-2010

Symbol No.: 7339/18

Roll No: 09/074

People's Campus

Kathmandu

September, 2021

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Certification of Authorship

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled "Performance Evaluation of Closed End Mutual Funds in Nepal: A Comparative Study of GIMES1, NEF, LEMF and CMF1". The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

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Rumi Maharjan

14/09/2021

Report of research committee

Ms. Rumi Maharjan has defended research proposal entitled "Performance Evaluation of Closed End Mutual Funds in Nepal: A Comparative Study of GIMES1, NEF, LEMF and CMF1" successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per and submit the thesis for evaluation.

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Supervisor **Dissertation Proposal Defended Date: 17-12-2019**

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Head of Research Committee **Dissertation Viva Voce Date:**

iii

Approval Sheet

We have examined the dissertation entitled "Performance Evaluation of Closed End Mutual Funds in Nepal: A Comparative Study of GIMES1, NEF, LEMF and CMF1" presented by Ms. Rumi Maharjan for the degree of Masters of Business Studies. We hereby certify that the dissertation is acceptable for the award of degree.

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Chairperson Research Committee

Acknowledgements

Rumi Maharjan
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Table of Contents

List of Tables

List of Figures

Abbreviation

AUM   : Assets Under Management

CAPM   : Capital Asset Pricing Model

CMF1   : Citizens Mutual Fund-1

CNX   : Credit Rating Service of India

GIMES1   : Global IMESamunnat Scheme-1

HDFC   : The Housing Development Finance Corporation

ICICI   : Industrial Credit and Investment Corporation of India

LEMF   : Laxmi Equity Fund

P-value   : Probability Value

NAV   : Net Asset Value

NCM   : Nepal Capital Market Ltd

NEF   : Nabil Equity Fund

NEPSE   : Nepal Stock Exchange

NIFTY   : National Stock Exchange FIFTY

ROI   : Return on Investment

S & P   : Standard and Poor's

SEBON   : Securities Board of Exchange

UIT   : Unit Investment Trust

U.S   : United States

Abstract

The current paper evaluates the performance of four closed end mutual funds in Nepal during the period 2017 to 2019. The evaluation is based upon NAV, expenses ratio, portfolio turnover ratio, Jensen measure, Treynor ratio and Sharpe ratio. The purpose of this study is to provide guideline to mutual fund manager and benefits to small investor by suggesting the significant variables. This study uses return as dependent variable and assets, expenses and turnover as independent variable. This study has reviewed many articles regarding the mutual funds but most of the articles were of foreign countries because mutual fund is just in developing stage in the Nepal so, only few articles were available regarding the Nepalese mutual funds This study employed various tools and techniques like expense ratio, portfolio turnover ratio, Jensen measure, Treynor ratio and Sharpe ratio for evaluating the performance of the mutual funds.. The result indicates that among various fund other elements should also be considered for making investment decision not only the performance evaluating tools and techniques.

Keywords: Mutual Fund, Performance, Jensen, Treynor, Sharpe.

CHAPTER I

INTRODUCTION

1.1 Background of study

A mutual fund is a financial intermediary that receives money from shareholders and then invests those funds in diversified portfolio of securities. Mutual funds are operated by professional money managers, who allocate the fund's assets and attempt to produce capital gains or income for the fund's investors. Particularly, a mutual fund is a business that is specialized in managing the financial assets for individual investors. The primary advantages of mutual funds are that they provide economies of scale, a higher level of diversification, they provide liquidity, and they are managed by professional investors. On the negative side, investors in a mutual fund must pay various fees and expenses. Mutual funds charge annual fees called expense ratios and, in some cases, commissions, which can affect their overall returns. Funds are required to maintain a specific level of diversification for operating in the best interests of the investors who need to put their money in a diversified portfolio which seizes the available opportunities in the market across various sectors.

The subject of the study is to evaluate the performance of closed end mutual fund in Nepal. In developed countries the greatest success of mutual fund was seen in twentieth century but in developing countries like Nepal, the history of mutual fund started only with the establishment of "NCM Mutual Fund 2050" in 1993. Currently there are total twenty seven on going mutual funds schemes listed and traded in Nepal Stock Exchange that provide investment opportunities for investors in mutual funds market. Under which twenty four are closed end mutual fund and three is opened end mutual fund.

Mutual fund shares are priced daily at the net asset value (NAV), which is calculated by subtracting fund liabilities from the total market value of the assets in the portfolio. Per

share price is computed by dividing the net asset value by the number of outstanding shares.

1.2 History of Mutual Funds in Nepal

1. NCM Mutual Fund, 1993

NCM is the first Mutual Fund, which was issued for general public on 1993. It was an open-end fund with a par value of Rs.10 per unit which was issued in multiple of 100 units by NIDC Capital Markets. Since mutual funds are NRs.10 per unit, it promotes more participation of general public. The custodian and banker of the scheme was Nepal Arab Bank Ltd. but the management company was NIDC Capital Markets Ltd. After 2 years of introduction, there was an excessive selling pressure of this mutual fund. Therefore, to revive the fund and provide liquidity, by means of repurchase, Nepal Rastra Bank (NRB) and Nepal Industrial Development Corporation (NIDC) injected an amount of Rs.45 million and Rs.15 million respectively in the 1995. (Nepali stock) And also the fund was converted to closed end and listed in the NEPSE. In the end of fiscal year 1999/2000 the Net Asset Value (NAV) of the scheme was NRs 22.15 and the scheme was terminated in the fiscal year 2000/2001.

2. Citizen Unit Scheme

In 1995, Citizen Unit Scheme was introduced and it is the only open end mutual fund that is introduced in Nepal. The par value of this scheme is NRs 100 and it provides regular dividend in the form of interest to its unit holders. The scheme manager is Citizen Investment Trust (CIT) and the current fund size is NRs. 1.62 billion. The current interest rate that the scheme is providing is 8% and CIT is also providing buyback facilities at its own premises to facilitate for liquidity of the units. However, this scheme is not tradable in NEPSE but popular among government employees and defensive investor who wants less risk but regular return.

3. NCM Mutual Fund 2003

During termination of NCM 1993, the mutual fund holders were given option either to get refund or to participate in the new scheme called NCM Mutual Fund, 2003. Out of the total 100 million units, it distributed 1.5 million units to its management and trustee, 1.33

million to the unit holders of previous mutual fund scheme and the remaining 7.17 million units were issued to the public. As published in the annual report 2061/2062 of SEBON, total investment of the fund reached to NRs.156.49 million. (Nepali stock) In November 22, 2012 the last price of mutual fund was NRs 22 on NEPSE and NCMF fund reached its tenure with NRs. 270 million capitalizations. This scheme NAV during tenure was NRs. 27.

1.3 Parties involved as per Mutual Fund Regulation Nepal, 2067 (2010 A.D)

In Nepal, there are four parties are involved as per Mutual Fund regulation.

1. Fund Sponsor

Fund sponsor is similar to a promoter of a company. Mutual fund sponsor appoints or sets up the board of trustees, the asset management company or the fund house and appoints the custodian. The sponsor must obtain approval from SEBON before appointing the fund supervisor.

2. Fund Manager

A fund manager is the responsible for the implementing a fund's investment strategy and managing its trading activities. It is any company or corporate body licensed pursuant who are responsible for registration, operation and supervision of the mutual fund.

3. Fund Supervisor

Fund supervisor are the appointed group of people for the supervision of the mutual fund. Mutual fund should appoint at least five qualified people from various fields before operating the mutual.

4. Depository

The fund manager with consent of the fund supervisor should appoint the Depository who is licensed by SEBON for performing task of depository of the fund.
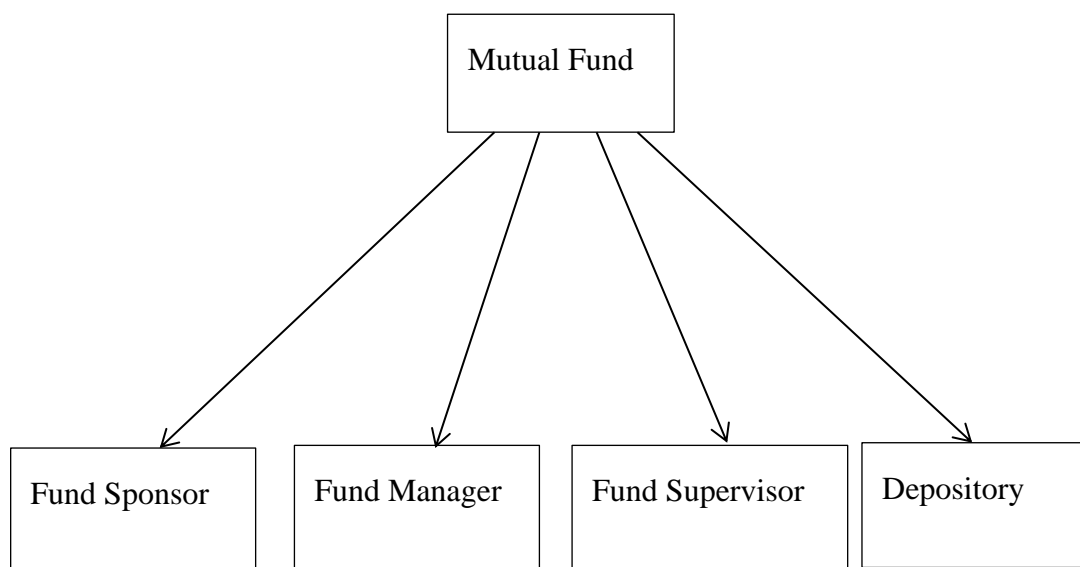
Figure1. Parties involved Mutual Fund

Parties involved as per Mutual Fund Regulation Nepal, 2010			
Fund Sponsor	**Fund Manager**	**Fund Supervisor**	**Depository**
Paid up capital of NRs.1 billion	Paid up capital of NRs 100 million	At least 5 years expert appointed by the Fund Sponsor	Paid up capital of NRs. 100 million
At least 5 years of operation	At least 51% stake of the Fund Supervisor	Experts must have clean records, required qualification and experience in various institutions	Licensed by SEBON to work as depository
Earned profit for last 3 years continuously	Licensed by SEBON to work as the fund manager		

Figure2. Parties involved as per Mutual Fund Regulation Nepal, 2010

1.4 Importance of mutual fund

In the secondary market mutual fund is generally considered to be less risky investment. The benefit of mutual funds varies but in the context of Nepal the mutual fund important due to the following reasons:

- **Professional Management**

Professional managers research, select, and monitor the performance of the securities which the fund purchases. According to the fund's investment strategy, the fund managers make decisions on which asset class they should invest, on a risk adjusted basis. Funds under professional management also issue periodic status reports to inform the individual investors and the capital markets about the fund strategy and the overall financial markets.

- **Diversification**

The goal of diversification is to reduce the overall risk, or variance, of investment returns by mixing multiple stocks, bonds, mutual funds, cash accounts, and other types of investments into a portfolio, by limiting volatility of movements up and down in value of asset classes included. By owning shares in a mutual fund instead of owning individual stocks or bonds, investment risk spread out Diversification reduces both the upside and downside potential and allows for more consistent performance under a wide range of economic conditions.

