Chapter 1
INTRODUCTION
1.1 Introduction

The economic development of a nation largely depends upon its effective and efficient utilization of scarce resources. One such scarce resource is capital. Capital creation is made possible through accumulation of savings. The surplus entities in the economy save and invest their surplus in various financial assets which in turn is utilized by the deficit entities for investing in various real assets leading to value creation. The financial system of the nation facilitates capital creation by linking the surplus and the deficit entities through capital markets, financial services and financial instruments.

The most important among the surplus entities or savers is the Individuals of the nation. Individuals save and invest a part of their earnings with the hope of earning a positive return on their investment, which in turn enhances their future consumption possibilities. The financial system provides the investors a number of investment alternatives with varying amounts of risk and return. Investors make a choice out of the available alternatives based on their investment objectives which include their return aspiration and risk tolerance. An efficient financial system should provide its investors a range of investment alternatives to suit their investment objectives. This includes alternatives with varying maturities and varying risk – return characteristics. In other words the financial system should enable creation of risk capital on one end and risk less capital on the other. In this regard, Mutual Funds are a good fit into the financial system, as they enable capital creation across the entire spectrum of risk.

Mutual Funds are collective investment vehicles which represent an indirect method of investing. A mutual fund is an entity which provides the services of creating and managing public investment portfolios. A mutual fund collects small amounts of money from a large number of likeminded investors having similar investment objectives. The money is pooled and invested into a portfolio of assets depending on the investment objective to be achieved. The returns earned from the invested pool of assets after deducting the investment management charges is divided among the investors based on their invested amount.
Mutual Funds provide a number of advantages to its investors as compared to other direct investments. One of the advantages of investing in mutual funds is the advantage of selecting a readymade portfolio of assets to suit the investment objectives of the investor. Similarly another distinct advantage is the advantage of instant diversification. As mutual funds pool a large amount of money, they have the ability to create and hold a large portfolio of assets, thereby providing the investor the benefit of instant diversification from un-systemic risks which include business risk, credit risk and liquidity risk.

Mutual Funds are classified into various types based on a number of criteria’s. One such classification criteria is the investment pattern of the fund. If the fund invests a larger portion of its assets into equity and related securities, then it is classified as Equity Mutual Funds. The investment objective of such a fund is normally to provide the investor with capital appreciation over a longer period of time. On the other hand if a larger portion of the assets is invested into debt and related securities, then the fund is classified as a Debt Mutual Fund. The investment objective of a debt mutual fund is to generate regular and consistent income to the investor. Equity Mutual Funds are one of the important sources of pooling large amounts of risk capital from large number of small investors. Equity mutual funds could be classified as either diversified funds or undiversified funds. Diversified Equity Mutual Funds are a type of equity mutual funds which invests the fund corpus, in equity shares and related instruments of companies across industry sectors and thereby providing significant diversification in terms of business risk or company specific risk to the overall portfolio. Undiversified funds also known as Sector funds, invests the entire fund corpus into equity shares and related instruments of a particular industry or sector or related sectors. As sector funds do not provide diversification from business risk, they are considered to be undiversified funds.

One of the means adopted by Government of India, to encourage investments into particular types of assets, is by providing individual investors with Income Tax incentives. Income Tax incentives provided for investments in general can take different forms like deduction, exemption and rebate. Deduction benefit allows the investor to deduct the amount of eligible investment made during the year, from his gross total income, thereby reducing the taxable income and the tax payable thereon. Exemption benefit, on the other
hand is provided on the returns earned out of an eligible investment. Investment incomes, to the extent they are exempt, do not form a part of taxable income thereby leading to a lesser taxable income. This means that exempted investment income does not attract any income tax. Rebate is another form of tax incentive, which reduces the total income tax payable, by a certain amount, which normally is calculated as a percentage of the eligible investment made during the year.

In order to encourage individual investors to develop equity investment culture, the then finance minister Shri. S.B.Chavan, in his budget speech on 28th February 1989, introduced a new mutual fund scheme called the ‘Equity Linked Savings Scheme’ (ELSS). The ELSS funds incentivized the small investors with a lower income tax obligation, depending on the amount invested in ELSS funds, during the year. ELSS mutual funds therefore are conceived to be one of the means of reducing the income tax burden of the investor and so appropriately, referred to as Tax Saving Mutual Funds. For an initial period till 31st March 1991, ELSS investments were eligible for deduction benefit of ₹ 10,000. From the financial year 1991-92 onwards, the tax incentive was modified to a tax rebate benefit, under Section 88 of the Income Tax Act, with ₹ 10,000, remaining the eligible investment amount. From the financial year 2005-06, the tax incentive reverted back to deduction benefit, under Section 80C of the Income Tax Act, with an eligible investment amount going up to ₹ 1,00,000. The eligible investment for deduction benefit from the financial year 2014-15 was further increased to ₹ 1,50,000.