- **Affordability**

Investors are able to invest by their limited sources in professionally managed mutual fund portfolios. On the other hand, investments made through mutual funds benefits from the economies of scale. Because funds trade large blocks of securities, the transactions cost per share would be lower than the individual investors would be exposed on their individual transactions.

- **Liquidity**

Mutual fund shares can be easily redeemed. Increased liquidity contributes to lowering the overall level of risk.

1.5 Problem statement

In the securities market there are different financial instruments which are frequently traded according to the demand and supply. The driving force for making decision on investment in mutual funds depends upon investors experiences, fundamental and

technical analysis, different psychological factors advices from friends and families, risk appetite etc. In Nepal there are only twenty-seven mutual funds from which three mutual fund is open end mutual fund and twenty-four other mutual funds are closed end mutual funds. The only information that an investor get is the monthly balance sheet and monthly NAV. So, performing comparative analysis can help investor to find returns of individual mutual fund scheme in Nepal. The present study covers four closed end mutual fund performance.

1.6 Objective of the study

The main objective of the study is to evaluate the performance of closed end mutual fund schemes in Nepal.

1.7 Hypotheses of the study

The study attempts to test certain hypotheses on the basis of objective of the study. With the help of the hypotheses, the study is able to evaluate the performance of the sampled closed end mutual funds. Following are the hypotheses made in order to evaluate the performance of the mutual funds:

Ho1: There is no significant difference between the market price and NAV.

Ho2: There is no significant difference between the return and risk.

Ho3: There is no significant difference between the expenses and NAV.

1.8 Rationale of the study

In Nepal, there have not been many studies on mutual fund. Though only few researchers have performed study regarding the mutual funds. This study analyzes and evaluates the performance of mutual funds. However, the mutual fund is very developed in other country and in their market but in Nepal it just have been in its growing and developing phase and making its identity. So, this study will give an insight about mutual fund industry of developing country and also will help to understand more about the mutual funds and gain ideas about elements to be considered during evaluating the mutual funds and to make investment decision.

1.9 Limitation of the study

Nepal is in developing phase of mutual fund industry and like it's been mentioned before that there is only twenty-seven mutual fund including both opened end mutual fund and closed end mutual funds. Mutual fund is just recently gaining popularity in Nepal. So, the data available is limited so the study has to continue from the available data provided by the mutual fund websites and from other mutual fund regarded websites. Number of observation is small as the study includes only three years of data. And also the most literature that has been reviewed is from the foreign countries and only limited literature has been reviewed from the Nepal. Some of the literature is far away from the applicability in the context of Nepal.

1.10 Chapter Plan

This study has been organized into five chapter viz. introduction, literature review, research methodology, analysis and discussion, summary and conclusion. The first chapter deals with the introduction part of the study. It includes background of the study, problem statement, objectives of the study, hypothesis of the study, rationale of the study, limitation of the study and chapter plan of the study. The second chapter contains theoretical review and empirical view. The third chapter deals with research framework and definition of variables, research design, sample, and sampling design, nature and sources of data, and the instrument of data collection and method of analysis. The fourth chapter presents the analysis of data and discussion in the form of various tables and figures and the fifth chapter is about summary and conclusion. Finally, an extensive references and annexure of presented at the end of the study.

CHAPTER II

LITERATURE REVIEW

Literature surveys area basis for research in nearly every academic field. It includes the current knowledge including substantive findings, as well as theoretical and methodological contributions to a particular topic. It provides foundation of knowledge on topic. Literature surveys are secondary, sources and do not report new or original experimental work. Most often associated with academic-oriented literature, such reviews are found in academic journals. It is useful in setting the purpose of the study and provides guidelines for determining the variable s under study. It enables a researcher to find out about the existing bodies of knowledge on the topic of his/her interest. It helps to find out the areas yet to be studied in the concerned topic and need for additional research. It states the findings from previous researches hence enabling a researcher to generate the hypothesis for the research.

2.1   Conceptual Review

2.1.1   Investment companies

Investment Company is type of financial institution that issues share to public. The money which is received from shareholders is pooled and invested in a wide range of stock bonds, or money market securities to meet specific investment objective. These companies are specialized financial intermediaries that collect money by selling shares of small value to the investors and invest in the portfolio of securities. These companies provide professional service to the investors and take management fee for the service provided.

In context of Nepal, investment companies play an important role to mobilize the saved money of small investors into productive investment. Government and regularities agencies are not paying proper attention. Investment companies playing significant role in economic development of developed countries. But Nepal is not being able to enhance

the development of investment companies. The main objective of an investment company is to hold and manage securities for investment purposes. The various varieties of funds and investment services are provided to the investors, which include portfolio management, recordkeeping, custodial, legal, accounting and tax management services. The function of investment companies are, to provide the services to those investors who lack knowledge about various technicalities of investment. These companies are operated according with NAV concept.

There are two types of investment companies that are unmanaged investment companies and managed investment companies. Unmanaged Investment Company is further divided in unit investment trust (UIT) and similarly, managed investment company is divided into closed end fund and open end fund.
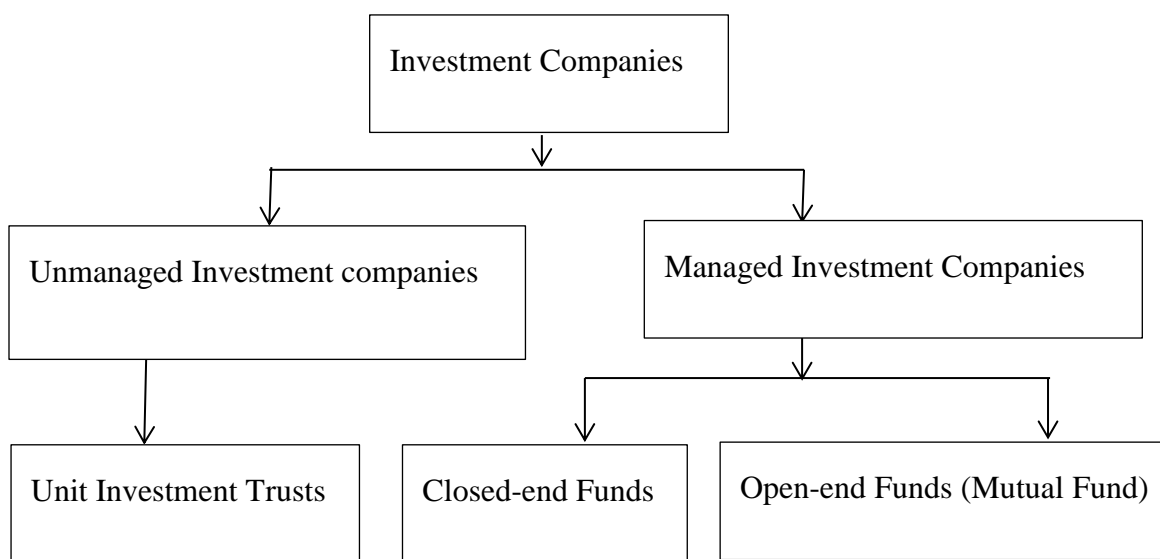
Figure3. Types of investment companies

2.1.1.1 Unmanaged investment companies

An investment company that offers a fixed, unmanaged portfolio, stock and bond as redeemable units to investors for specific period of time. It is also known as unit investment trusts (UIT). A UIT generally issues redeemable securities or units like a mutual fund which means that the UIT will buy back an investors unit at the investors

request at their approximate net asset value (NAV). UIT have specific termination date which is established when UIT is created. A UIT does not actively trade its investment portfolio.

2.1.1.2 Managed investment companies

Managed investment company is an investment company with a portfolio that may be altered at the discretion of the company portfolio manager. In this type of company the funds of board of directors is elected by shareholders, hires a management company to manage the portfolio for annual fee that typically ranges from 0.2 percent to 1.5 percent. There are two types managed company:

- Open-end investment company
- Closed-end investment company

Open end and Closed end mutual fund

Open end mutual fund and close end mutual fund are two types of mutual fund. Open end mutual fund is a collective investment scheme that can issue and redeem shares at any time. Capitalization of open end fund is open and the number of shares outstanding changes frequently. These types of fund shares are typically redeemed at the fund's net assets value (NAV). The price of the share of open end funds is fixed at net assets value per share of the fund. The price of open end funds cannot fall below their NAV because these funds stand ready to redeem share at NAV. The share price behavior of open end funds is not puzzling. An open ended mutual fund generally restricted to borrow money, trade option and futures contracts by law. Open end mutual fund is popular in developed countries.

Closed end mutual fund is a collective investment model based on issuing a fixed number of shares which are not redeemable from the fund. It is operated with a fixed number of shares outstanding and this type of fund do not issue new share of stock regularly. Capitalization is fixed in closed end mutual fund. Shares of closed end mutual fund are traded at market price. A closed end fund can borrow money and trade options and future contracts by law. Price of the share of closed end fund is fixed in the stock exchange by considering demand and supply conditions and other factor. Generally closed end funds

issue their share at premium to NAV. The share price can sell below or above NAV after issue. The share price behavior of open end funds is puzzling.

2.1.2 Mutual fund schemes

The securities Board of Nepal (SEBON), the apex regulatory body for the Nepal's capital market. Every mutual fund schemes must get approval from SEBON before operating and regulating its activities in the market. Mutual fund schemes can be based on the maturity of fund, the principal of investment and solution oriented. In Nepal currently there are total twenty-seven mutual fund schemes under which twenty-four are closed end mutual fund scheme and three open end mutual fund scheme.

2.1.3 NEPSE

NEPSE is the only stock exchange in Nepal. It is secondary market where investor can buy and sell the stock. Currently there are 255 companies listed in the NEPSE. At present there are 43 branches with 50 members of broker. The basic objective of NEPSE is to impart free marketability and liquidity to the government and corporate securities by facilitating transactions in its trading floor through member, market intermediaries, such as broker, market makers etc.

2.1.4 Mutual fund performance

There are numbers of attractive mutual fund that have good performance. Numerous studies have examined the historical performance of mutual funds. Most analysis of gross performance indicate that about one half of mutual funds have performed better than the overall market on a risk adjusted basis however the studies have also found that only about one third of funds performed better than the market on risk adjusted basis after expenses were taken into consideration.

Treynor (1965) combined both risk and return in a single performance measure as the first formal technique. Then Sharpe (1966) used the ratio of risk premium of the portfolio, divided by the standard deviation of the portfolio return as the alternative technique. After Sharpe, Jensen (1968) used risk adjusted excess return in measuring the performance of mutual fund and Jensen alpha is used for assessing the additional return or loss earned by the portfolio after adjusting for systematic risk which was developed as

third measure. These techniques are based upon Capital Asset Pricing Model (CAPM) and still widely used for measuring and evaluating the performance of mutual funds.

2.1.5 Liquidity

Liquidity means availability of cash or cash equivalents to meet short-term operating needs. In other words, liquidity is the amount of liquid assets that are available to pay expenses and debts as they become due. Liquidity is cash balance available at the end of month which is recorded from the monthly balance sheet of individual mutual fund. Closed end fund don't hold cash for redemption like open end mutual fund.

2.2 Empirical Review

The main aim of the study is evaluate the performance of sampled closed end mutual funds. And to compare the performance of the closed end mutual funds. All the article, studies and paper are related to the study being carried out. The summary of the article on the subject matter is presented in Table 1.

Table 1

Review of empirical studies

Study	Major findings
Sharpe (1966)	• Attempted to extend Treynors work. • Discovered difference in performance is due to difference in objectives.
Jensen (1967)	• Identified very little evidence that any individual fund was able to do significantly better than expected from mere random chance. • Indicated the past performance of the fund, predict the future demand of the fund, investors attract to invest in Mutual Fund.
Cumby and Glen (1990)	• Identified that the fund equally underperformed the world index during the test month • Found the evidence of apparent perverse market timing by the fund managers
Grinblatt & Titman (1992)	• Found that there is differences in performance between funds persist over the time and that the persistence consistent with the ability of fund manager to earn abnormal return. • Found that there is positive persistence in mutual fund performance.

Grinblatt & Titman (1994)	• Identified that turnover is significantly positively related to the ability of fund managers to earn abnormal returns. • Found that the choice of benchmark can have large effect on inferences about performance.
Carhart (1997)	• Explained short-term persistence in equity mutual fund returns with common factors in stock returns and investment costs. • Found expense ratios, portfolio turnover, and load fees are significantly and negatively related to performance • Identified important rules of thumb for maximizing wealth mutual fund investors.
Otten & Bams (2002)	• Found the expenses ratio and ages are negatively related to risk adjusted performance while fund assets are positively related. • Identified most European mutual funds besides the obvious advantage of easy diversification and lower transaction costs also deliver positive risk adjusted performance of investors.
Bialkowski & Otten (2011)	• Identified weaknesses of legal institutions and underdeveloped capital markets in developing countries could have negative impact to performance. • Found polish mutual funds on average are not able to add value, as indicated by their negative net alphas. • Observed that developed markets that even past winners are not able to significantly beat the market.
Narayanasamy and Rathnamani (2013)	• Observed all the funds have performed well in the high volatile market • Concluded to consider statistical parameters for investment.
Zaheeruddin, Sivakumar & Reddy (2013)	• Found that the mutual funds are one of the best investment sources available for small investors to make an investment in India.
Kaur (2014)	• Found open ended debt mutual funds have not performed better than the benchmark indicators. • Found average return of the schemes is less than the market index.
Jain, Singal and Dwivedi (2014)	• Found performance of mutual fund is below the market return from 2008-2013. • Found mutual fund performance started to improve from the 2012 onwards as the stock market was also improving.
Ching Wu (2014)	• Showed mutual funds with higher turnover and expenses did not earn rates of return sufficiently high to offset the higher charges. • Found that underperforming funds are more likely to

	have higher portfolio turnover ratios and higher expenses in relation to a sample of well performing funds.
Shukla (2015)	• All the funds are having positive correlation with Nifty.
Manek (2016)	• Found a strong relationship between scheme returns and index returns but a weak correlation between the two main variables under the study.
Bajracharya (2016)	• Found that the mutual funds did not performed better than their benchmark indicators and some of the funds have performed better than the benchmark of its systematic risk but with respect to volatility most of the funds do not performed better.
Kanodia and Khinchi (2017)	• Stated that mutual fund has been equally necessary in today's situation. • Mentioned that degree of correlation is very important between funds and market return and the impact of funds specific characteristic on the fund performance.
Ojha (2017)	• Provided insights on mutual fund performance to assist the common investors in taking the rational investment decisions for allocating their resources in correct mutual fund scheme.
Dhandayuthapani and Arunpratheep (2018)	• Found the Sharpe ratio of HDFC liquid Fund maintains first rank followed by HDFC cash management Fund. The lowest Sharpe ratio found in the case of HDFC was gold Fund. • Found the Treynor ratio of HDFC liquid Fund is highest ratio and the lowest Treynor Ratio found in the case of HDFC income funds. • Found the Jensen alpha of HDFC small cap fund were found the highest ratio and lowest Jensen ratio found in the case of HDFC equity fund.
Dave and Raval (2018)	• Observed though standard deviation and Sharpe index are statistically superior tools the investor must also incorporate simple average return over the investment period for better decisions. • Identified return earned per unit of total risk is also positive in each case that made public sector mutual funds schemes a better choice for small investors from viewpoints of both risk and return. • Provided insights for better decision making the small investors should include average return over the investment period, standard deviation and Sharpe index

Sharpe (1966) published a paper on mutual fund performance. The paper attempts to extend Treynors work by subjecting his proposed measure to empirical test in order to evaluate its predictive ability. But this paper also attempt to make explicit relationships between capital theory and alternative models of mutual fund performance and subject these alternative models to empirical test. The paper also includes the performance of 34 mutual funds (1954-63).The paper attempted to bring to bear on the measurement and prediction of mutual fund performance some of the results of recent work in capital theory and the behavior of stock market prices. It has shown the performance of mutual fund can be evaluated with a simple yet theoretically meaningful measure that considers both average return and risk. This measure precludes the discovery of differences in performance due to solely differences in objectives. However, even when performance is measured in this manner there are various differences among funds; and such differences do not add to be entirely transitory.

Jensen (1967) conducted a study of The performance of mutual funds, in the period 1945-1964. In the paper Jesen derived a risk-adjusted measure of portfolio performance which is now known as "Jensen's Alpha" that estimates how much a manager's forecasting ability contributes to the funds returns. The measure is based on the theory of the pricing of capital assets by Sharpe (1964),Lintner (1965a) and Treynor. Jesen applied the measure to estimate the predictive ability of 115 mutual fund managers in the period 1945-1964 that is their ability to earn returns which are higher than those they would expect given level of risk of each of the portfolios. Analysis of net returns indicated that, 39 funds had above average returns, while 76 funds yielded abnormally poor returns. Using gross returns, 48 funds showed above average results and 67 funds below average results. The evidence on mutual fund performance discussed above indicates not only that 115 mutual funds were on average not able to predict security prices well enough to outperform a buy-the-market-and-hold policy, but also that there is very little evidence that any individual fund was able to do significantly better than the study expected from mere random chance. It is also important to note that the conclusions hold even when the study measure the fund returns gross of management expenses. Thus on average the funds were not quite successful enough in their trading activities to recoup even their brokerage expenses. The study also stated that it is important to remember that the study

have not considered the question of diversification. Evidence reported Jensen (1967) indicates the funds on average have done an excellent job of minimizing the insurable risk born by their shareholders.

Cumby and Glen (1990) published a paper on evaluating the performance of international mutual funds. The study examined the performance of U.S. based internationally diversified mutual funds under taking fifteen mutual fund as a sample from the time period between 1982 and 1988. It used two performance measures the Jesen (1968, 1969) measure and Grinblatt and Titman (1989b) positive period weighting measure. The study did not found evidence that the funds, either individually or as a whole, provide investors with performance that surpasses that of a broad, international equity index over the sample period. The study also examined the behavior of the funds during October 1987 and found that the fund equally underperformed the world index during the month. The study carried out the tests of market timing ability suggested by Treynor and Mazuy (1996), it found evidence of apparent perverse market timing by the fund managers. That evidence is considerably weaker when bootstrap t-ratios are used to perform hypothesis tests than when asymptotic t-ratios are used and when October 1987 is excluded from the sample.

Grinblatt and Titman (1992) established paper on the persistence of mutual fund performance. The paper analyzed how the mutual fund performance relates to the past performance. The tests are based on multiple portfolio benchmarks which were formed on the basis of multiple securities characteristic. The study found out that there is differences in performance between funds persist over the time and that the persistence consistent with the ability of fund manager to earn abnormal return. The result found by the research is that there is positive persistence in mutual fund performance. It also mentioned that the persistence cannot be explained by the inefficiencies in the benchmarks that are related to the firm size, past return, divided yield, skewness, interest rate sensitivity. The findings of the research are consistent with there being persistent difference in fees and transaction costs across funds, although the results in the study suggested that it is not the sole explanation of the research results. The paper also stated that the issue in the study is, it did not address that is, how to optimally weight information about the past performance in selecting mutual fund.

Grinblatt and Titman (1994) conducted a study a study of monthly mutual fund returns and performance evaluation techniques. The study finds the measures generally yield similar inferences, when using the same benchmarks and that inference can vary even from the measure, when using different benchmarks. This study also analyzed the determinants of mutual fund performance. This study contains three contributions to literature on portfolio performance evaluation. First, it examined the sensitivity of the performance inferences to benchmark choice. Second, it compared the Jesen measure with two new measures that were developed to overcome the timing related biases of the Jesen measure then finally it analyzed whether fund performance is related to fund attributes. The test also suggested that turnover is significantly positively related to the ability of fund managers to earn abnormal returns. It also found that choice of benchmark can have large effect on inferences about performance. A part of the paper presented tests to examine the determinants of mutual fund performance. Those tests analyzed whether performance, as measured by the only reliable benchmarks, the P8 benchmark, is related to fund size, expenses, management fee portfolio turnover but not to the size of mutual funds or the expenses that the funds generate which suggested that the funds that spend the most on research and trade the most may in fact be uncovering underpriced stocks.

Carhart (1997) published an article on persistence in mutual fund performance. The study demonstrated that common factors in stock returns and investment expenses almost completely explain persistence in equity mutual funds mean and risk-adjusted returns. The article offers slight evidence consistent with skilled or informed mutual fund managers. The article also found that expense ratios, portfolio turnover, and load fees are significantly and negatively related to performance. Expense ratios appear to reduce performance little more than one for one. The evidence of article suggested important rules of thumb for maximizing wealth mutual fund investors. They are ,avoid funds with persistently poor performance, funds with high returns last year have higher-than-average expected returns next year, but not in years thereafter and the investment costs of expense ratios, transaction costs, and load fees all have a direct and negative impact on mutual fund performance.

Otten and Bams (2002) published a paper on European mutual fund performance. The paper gave the overview of European Mutual fund industry and investigated mutual fund

performance which used both unconditional and conditional models. The performance of European equity fund investigated using a survivorship bias controlled sample of five hundred six from which five mutual funds are the most important mutual funds of countries. The study also investigated the influence of fund characteristics on risk adjusted performance and found the expenses ratio and age are to be negatively related to risk adjusted performance while fund assets are positively related. The study results suggested that most European mutual funds besides the obvious advantage of easy diversification and lower transaction costs also deliver positive risk adjusted performance of investors.

Bialkowski and Otten (2011) published a paper, the paper that provided evidence on the performance of mutual funds in a prominent emerging market in Poland. It studied an emerging market provides an excellent opportunity to examine whether the consensus on inability of mutual funds in developed and highly efficient markets to beat the market, also holds in less efficient markets. The study mentioned weaknesses of legal institutions and underdeveloped capital markets in developing countries could have negative impact to performance. A certain level of market inefficiency might be enabling the fund managers to successfully apply security selection and beat the market. The paper presented an overview of the polished mutual fund company and studied mutual fund performance which a survivorship bias controlled sample of 140 funds. The latter is done using the Carhart (1997) four-factor asset-pricing model. In addition, the study investigated whether polish fund managers exhibit the hot hands, persistence in performance. Finally the influence of fund characteristics on risk-adjusted performance is considered. The overall results suggest that Polish mutual funds on average are not able to add value, as indicated by their negative net alphas. Interestingly, domestic funds outperform internationally investing funds, which points at informational advantages of local over foreign investors. Finally, it detected the strong persistence in mean returns up to one year. It is striking that winning funds are able to beat the market, based on significantly positive alpha's. These results deviated from studies on developed markets that concluded that even past winners are not able to significantly beat the market.