ELSS funds are basically diversified equity mutual fund schemes. However there are two distinct differences between the ELSS Schemes and Diversified Equity Mutual Fund Schemes. The differences are solely due to the qualifications placed by the statute in terms of funds investment pattern and investor’s investment lock in period. As Equity mutual funds provide distinct Income Tax exemption benefit under the Income Tax Act, to differentiate such equity mutual fund schemes with other fund schemes, the Income Tax Act Sec 115 T(b) ii, defined an equity mutual fund scheme as one which invests 65 percentage ( 50 percentage till 31st May 2006 ) of investable funds of the scheme in equity shares and related instruments. This implies that to qualify as equity mutual funds and derive the tax benefits assigned, the equity allocation of such fund should be a
minimum of 65 percentage of the investible assets. On the other hand, ELSS funds are defined by Notified Scheme Regulations, as one that remains invested in equity shares and related instruments, to the extent of 80 percentage of its investible assets. Higher equity allocation is one of the marked differences between ELSS funds and Equity funds.

Tax saving investments, normally, is those that supply long term capital into the financial system, which in turn can ignite economic development. Tax benefit is an inducement given by the Government, to the investors to lure investors into such long term investments. As the objective is obtaining long term capital, the Government, as quid pro quo for the tax deduction or rebate benefit provided to investors, places certain restrictions on the investor’s withdrawal of the invested amount from such investments. This means that all tax saving investments that provide a deduction or rebate benefit, necessarily have a lock in period. Lock in period implies that the investor is not allowed to redeem or sell or withdraw the amount or pledge such investment for a particular period of time. ELSS funds being tax saving investments providing tax deduction benefit (rebate benefit till 31st March 2005), has a lock in period of 3 years from the date of investment. So investors into ELSS fund schemes, have to remain invested in the scheme for a minimum period of 3 years from the date of investment. Equity mutual funds on the other hand do not have any lock in period. Lock in period of the invested amount therefore is another major difference between ELSS funds and Equity Funds.

ELSS mutual funds, except for the two differences mentioned above, are similar to Diversified Equity Mutual funds in terms of tax exemption benefit on the returns earned from the investment and the investment universe into which the fund corpus is invested. Therefore Diversified Equity Mutual Funds are a good benchmark to compare the investment performance of ELSS Fund schemes.

Investors have a large universe of investments into which they could invest. The investment choice thereon depends on the benefits that they would derive from it, of which the most important being its return potential. Investors naturally look at the historical or ex post return performance to gauge the return that the investment provided in the past, and use this as the base for their future expectation of returns. As investments undertake a
number of risks in order to generate returns, investment performance evaluation necessarily has to consider both the aspects of both risk undertaken and return generated. So investment performance evaluation has utmost importance in the investment selection process.

Investment selection process involves identifying a number of investments with certain defined benefit characteristics and choosing among them the one that fits the investment objective of the investors return aspiration and risk tolerance. Investors fall back on historical investment performance evaluation to base their return aspiration. Risk tolerance on the other hand is more complex as it includes aspects of risk taking ability and willingness. An investor’s ability to undertake risk is dependent on various extraneous factors like age, income, number of dependents, liquidity requirements etc. However an investor’s willingness to undertake risk is more psychological wherein the investor’s perception about the investment will determine his investment preference. Factors such as investment knowledge and experience could influence the investors perception about the investment and thereby his willingness to undertake risk.

ELSS mutual fund is one among a number of investments that provide tax deduction benefit under Sec 80 C of the Income Tax Act. The investment universe in this category is diverse with a number of investments providing fixed returns with least amount of risk like 5 Year Tax Saving Bank Fixed Deposits, National Savings Certificate, Public Provident Fund etc. on one end and ELSS funds with market based returns and high element of risk on the other. Investor’s choice of ELSS funds from this eligible investment universe is therefore dependent upon their perceived return expectation and their perception towards the inherent risk. These two aspects could determine their preference for the investment.
1.2 Statement of the Problem

ELSS mutual fund, when proposed in the financial budget for the year 1989-90, was envisaged by the Government as the means of inducing small individual investors to invest into equity markets. The then finance minister in his budget speech clearly acknowledged that the flow of savings of small investors into the capital market was mainly into fixed interest bearing instruments. As industrial development also required risk capital in the form of equity, ELSS funds were introduced to stimulate the flow of personal savings into equity. It was also the considered opinion of the Government, as reflected in the budget speech of 1991-92, that for small individual investor’s mutual funds are more suitable investment vehicles rather than direct ownership of shares.