Zaheeruddin, Sivakumar and Reddy (2013) conducted a study on performance evaluation of mutual funds in India with special reference to selected financial intermediaries. The

objective of the study to investigate the financial performance of the mutual funds with the tools of return, standard deviation and beta, to evaluate the selected funds assessment on the basis of various performance ratios and to compare HDFC, Birla sun life and ICICI equity performance with the S&P CNX Nifty index for giving rankings of mutual funds by their outstanding performance. The study took three samples for the study. The sampling tools used for analysis were standard deviation, Beta, Sharpe ratio, Treynor ratio. The study concluded that the mutual funds are one of the best investment source available for small investors to make an investment in India, if thoroughly assessed it may give big returns with little savings. The performance ratios were helpful for the evaluator to assess the fund's performance. The mutual fund investment are subjects to market conditions, for the risk averse investors there are so many other investment alternatives available apart from the mutual funds, such as investment in other Financial Assets and other non-financial assets to avoid risk.

Narayanasamy and Rathnamani (2013) conducted a study performance evaluation of equity mutual funds. The objective of the study was to study the performance of a growth scheme of a selected mutual fund, to examine the return from the selected mutual fund, to know whether the mutual funds are able to provide reward to variability and volatility and to identify security market return with fund return. The research was conducted on five equity mutual fund. The used for study were secondary data. The tools and technique used for evaluating the performance of mutual funds are alpha, beta, standard deviation, R square and Sharpe ratio. It found that the entire sampled equity fund performed well during the time of study. The study concluded that all the funds have performed well in the high volatile market movement expect reliance vision. Hence, it is essential for investors to consider statistical parameters like alpha, beta, standard deviation while investing in mutual funds apart from considering NAV and total return in order to ensure consistent performance of mutual funds.

Kaur (2014) conducted a study on performance evaluation of debt mutual fund schemes in India. The objective to conduct a study was to examine the risk and return component among these mutual funds, to study the relationship between NAV and market portfolio return and to evaluate the return of mutual funds according to the Fama's model. The research evaluated performance of 23 sample schemes which have been selected on the

basis of weekly returns compared to benchmark returns. The study concluded that open ended debt mutual funds have not performed better than the benchmark indicators. The average return of the schemes is less than the market index. The empirical results showed that on the basis of total risk the schemes are less volatile than the market. The fund managers are found to be poor in terms of their ability of market timing and selectivity.

Jain, Singal, Dwivedi (2014) conducted a study: Performance evaluation of mutual funds: A study of selected researches. The main focus of the study was to review about the mutual fund investment policies and strategies used in previous years by various researchers. The paper has reviewed 14 studies of mutual fund from the year 1965-2012. The main aim of the paper was to concentrate on the various studies conducted on mutual funds in India and outside India. Techniques like ratio and correlation techniques, Treynor's technique, variability ratio, ratio analysis, analysis of data is planned with the help of mean, chi-square technique, analysis of variance, Jensen measure, Fama criteria, Sharpe and Jensen techniques are used for the study. According to study contribution of the Sharpe, Jensen and Treynor is very important as there parameter for evaluation of mutual fund becomes standardize tool for evaluation of mutual funds in almost throughout world. Some researchers started using the Fama's tool for decomposition, moving average and variance analysis for evaluation of mutual funds. Regression analysis is also used by the most of the researchers. The few studies showed that the Indian Mutual Fund industry has grown at fast rate in last decade. Performance of Mutual fund is below the market return from 2008-2013. Performance started improving from the 2012 onwards as the stock market was also improving. Mostly sectorial funds affect the performance of the mutual funds.

Ching Wu (2014) published a research paper on interaction between mutual fund performance and portfolio turnover. The research paper examined interaction between mutual fund performance and portfolio turnover. According to the study active trading could affect fund performance, but underperforming funds could also be traded actively at the same time to perform well. So, the study used two-stage least squares to address with simultaneity. The results indicated that funds with higher portfolio turnovers exhibit inferior performance compared with funds having lower turnovers. The funds with poor performance exhibit higher portfolio turnover. The findings of the study supported the

assumptions that active trading erodes performance, and that fund managers with poor performance attempt to trade actively to retain employment. The study investigated the interaction between mutual fund performance and turnover ratio by using sample of open end actively managed equity funds in Taiwan from 2003 to 2012. The literature indicated that increasing portfolio turnover could influence fund performance, whether from the perspective of transaction cost eroding the fund performance or of active trade and adding value. The poor performance increased portfolio turnover, giving rise to simultaneity problems occur. Structural equations are specified to ensure an exactly identified performance and turnover equation. The result of research showed mutual funds with higher turnover and expenses did not earn rates of return sufficiently high to offset the higher charges. The findings of study are consistent with the notion that active trading affects the mutual fund performance (Carhart, 1997). The study also found out that underperforming funds are more likely to have higher portfolio turnover ratios and higher expenses in relation to a sample of well performing funds. The results supported the findings of Khorana (1996) that fund managers engage in larger portfolio turnover activity to prevent the termination of employment.

Shukla (2015) conducted a study on a comparative performance evaluation of selected mutual funds. The objective of study are to study the performance of selected mutual funds schemes under different 5 categories, to examine the return from the selected mutual funds, to know whether the mutual funds are able to provide reward to variability and volatility and to identify security market return with fund return for the study period. The tools and techniques used for study are standard deviation, alpha, beta and Sharpe ratio The study found all the funds had positive correlation with Nifty and also had positive returns throughout the period covered except for year 2013 where infrastructure funds have been laggards. It concluded that mid and small cap had highest return, Infrastructure had highest risk, hybrid had least risk.

Manek (2016) issued a paper on mutual fund performance, a study on the effect of portfolio turnover on mutual fund performance in the Indian financial market. The purpose of the research paper was to investigate the significance of portfolio turnover on mutual fund return which would provide an indication to investors on how to invest in funds based on management style. In research paper, only open ended diversified growth

oriented equity funds are taken into consideration. The dividend paying equity schemes are not considered for research. The null hypothesis of study was the portfolio turnover had no significant effect on scheme return whereas the alternate hypothesis was that mutual fund turnover ratio impacts return. Contrary to the study where Carhart (1997) found a strong negative relation between turnover and scheme returns, the analysis was consistent with Grinblatt and Titman (1994) who found a positive correlation between portfolio turnover and fund performance. Therefore, the research paper rejected the null hypothesis and accepted the alternate hypothesis. The major conclusion drawn from mthe study was it found a strong relationship between scheme returns and index returns but a weak correlation between the two main variables under the study. However, it can always find exceptions to the study, there may be funds that may have consistently outperformed the index due to its high or low turnover ratio, but whether that outperformance can be completely attributed to turnover is questionable. Consistent outperformance might be the result of other management styles and strategies. The analysis was based on an extensive data set and in depth statistical analysis which helped the study to validate the conclusion.

Bajracharya (2016) published a paper on mutual fund performance in Nepalese mutual fund units:an analysis of monthly returns. The is paper focused on evaluating the performance of five mutual funds of NEPSE on the basis of monthly returns compared to benchmark return. The main objective of the study is to evaluate the performance of mutual funds and along with to present an extensive analysis the factors which impact the price. The paper adopted the Jensen measure, reward to volatility ratio, and reward to variability methods to evaluate the performance of the mutual funds. The paper concluded that the mutual funds have not performed better than their benchmark indicators. Some of the funds have performed better than the benchmark of its systematic risk but with respect to volatility most of the funds do not performed better. The sample taken for the study are not highly diversified unless few mutual funds and because of their high diversification they have reduced total risk of portfolio whereas, other mutual funds have low diversified portfolio and have more risk. For expansion the depth of the capital market, it is necessary to float more mutual funds since these are good instruments of mobilizing savings and providing investment opportunities to small savers. Although

small in size, mutual funds have contributed toward broadening the base of the country's capital market and co-operated the investors to gain high and relatively secure returns.

Kanodia and Khinchi (2017) conducted a study on performance evaluation of mutual funds in India: literature review. The study stated that mutual fund has been the foremost favored investment choice for the small investors since it has been first introduced. The main purpose for the study was the high investor's return and less risk level. It gave chance for the small investors to participate within the market securities and serving in increasing the business by reducing risk. The study is about the review of literature of those studies that have been carried out regarding the performance of mutual fund. The study reviewed total twenty five literatures of various researchers. The study provided detailed about the measures used to evaluate the mutual fund performance and also mentioned the measures involved the study such as, standard deviation, chi square, beta, alpha, R square, Sharpe ration. It also listed the method and source of data collection used by the all twenty five literature that is primary data and secondary data. Hence the study stated that mutual fund has been equally necessary in today's situation because it is tends to possess genuine. The paper insist on significant improves the necessity needed before investing in any mutual fund and the trend of investment in mutual fund gaining popularity day by day it also becomes important to study the risk involved and the substantial value of returns incurred through it. The paper focused to generate the knowledge about Indian mutual funds industry. The study concluded that there is still some gap in the study the performed which needs to fill in near future. It mentioned that degree of correlation is very important between funds and market return and the impact of funds specific characteristic on the fund performance. The correlation had to be developed so as to have a better idea on how one parameter can affect the other. Evaluation of ratios performance and ranks has to be more focused on the basis of foreside ratios so as to achieve a better understanding of interdependence among funds and index.

Ojha (2017) conducted the study on Performance evaluation of mutual funds: a study of selected equity diversified mutual funds in India. The objective of the study was to study the performance of selected equity diversified mutual funds in India and to compare the performance of selected equity diversified Mutual Funds in India by using Sharpe and

Treynor model. The data employed in the study consisted of monthly NAVs for the open ended schemes. The study utilized benchmark portfolios according to the scheme objective for all growth or equity schemes. The performance of sample mutual fund schemes has been evaluated in terms of return and risk analysis and risk adjusted performance measures such as Sharpe ratio and Treynor ratio. The performance of mutual fund in terms of average returns, thirty percent of the diversified fund schemes have showed higher and superior returns and other remaining showed inferior returns. In terms of standard deviation there were ninety percent of selected schemes that are less risky than the market. Seven funds among ten funds had beta less than one and positive, which indicates that they were less risky than the market portfolio and in terms of coefficient of determination, all sampled ten funds were near to one which indicates higher diversification of portfolio. One out of ten funds had shown superior performance, under the Sharpe ratio and four out of ten in case of Treynor Ratio had showed higher. The study concluded that in India there are innumerable mutual fund schemes which are available to general investors that generally confound them to pick the best out of them. The study provided some insights on mutual fund performance so as to assist the common investors in taking the rational investment decisions for allocating their resources in correct mutual fund scheme.

Dhandayuthapani and Arunpratheep (2018) conducted a study on performance evaluation of select mutual fund schemes in HDFC. The Objectives Of the study was to study the performance of select mutual fund schemes in HDFC, to examine the performance of selected schemes by using the performance evaluation models namely Sharpe, Treynor and Jensen and to compare the performance of 10 open ended mutual fund schemes according to the performance evaluation. The findings of the study were the Sharpe ratio of HDFC liquid Fund maintains first rank followed by HDFC cash management Fund. The lowest Sharpe ratio found in the case of HDFC was gold Fund. Similarly the Treynor ratio of HDFC liquid Fund is highest ratio and the lowest Treynor Ratio found in the case of HDFC income funds and the Jensen alpha of HDFC small cap fund were found the highest ratio and lowest Jensen ratio found in the case of HDFC equity fund. The study concluded that it provided some ideas on mutual fund performance to assist the common investors in taking the rational investment decisions for allocating their resources in

correct mutual fund scheme. The past performance of the particular schemes is evaluated on the source of Sharpe, Treynor, and Jensen's tools and the outcomes would be helpful for the investors for handling better investment decision. In the study, the Sharpe ratio & Treynor ratio was positive for all schemes which showed that the funds were given that incomes bigger than risk free rate.

Dave and Raval (2018) conducted a study on Performance evaluation of public sector mutual funds evidences from India. The main objective of the research paper is to provide the knowledge and understanding for the small investors in terms of analyzing mutual fund schemes for better decision making. The study covered seven public sector mutual fund schemes over a period of five years. The parameters used for the study are year on year return, simple average return over the investment period, standard deviation and Sharpe index. The result of the study indicated that all public sector mutual fund schemes have given better returns than the risk free returns offered by post office schemes. The study also observed though standard deviation and Sharpe index are statistically superior tools the investor must also incorporate simple average return over the investment period for better decisions. The return earned per unit of total risk is also positive in each case that made public sector mutual funds schemes a better choice for small investors from viewpoints of both risk and return. The study concluded that for better decision making the small investors should include average return over the investment period, standard deviation and Sharpe index as parameters in their decision matrix.

2.3 Research Gap

Performance evaluation of the mutual funds plays an important role for those investors who tend to invest in mutual funds. This study will help the investors by providing some ideas and concept regarding the mutual funds for their decision making. For this purpose monthly data of three years will be calculated that is from 2017 to 2019. The time given for the report writing was not enough for comprehensive research. Sample size could have affected the results. NAV, Expenses ratio, Portfolio turnover ratio, Jensen measure, Treynor ratio and Sharpe ratio were used in order to get the findings for the research. Most of the research are conducted in other countries where mutual funds are well

established but only few research are conducted in Nepal where mutual funds are still in developing phase which leads to limited data availability. Due to which, results and finding and conclusion may differs accordingly which is the one of the research gap in this dissertation.

CHAPTER III

Research Methodology

Research is a systematic and organized method of scientific investigation with the objective of finding solution of the problem or finding answers of unanswered questions. Research methodology is the specific procedures or techniques used to identify, select, process, and analyze information about a topic. It is the path through which researchers need to conduct the research. It also shows the path to researchers through which researchers formulates the problem and objective and present the result from the data obtained during the study period. The research methodology gives rise to diversities of perception, description, conception, probable relevancy, validity and significance toward researchers and readers. Research methodology can be of many types, it depends upon the requirement of study which method will be helpful for the study. Research methodology is the study of method which gives knowledge. It deals with the cognitive processes imposed on research by the problems arising from the nature of its subject matter. Research methods comprise the procedures used for generating and evaluating data. There are numerous tools utilized to uncover truth, and find the explanations for the occurrence of a phenomenon.

3.1 Research framework and definition of variables

A research framework provides an underlying structure or model to support the collective research efforts. Its helps to maintain focus on variable used for the study. It clearly illustrates the structure of the research plan and helps the researcher formulate relevant research questions. Research framework is used to diagrammatically describe the individual steps followed throughout this research. The dependent variable in this study is return and independent variable is assets, expenses and turnover. The research framework of the study is in Figure 4.

Independent variable	Dependent variable
NAV, expenses, turnover	Return

```
┌──────────┐
│   NAV    │───────┐
└──────────┘        ↘
┌──────────┐        ┌──────────┐
│ Expenses │───────→│  Return  │
└──────────┘        └──────────┘
┌──────────┐        ↗
│ Turnover │───────┘
└──────────┘
```
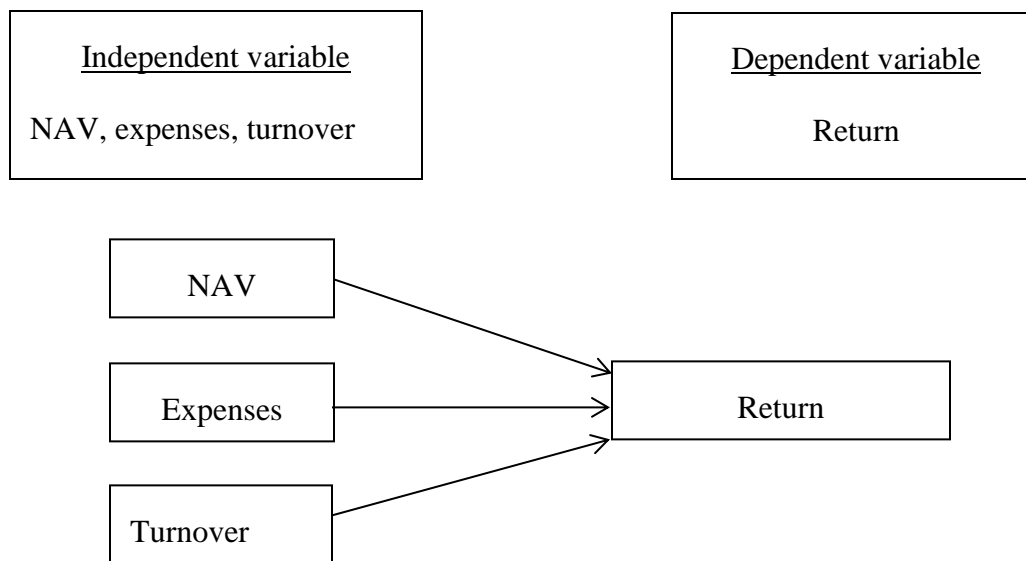
Figure4. Research framework of the study

From the research framework and objective of the study, it is clear that study aimed to evaluate the performance of closed end mutual fund in Nepal with the selected variables. The definition of each variable in the study is as follows:

3.1.1 NAV

Net asset value (NAV) represents a fund's per share market value. It is the price at which investors buy "bid price" fund shares from a fund company and sell them "redemption price" to a fund company. It is derived by dividing the total value of all the cash and securities in a fund's portfolio, less any liabilities, by the number of shares outstanding. A NAV computation is undertaken once at the end of each trading day based on the closing market prices of the portfolio's securities. The NAV pricing system for the trading of shares of mutual funds differs significantly from that of common stocks or equities, which are issued by companies and listed on a stock exchange. The NAV is simply the price per share of the mutual fund. It will not change throughout the day like a stock price; it updates at the end of each trading day. So, a listed NAV price is actually the price as of yesterday's close. But an order you put in will be based on the updated NAV at the end of the current trading day. As a result, you may not know the exact NAV when you buy or sell shares.

3.1.2 Expenses

Expenses ratio is the fee or cost charged by the investment company in order to manage the fund of investors. Expense ratio is determined by dividing a fund's operating expenses by the average value of its assets under management (AUM). Operating expenses reduce the fund's assets, thereby reducing the return to investors. Expense ratios can also be modified in various ways. It is mostly concerned with total expenses, but also sometimes, people try to understand gross expenses versus net expenses. In a mutual fund expense ratio plays an important role to the investors because the operating and management fee of a fund can have large impact on net profitability. An expense ratio shows how much money is being spent on administrative costs compared to how much is being invested. Expense ratio around 0.5% to 0.75% is considered to be good expense ratio and ratio greater than 1.5% is considered to be high. The various charges included in expense ratio are management fee, administrative fee, 12b-1distribtion fee, front end and back end load fee.

3.1.3 Turnover

Turnover ratio is the percentage of a mutual fund or other portfolio's holdings that have been replaced in a given year. The turnover ratio differs by the type of mutual fund, investment objective and the portfolio manager's investing style. The turnover ratio is used to check the efficiency of the company that how it uses its assets to earn revenue. A higher ratio is considered to be better as it would indicate that the company is optimally using the resources to earn revenue and it would imply a higher return on investment (ROI) and the funds invested are used the least. Funds with high turnover ratios might include greater costs like trading fees, commissions and generate short-term capital gains, which are taxable at an investor's ordinary income rate. Mutual funds which are managed actively with a low turnover ratio reflect a buy and hold investment strategy while the mutual funds with high turnover ratios indicate an attempt to profit by a market timing approach.

3.1.4 Return

The money made or lost on an investment over a period of time is known as return. It is o calculated as a percentage or ratio of the original investment so that managers can measure and compare how well the investments performed. The amount of return depends on various things but the main driving force is risk. A return is the change in price on an asset, investment, or project over a period of time which can be represented in terms of price change or percentage change. A positive return represents a profit while a negative return marks a loss. Returns are annualized for the purposes of comparison, while a holding period return calculates the gain or loss during the entire period an investment was held. Real return accounts for the effects of inflation and other external factors, while nominal return is only interested in price change. Total return for stocks includes price change as well as dividend and interest payments. Several return ratios exist for use in fundamental analysis.

3.2 Research design

This research uses both the panel and cross-sectional data. As the mutual fund data is recorded for different month with respective variables for this study uses panel data and also the data is unbalanced panel since the mutual fund were introduced at different time period so the study also uses the cross-sectional data which is used to estimate the mutual fund return relationship with the independent variables.

This study is uses descriptive and casual-comparative design for evaluating the performance of mutual funds that are sampled for the study. Descriptive research design is used to obtain information concerning the current status of the selected phenomena and describe what exists with the respect to variables or condition in a situation. The purpose of this research design is to collect detailed factual information that describe existing phenomena, to describe the existing phenomena of the problem area, to identify problem or justify current conditions and practices, to make evaluations regrading on the basis of numerical facts and findings. Casual-comparative research design aims to investigate the possible cause and effect relationship of the variables. It observes existing consequences of one variable on other variable. It is also called 'ex-post facto' research which means

"from what is done afterward" that means it is prepared to investigate something after an event with a retroactive effect on the event.

3.3 Sample and sampling design

For this study, four mutual fund monthly samples have been taken for the study. The number of fund observation is taken according to fund age. The sample and number of observation is listed in the below Table 2.

Table 2

Sample and number of observation

Code	Mutual fund	Date of establishment	Observation
1.	Global IME Samunnat Scheme-1(GIMES1)	2016	53
2.	Nabil Equity Fund (NEF)	2016	45
3.	Laxmi Equity Fund (LEMF)	2017	38
4.	Citizens Mutual Fund-1 (CMF1)	2018	29

3.4 Nature and sources of data and the instrument of data collection

The data used in this study is secondary data.

3.4.1 Secondary Data

The data that are already collected through primary sources and made readily available for researchers to use for their own research is known as secondary data. It is a type of data that has already been collected in the past. Sources of secondary data include books, personal sources, journal, newspaper, website, government record etc. This research collected the necessary secondary data from the website of the respective mutual fund manager. The data were recorded from their monthly balance sheet.