ELSS funds were floated by Asset Management Companies in the year 1990-91 and from then on have been in existence with a history of 23 years. Although there have been several changes over these years with regard to the nature and extent of tax benefit, it becomes very pertinent to make an appraisal of the investment, in terms of its achieving the objective for which it was introduced.

ELSS mutual fund basically is a tax saving investment. ELSS fund scheme provides the investor currently, with a tax deduction u/s 80 C of the Income tax Act to the extent of ₹ 1,00,000 per year (to be read as ₹ 1,50,000 from the year 2014-15), towards investment made during the financial year. In this regard, it is important to consider the fact that there are a number of other investments, which provide similar tax deduction benefit to the investor as ELSS funds. So the question arises as to the preference of the investor for ELSS funds vis-à-vis other tax saving investments.

ELSS funds are a type of Diversified Equity Funds except for the differences in percentage allocation to equity and investment lock in period. ELSS funds by regulation are required to invest 80 percentage of its investible corpus in equity shares and related investments, as against 65 percentage (50 percentage till May 2006) in Equity funds. Similarly, investments into ELSS funds get locked in for a period of 3 years, as against no lock in
period for Equity funds. Higher equity allocation implies higher risk – reward expectation. Similarly a lock in period of 3 years also enhances the risk of the investor and thereby enhances the risk premium expectation from the investment. Simply said, a higher equity allocation and a 3 year lock in period, make the ELSS investments apparently more risky when compared to Diversified Equity funds and thereby lead to a higher investor return expectation. So the question that arises from the investment performance point of view is whether ELSS funds provide a better risk adjusted return performance as compared to Diversified Equity Mutual funds.

Mutual funds in general are considered to be relative return providers. Relative return implies that the performance is benchmarked against a defined market index. All mutual fund schemes have a specified benchmark market index against which its investment performance ought to be compared. The fund manager’s constantly strive to outperform the specified benchmark market index. In an up market, the effort is to provide returns greater than the market index and in down market, the effort is to lose lesser than the market index. ELSS funds are no exception to this relative return category. All ELSS fund schemes too have specified market index benchmarks and therefore a comparison of investment performance with benchmark market indexes is essential for performance evaluation.

Empirical research literature reviewed deals with the portfolio performance of Diversified Equity Funds considering ELSS funds as a part of Diversified Equity Funds. Existing empirical research literature does not make any distinction between ELSS funds and other Diversified Equity Funds. There a number of studies available on the performance of ELSS funds with the performance evaluation benchmarked only against a single market index. So a gap exists with regard to the empirical investment performance evaluation and benchmarking the performance of ELSS funds as against other Diversified Equity funds and other Market Indexes. This comparison of investment performance is relevant from the investor perspective to understand the efficiency with which the funds are managed by ELSS funds and also the additional risks if any that are being undertaking.
Empirical research is also available on the perception of investors towards mutual fund investments in general. However, a gap exists in particular on the perception of investors towards ELSS funds as compared to other Diversified Equity funds and more importantly the preference of investors towards ELSS funds in comparison with other Tax saving investments.

1.3 Significance of the Study

Equity Mutual funds are considered to be a good means for a small individual investor, investing into equity markets, as it provides instant diversification from business risk. Equity Mutual funds also enable efficient allocation of individual savings into productive assets by providing the financial system with a pool of risk capital. In order to encourage such investments, the Government in the year 1989-90 introduced ELSS Mutual Funds.

ELSS mutual funds are in fact a type of Diversified Equity Mutual Funds, which provide income tax incentive to individuals, for investments made into the fund during the financial year. ELSS funds invest a minimum of 80 percentage of the investible assets into equity shares and other related assets. As the investment provides a tax deduction, the invested amount gets locked in for a period of 3 years from the date of investment. ELSS mutual funds as a retail investor tax saving investment have been in existence for over 23 years. So it is appropriate to study the investor’s awareness and perception towards ELSS plans to know if the purpose for which it was floated by the Government is being fulfilled.

Individual investors, in order to avail Tax Benefits under Section 80C of the Income Tax Act, have to make a choice between a number of investments including ELSS funds. Investor’s preference for ELSS funds naturally depends on the investors understanding of its risk – reward attributes. For an investor to choose ELSS plan, he needs to be certain that the higher element of risk undertaken by the fund would lead to a higher amount of return over a long time horizon. Ignoring the tax deduction, one of the means to evaluate the above is by analyzing whether ELSS funds provide a higher risk adjusted return as compared to Diversified Equity funds and Benchmark Market Indexes for a given time
horizon of investment. This awareness regarding the investment performance with convincing empirical evidence can make ELSS plan a preferred investment of retail individual investors.