3.5   Methods of analysis

This study employed various statistical tools to evaluate the performance of the sampled mutual fund. The statistical tools that are used for this study are mentioned in the following sub section:

3.5.1   Net asset value (NAV)

Net asset value is the basic, core and simplest operating concept in the context of all investment companies. Investors buy shares in investment companies, and ownership is proportional to the number of shares purchased. The value of each share is called net asset value (NAV). It can be calculated by the following equation:

$$Net\ Asset\ Value = \frac{Markert\ value\ of\ assets - Laibilities}{No.of\ Share\ outstanding}$$

3.5.2   Expenses ratio

Expenses ratio is the fee for the fund house for managing investor's mutual fund. Expense ratio is the cost as a percentage of NAV incurred by the mutual funds including operating expenses. It consists of fund management charges and all the other costs related to the fund management. It impacts investor's ultimate take home returns. Due to limited data source this study has not excluded the brokerage cost while calculating the expense ratio. It can be calculated by the following equation:

$$Expenses\ Ratio = \frac{Operating\ expenses(excluding\ brokerage\ cost)}{Total\ Net\ Asset\ Value}$$

3.5.3   Portfolio turnover ratio (PTR)

Portfolio Turnover Ratio indicates the frequency with which the fund's holdings have changed over the past one year. It measures how actively the portfolio managers changes its portfolio or buys and sells securities from its portfolio. Turnover is usually defined as the value of securities purchases or sold divided by the average NAV for given period.

Due to limited data source this study only included the purchase of the listed company shares. It can be calculated by the following equation:

$$Portfolio\ Turnover\ ratio = \frac{Minimun\ value\ of\ securities\ purchased\ or\ sold}{Total\ Net\ Assets\ value}$$

3.5.4 Jensen measure

The Jensen's measure is a risk adjusted performance measure that represents the average return on a portfolio or investment, above or below that predicted by the capital asset pricing model (CAPM), given the portfolio's or investment's beta and the average market return. The Jensen's measure is the difference in how much a person returns verses the overall market. It can be calculated by the following equation:

$$EAR_p = AR_f + (AR_m - AR_f)\beta_p$$

Where, EAR_p is Equilibrium average return

Difference between equilibrium average return and average return of the portfolio indicates superior performance of the fund. This is called as alpha (α).

$$Jensen's\ Ratio\ (\alpha) = AR_p - EAR_p$$

Where,

AR_f = Average risk free rate

AR_m = Average expected market return

β_p = Beta of portfolio

AR_p = Average portfolio return

3.5.5 Treynor ratio

The Treynor ratio is also known as the reward-to-volatility ratio. The Treynor ratio is a risk or return measure that allows investors to adjust a portfolio's returns for systematic

risk. A higher Treynor ratio result means a portfolio is a more suitable investment. It can be calculated by the following equation:

$$Treynor\ Ratio = \frac{AR_m - AR_f}{\beta_m}$$

Where,

AR_m = Average expected market return

AR_f = Average risk free rate

β_m = Beta of the portfolio

3.5.6 Sharpe Ratio

Sharpe ratio is used to evaluate the risk adjusted performance of a mutual fund. This ratio tells an investor how much extra return he/she will receive on holding a risky asset. The risk adjusted return happens to be the returns earned over and above the returns generated by a risk free asset like a fixed deposit or a government bond. The excessive returns are viewed in the light of the "extra risk" which an investor takes upon investing in a risky asset like equity funds. It can be calculated by the following equation:

$$Sharpe\ Ratio = \frac{AR_p - AR_f}{\sigma_p}$$

Where,

AR_p = Average rate of return

AR_f = Risk free rate

σ_p = Standard deviation of AR_p

3.5.7 Chi square test (χ^2)

A chi-square (χ^2) statistic is a test that measures how a model compares to actual observed data. The data used in calculating a chi-square statistic must be random, raw, mutually exclusive, drawn from independent variables and drawn from a large enough sample. Chi-square tests are often used in hypotheses testing. The chi-square

statistic compares the size any discrepancies between the expected results and the actual results. It can be calculated by the following equation:

$$\chi^2_c = \sum (O_i - E_i)/E_i$$

Where:

c=Degrees of freedom

O=Observed value(s)

E=Expected value(s)

CHAPTER IV

RESULTS AND DISSCUSSION

The study aims to evaluate the performance of the closed end mutual funds in Nepal. This chapter includes the presentation and analysis of the collected data. It intends to analyze the data collected from various sources and present the finding of the analysis. It implements various techniques to discover the performance of the mutual funds. It presents the results and findings based on descriptive analysis.

4.1   Analysis of data

The data was collected from the secondary source of data. This section take in the empirical investigation of the data that are collected form the various source. Sources of analyzed data are various websites, newspaper and government records. This research collected the necessary secondary data from the website of the respective mutual fund manager. The data were recorded from their monthly balance sheet.

4.1.1   Expense ratio and portfolio turnover ratio of mutual funds

Table 3

Average expense and average portfolio turnover ratio

Name	Average expense ratio	Average portfolio turnover ratio
GIMES1	0.0129	0.7344
NEF	0.0131	0.5099
LEMF	0.0125	0.8119
CMF1	0.0085	0.5149

Table 3 represents the four mutual funds from which CMF1 has the lowest expense ratio which is 0.0085. Lower expense ratios are more preferable than the higher expense ratio. So, the fund CMF1 is more preferable than other three funds on the basis of their expense ratios. As comparing the average portfolio turnover ratio of the mutual funds NEF has lowest portfolio turnover ratio. Higher the portfolio turnover ratio, higher the trading fee

are likely to be. So, among the mutual funds NEF having 0.5099 average portfolio ratios is more preferable than the other three funds. LEMF has 0.8119 portfolio turnover ratio which means it has high trading fees.
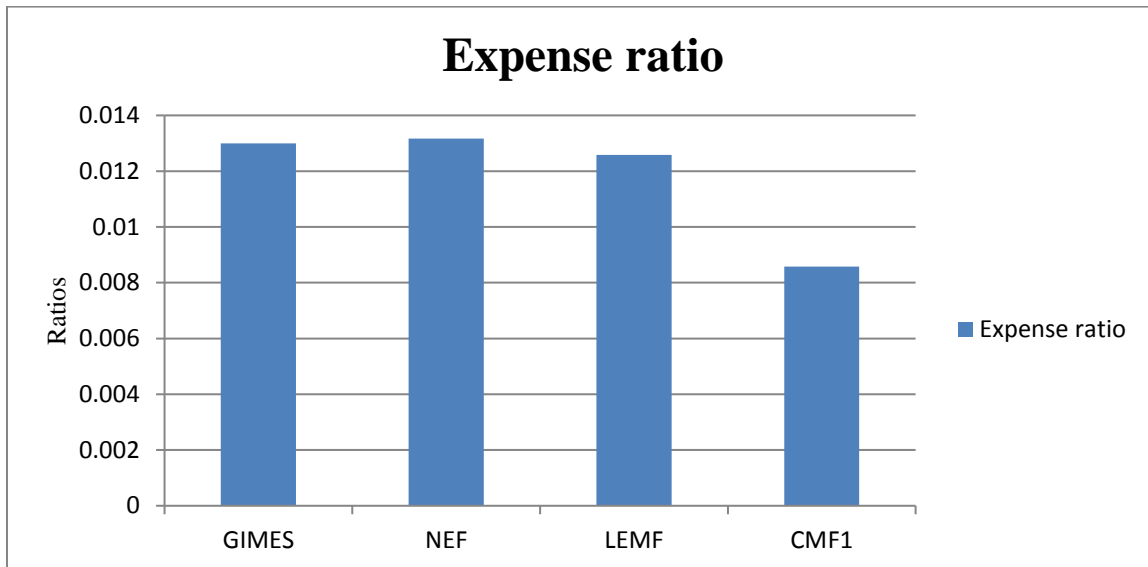

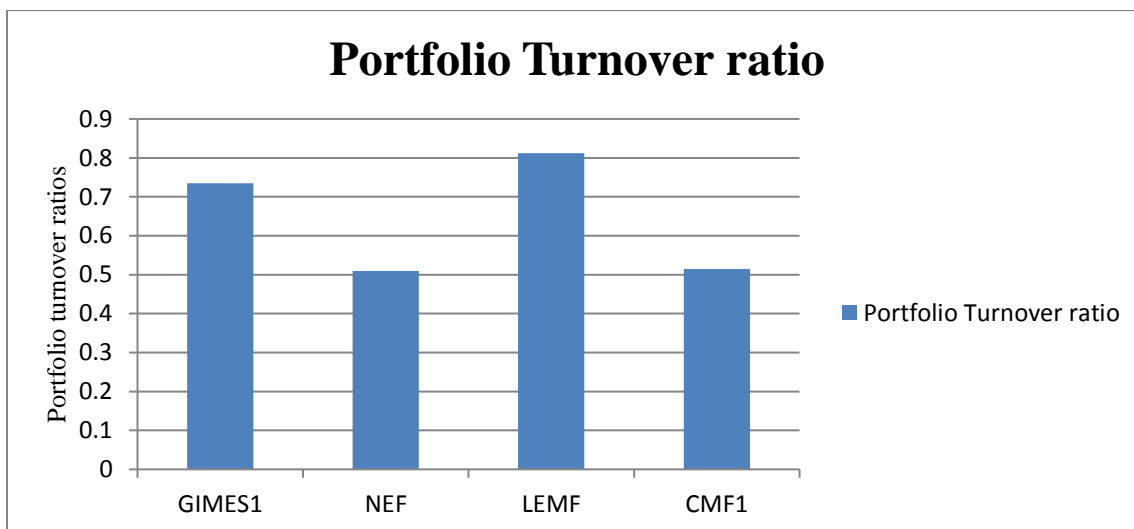*Figure5. Average expense ratio of mutual funds*

Figure6. Portfolio turnover ratio of mutual funds

4.1.2   Ranks of mutual funds

Table 4

Average NAV, issued date and average market price of mutual funds

Name	Average NAV	Issued Date	Average market price
GIMES1	9.0880	March, 2016	8.8800
NEF	9.1308	November, 2016	8.9800
LEMF	9.0406	June, 2017	8.3800
CMF1	10.5759	January, 2018	9.2600

Table 5

Ranks of mutual funds based on Average NAV, Age and Market price

Name	Average NAV	Age	Market price
GIMES1	3	1	3
NEF	2	2	2
LEMF	4	3	4
CMF1	1	4	1

The four mutual funds are ranked on the basis of collected and available information. NAV per share is equal to the total number of value of all the mutual fund's holdings minus liabilities divided by the fund's total number of outstanding shares on particular day. Average NAV of CMF1 is 10.5759 which is highest among the sampled mutual funds so it is ranked first position for average NAV. Likewise, average NAV of NEF is 9.1308, GIMES1 is 9.0880 and LEMF is 9.0406 so they are ranked second, third and fourth respectively. CMF1 is relatively new mutual fund when compared to other mutual funds whereas GIMES1 is older than rest of the sampled mutual funds.

Average market price is calculated by using last traded price from market. Average market price of the CMF1 is 9.26 which is higher than the other mutual funds. LEMF has

lowest average market price that is 8.38 which is much lower to par value of mutual funds. LEMF is ranked last position for average NAV and average market price.
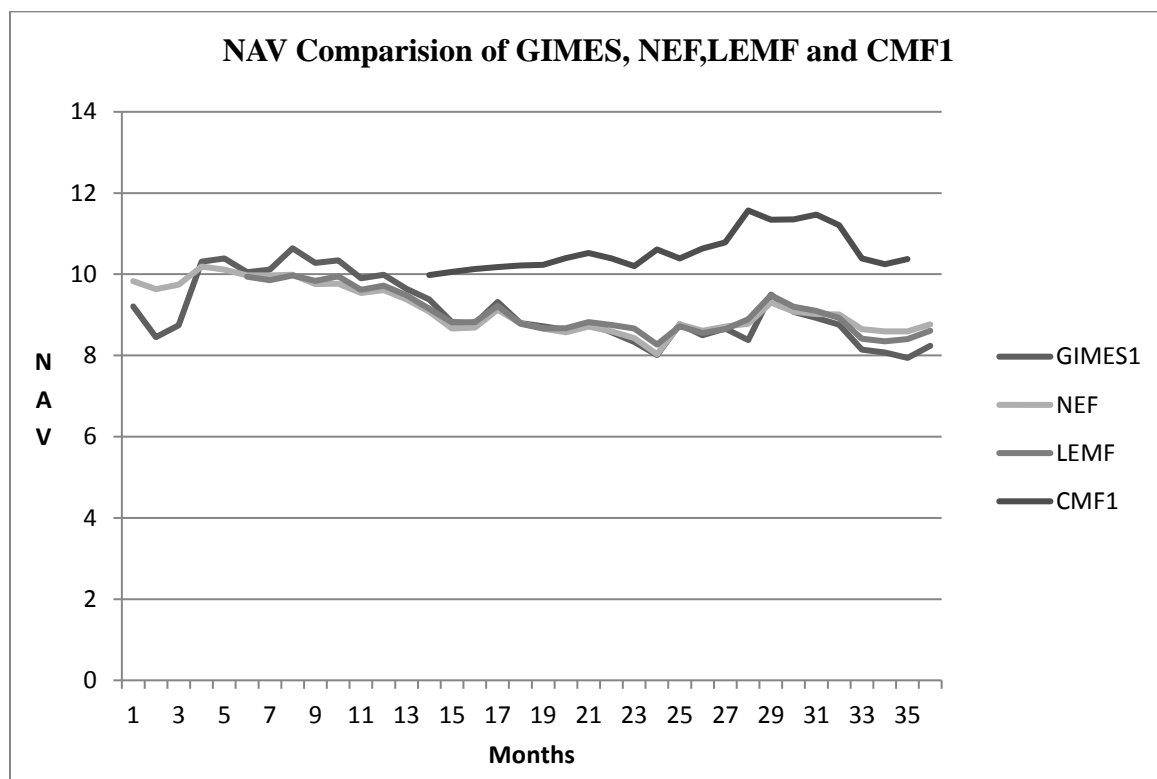
Figure7. GIMES, NEF and LEMF NAV move close to each other

4.1.3   Performance evaluation

Table 6

Performance evaluation on the basis of return and portfolio

S.N	Name	Average monthly Return on fund (ARp)	Average monthly Risk Free Return on fund (ARf)	Average monthly market Return on fund (ARm)	Risk (σp)	Risk of market Portfolio (σm)	Volatility β
1	GIMES1	9.0880	0.2611	8.8811	0.1294	1.0907	1.024

2	NEF	9.1308	0.2611	8.9800	0.5744	1.002	1.0170
3	LEMF	9.0406	0.2611	8.3800	0.5284	1.0854	1.0810
4	CMF1	10.5759	0.2611	9.2600	0.4913	0.4740	1.1500

Table 6 represents return and risk of the four mutual funds along with market return and risk. Form the table, its shows that the most funds are earning on average 9.4588 percent monthly return which is fair while comparing among the mutual funds. But if the monthly return of fund is lower than market return it is not a good monthly return. Since the monthly return of the above funds are greater than their monthly market return the funds performed well.

However, moderate volatility and risk of the mutual funds indicates that investors have benefited due to low risk on portfolio of monthly return against the market return but CMF1 mutual fund is more risk bearing fund than the market risk.

Table 7

Performance evaluation on the basis of Jensen measure

S.N	Name	AR_p	AR_f	AR_m	β_p	EAR_p	Jensen Measure
1	GIMES1	9.0880	0.2611	8.8811	1.0240	9.0879	0.00002
2	NEF	9.1308	0.2611	8.9800	1.0170	9.1282	0.00258
3	LEMF	9.0406	0.2611	8.3800	1.0810	9.0376	0.00297
4	CMF1	10.5759	0.2611	9.2600	1.1500	10.6098	-0.03393

Table 7 represents the performance of the mutual funds on the basis of Jensen measure. In the above table the three funds GIMES1, NEF, LEMF in Jensen measure has given positive value which means the portfolio has shown better performance up to market index whereas CMF1 has given -0.03393 negative result which means it has not shown

better performance up to market index. It is measureable way to determine whether a manager has added value to a portfolio or not.
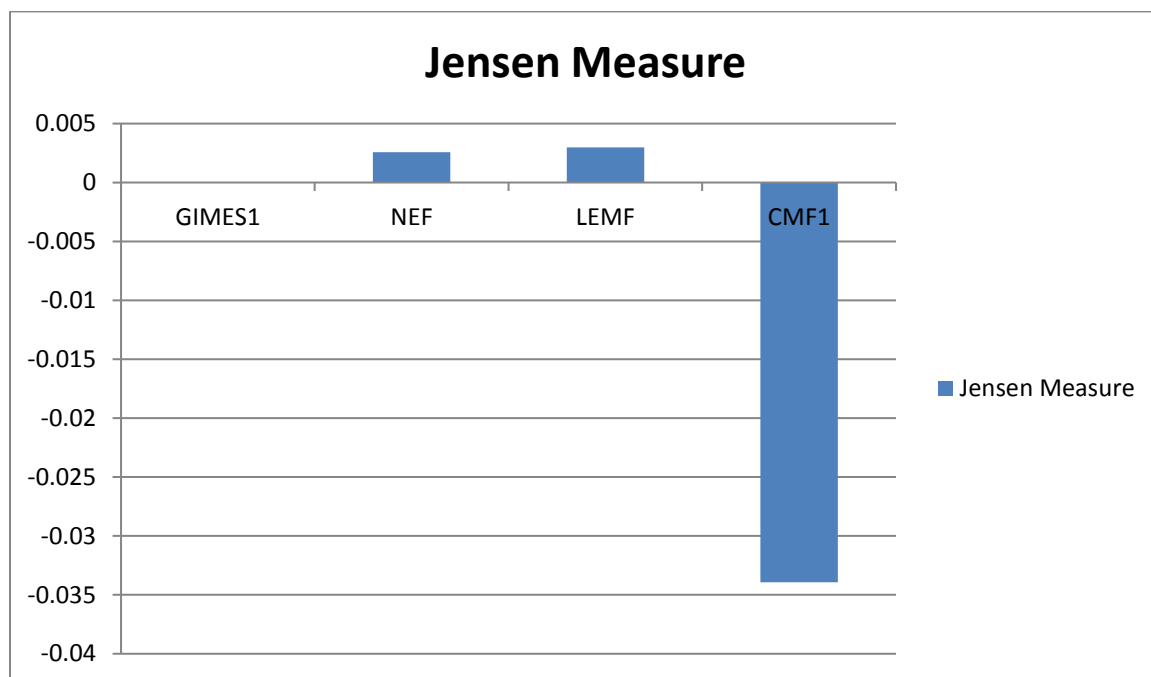

Figure8. Performance evaluation on the basis of Jensen Measure

Table 8

Performance evaluation on the basis of Treynor ratio

S.N	Name	AR_p	AR_f	β_p	Treynor ratio
1	GIMES1	9.0880	0.2611	1.0240	8.6200
2	NEF	9.1308	0.2611	1.0170	8.7214
3	LEMF	9.0406	0.2611	1.0810	8.1216
4	CMF1	10.5759	0.2611	1.1500	8.9693

Table 8 represents Treynor ratio which is calculated in order to evaluate the performance of four mutual funds. The Treynor ratio measures portfolio performance that adjusts for systematic risk and part of the capital asset pricing model. The funds GIMES1, NEF, LEMF, CMF1 has given positive results of Treynor ratio which means the investment has performed better than a risk free instrument.
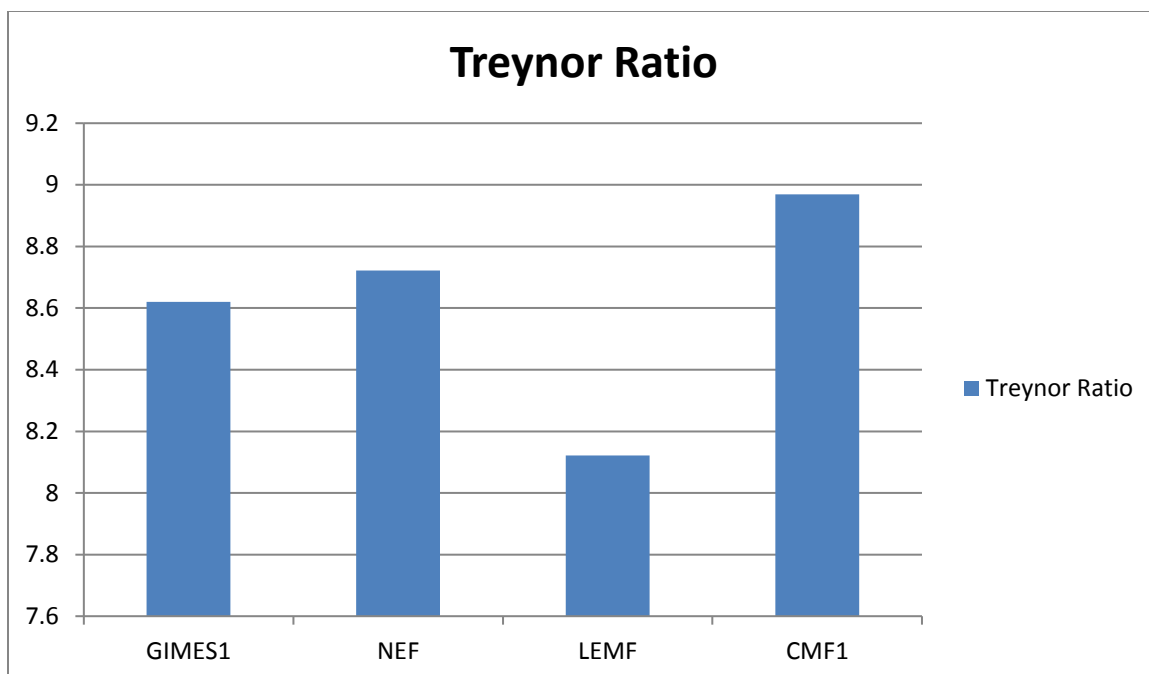
Figure9. Performance evaluation on the basis of Treynor ratio

Table 9

Performance evaluation on the basis of Sharpe ratio

S.N	Name	AR_m	AR_f	(σp)	Sharpe ratio
1	GIMES1	8.8811	0.2611	0.1294	66.6048
2	NEF	8.9800	0.2611	0.5744	15.1780
3	LEMF	8.3800	0.2611	0.5284	15.3636
4	CMF1	9.2600	0.2611	0.4913	18.3015

Table 9 represents Sharpe ratio which adjusts return with the standard deviation of the portfolio. Greater the result of Sharpe ratio the more attractive the risk adjusted return. GIMES1 has result of 66.6048 which is greater Sharpe ratio that means it has more attractive risk adjusted return than other funds whereas there is no vast difference among the results produced by the NEF, LEMF, CMF1.
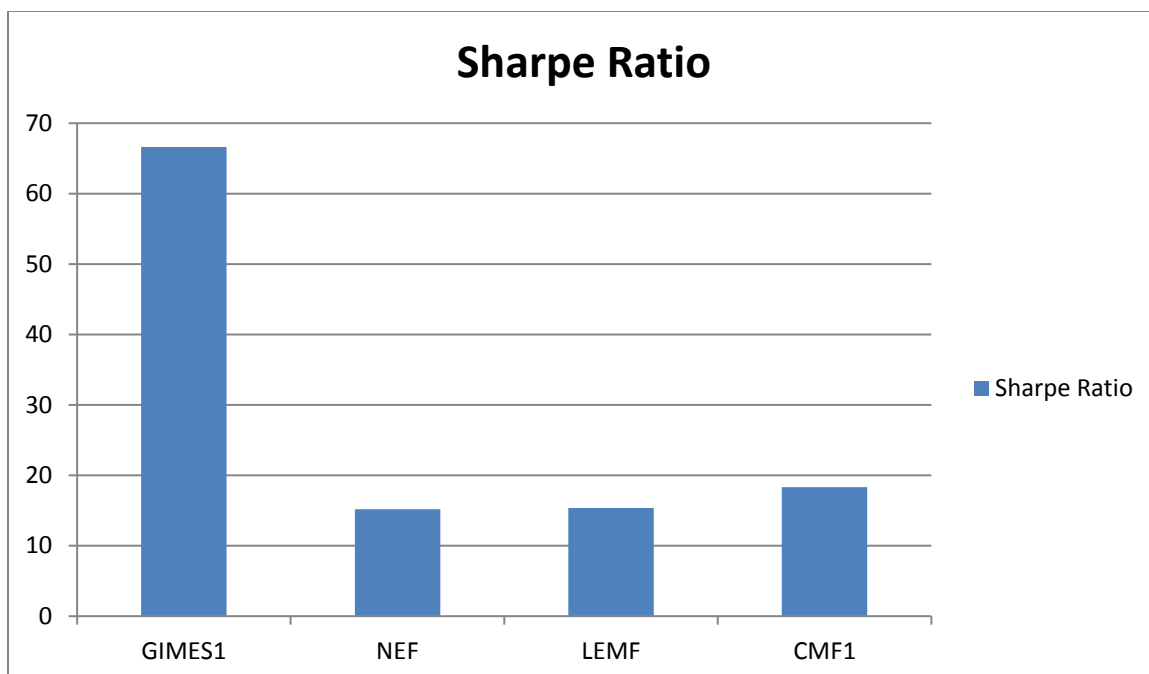
Sharpe Ratio

Figure showing a bar chart titled "Sharpe Ratio" with bars for GIMES1 (~67), NEF (~15), LEMF (~15), CMF1 (~18).

Figure10. Performance evaluation on the basis of Sharpe Ratio

4.1.4   Chi Square test for hypotheses

Table 10

Chi square test

S.N.	Variables	Result	Remarks
1.	Market price and NAV	0.9977	$P_{value} > 0.05$=Accepted
2.	Average market return and Risk	0.9569	$P_{value} > 0.05$=Accepted
3.	Expenses and NAV	0.5522	$P_{value} > 0.05$=Accepted

Table 10 represents the Chi square test for hypotheses. If the value of P is greater than the significance level that is 0.05 then the null hypotheses is accepted and if the P value of the hypotheses is less than significance level which is 0.05 then the null hypothesis is rejected. The calculated Chi square test resulted the P value of all three hypotheses greater than 0.05 so, the entire hypotheses is accepted and none of them are rejected.

4.2   Discussion

The purpose of the study is to evaluate the performance of closed end mutual funds by implementing various evaluating techniques. This study used mean, standard deviation, NAV, Jensen measures, Treynor ratio and Sharpe ratio. Under which the funds with higher NAV are more attractive for investment. CMF1 has higher NAV value as comparing to other three sample mutual funds. Similarly, Jensen measures is also referred as alpha if the alpha is positive, the portfolio has performed better and if the alpha is negative it has not shown performance up to the market index. In this study, LEMF has higher alpha value which means it has performed better than other three mutual funds and higher the Treynor ratio result means a portfolio is more suitable investment. If the result is negative it means the investment has not performed better than risk free instrument. So, CMF1 has performed better and suitable investment Sharpe ratio is the return generated over the risk free rate, per unit. If the Sharpe ratio result is negative risk free rate is greater than the portfolio's return. In the study, the Sharpe ratio of GIMES1 has higher ratio value which means it is suitable for investment and other three mutual funds are also good for investment as the value of the ratio is greater than one.

The purpose of the study is to evaluate the performance of the sampled mutual funds under various techniques. Every mutual fund taken for study has not shown the same results for the different techniques used. Every sampled mutual fund has shown better performance according to the techniques used. CMF1 has shown better performance according to its average NAV and Treynor ratio whereas LEMF has shown better performance result according to Jensen measure and GIMES1 has performed better according to Sharpe ratio. Similarly, average expense ratio of NEF is higher than other sampled mutual funds and average portfolio turnover ratio of LEMF is higher than other mutual funds. Lower expense ratio and portfolio turnover ratio are preferable than higher ones which means CMF1 is preferable in terms of expense ratio and NEF is preferable in terms of portfolio turnover ratio. The mutual fund NEF has higher expenses ratio but lower portfolio turnover ratio. The different evaluation technique gives the different output and results to evaluate the performance of the mutual funds.

The study performed by the Otten and Bams (2002) found that the expenses ratio and age are negatively related to risk adjusted performance while fund assets are positively related. So, in this study higher expense ratio and portfolio turnover ratio has negative effects on the investment.

The study conducted by the Bajracharya (2016) concluded that negative Sharpe ratio is means the inferior performance against the market return and the high value represents the superior performance so as per the analysis performed in this study every sampled mutual fund showed the positive value but GIMES1 showed the highest valued among the funds which means GIMES1 displayed the superior performance than other three sampled mutual funds.

Dhandayuthapani and Arunpratheep (2018) the study concluded that it provided some ideas on mutual fund performance to assist the common investors in taking the rational investment decisions for allocating their resources in correct mutual fund scheme but this study showed different values in different techniques used for evaluating the performance of the mutual funds. Every technique resulted superior value for different sampled mutual funds. The result generated by this study showed every fund is superior depending upon the techniques used for the evaluation of the funds.

Dave and Raval (2018) study resulted that for better decision making the small investors should include average return over the investment period, standard deviation and Sharpe index as parameters in their decision matrix. Similarly, this study also showed the different values in different techniques which mean the investor should consider other factors for the investment decision and not to solely depend upon the techniques for the investment decision.

CHAPTER V

SUMMARY AND CONCLUSION

5.1 Summary

The purpose of the study was to evaluate the performance of the closed end mutual funds of Nepal and to compare their performance. This study has taken four closed end mutual funds as the sample for the study. A mutual fund is a financial intermediary that receives money from shareholders and then invests those funds in diversified portfolio of securities. Mutual funds are operated by professional money managers, who allocate the fund's assets and attempt to produce capital gains or income for the fund's investors. As above mentioned the objective of this study is to evaluate the performance of the closed end mutual funds and to compare their performance on the basis of their result. The data for the study is collected from the various websites of the mutual funds and from Nepal stock exchange market. This study employs various tools and techniques to evaluate the performance. The techniques used for the study is NAV, expense ratio, portfolio turnover ratio, Jensen measure, Treynor ratio and Sharpe ratio. The tool used to test hypotheses is Chi square test. On the basis of the data analysis major finding of the study are as follows:

1. There is no significance difference between market price and NAV as the P-value is 0.9977. There is no significance difference between return and risk as the P-value is 0.9569. There is no significance difference between expenses and NAV as the P-value is 0.5520. Since all the P- values are greater than 0.05 which is significance level, so there is no significant difference.

2. The average expense ratio of CMF1 is 0.0085 and average portfolio turnover of NEF is 0.5099 is lower than the other sample mutual funds which concluded that these two funds are good for investment on the basis of expense ratio and portfolio ratio.

3. NAV of CMF1 is 10.5759 which is highest among the sample mutual funds and its having higher NAV value is considered to be the firm that have performed good in the market. As CMF1 is the relatively new in comparison to other mutual funds.

4. Under Jensen measure GIMES1, NEF, LEMF has the value of 0.00002, 0.00258, 0.0029 respectively but CMF1 has the value -0.03393 which is negative. So, according to Jensen measure the fund which have positive value have performed up to market index and the fund which have negative value have not performed up to market index which means LEMF has performed up to market index as it has highest value.

5. Under Treynor ratio GIMES1, NEF, LEMF, CMF1 has the positive value 8.6200, 8.7214, 8.1216 and 8.9693 respectively. Fund having highest positive value means investment has performed better than risk free instrument which shows CMF1 has performed better than other three funds.

6. Under Sharpe ratio GIMES1, NEF, LEMF, CMF1 has 66.6048, 15.1780, 15.3636, and 18.3015 respectively. Greater the result of Sharpe ratio the more attractive the risk adjusted return. GIMES1 has result of 66.60485 which is greater Sharpe ratio that means it has more attractive risk adjusted return than other funds

5.2   Conclusion

The study aims to evaluate the performance of the mutual funds and to compare their performance. The study took the sample of the four closed end mutual funds having different issued date. The data for the study was collected from the secondary source that is various websites. The data was evaluated by using Chi square test, NAV, expense ratio, portfolio turnover ratio, Jensen measure, Treynor ratio and Sharpe ratio. The study also includes various reviews of the literature done under the topic of mutual funds. Many reviews were from other countries those having good market for the mutual funds.

This study concludes that after performing all the analysis, the different evaluation technique gives the different output and results to evaluate the performance of the mutual funds. This study also showed the different values in different techniques which mean the investor should consider other factors for the investment decision and not to solely depend upon the techniques for the investment decision.

5.3   Implications

There are various factors that contribute in the performance of the mutual funds. This study focuses on some of the factors affecting the performance and factor affecting the investment decision of the investor. The result of this study will have important implications and it is believed to be helpful for investor those who are interested to invest on mutual funds. This study also helps to clear the mindset that only the evaluation techniques might not be sufficient during making the investment decision, one should consider and study other various elements involved in the mutual fund before investing in the mutual funds.

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