This study tries to find answers to a number of questions that concern all the stakeholders of ELSS investments which include the Investor, Asset Management Company and the Government.

The study’s significance lies in finding answers to the following questions from an investor perspective, as this could significantly influence their perception and preference towards ELSS investment:

1) Do ELSS funds provide returns commensurate with the risk that is undertaken?
2) Is the investment performance of ELSS Funds superior to Diversified Equity Mutual Funds?
3) Is the investment performance of ELSS Funds superior to benchmark Market Indexes?
4) Are there any additional risks in investing in ELSS funds as compared to Diversified Equity Funds?

The study also tries to analyse from the Asset Management Company perspective, the following, so that it could help the AMC to position and market the ELSS funds:

1) Is there enough awareness among investors regarding ELSS as a Tax saving scheme?
2) What is the perception of the investor towards ELSS funds?
3) What is the preference assigned by the investor to ELSS funds as against other Tax saving investments?
4) Do investors perceive a higher risk investing in ELSS funds as compared to Diversified Equity Funds?
5) Are existing investors satisfied with the performance of ELSS funds?
6) What are the factors that influence the investment decision of the ELSS investor?
The significance of the study also lies in providing answers to some of the questions that the Government has, to make necessary changes, in the ELSS regulations, so as to make it more attractive to the investor and at the same time serve the purpose for which it was launched:

1) Is a 3 Year lock in period appropriate?
2) Is a dedicated deduction for ELSS funds under Sec 80C help in attracting more investments?
3) Is the differentiation between Diversified Equity Mutual Funds and ELSS mutual funds justified?
4) What other changes to ELSS Regulations can make them more attractive?

1.4 Scope of the Study

The study tries to evaluate ELSS fund investment performance and ELSS fund investor perception. Investment performance is evaluated for a period of 13 years from Years 2000-01 to 2012-13. In order to evaluate the investment performance, the entire universe of ELSS funds, consisting of 43 funds (with a minimum track record of 3 years) is considered. As the study deals with the investment performance of the fund, only Growth option plans are considered. For comparing the ELSS fund performance, 12 top diversified equity schemes across 9 fund houses are considered. Performance is also benchmarked against 7 market indexes, which are being used by individual ELSS funds as their benchmarks.

In order to study the investor perception, a survey of Investors from Bengaluru and its suburban area is conducted. Investors for this study are classified into two groups. One, those who have investment experience in ELSS funds and two, those who have not invested in ELSS funds but have been investing in other tax saving investments.
1.5 Objectives of the Study

There are two facets in an investment’s evaluation. The first is the investment’s performance appraisal with regard to the risk undertaken and return provided. The other is about the perception and preference of the investor towards the investment. The objectives of this study are based on both these facets of ELSS funds which are Investment Performance and Investor Perception.

The main objectives of this study are:

1) To compare and evaluate the investment performance of Equity Linked Savings Scheme mutual funds (Growth) plans with other Diversified Equity mutual funds (Growth) plans.

2) To compare and evaluate the investment performance of Equity Linked Savings Scheme mutual funds (Growth) plans with relevant Benchmark Market Indexes.

3) To identify the additional risks if any, involved in investing in Equity Linked Savings Scheme (Growth) plans as compared to Diversified Equity Funds (Growth) plans.

4) To analyse the risk-reward perception of individual retail investors towards Equity Linked Savings Scheme mutual funds as compared to other Diversified Equity mutual funds.

5) To analyse the investor’s perception and preference towards Equity Linked Savings Scheme mutual funds as compared to other Tax Saving Investments.
1.6 Hypotheses of the Study

The Hypotheses for the study is as follows:

H$_{01}$ = There is no significant difference in the average Sharpe Ratio of ELSS (Growth) funds and Diversified Equity (Growth) funds.

H$_{1}$ = There is a significant difference in the average Sharpe Ratio of ELSS (Growth) funds and Diversified Equity (Growth) funds.

H$_{02}$ = There is no significant difference in the average Sortino Ratio of ELSS (Growth) funds and Diversified Equity (Growth) funds.

H$_{2}$ = There is a significant difference in the average Sortino Ratio of ELSS (Growth) funds and Diversified Equity (Growth) funds.

H$_{03a}$ = There is no significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE Sensex.

H$_{3a}$ = There is a significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE Sensex.

H$_{03b}$ = There is no significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE 100 Index.

H$_{3b}$ = There is a significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE 100 Index.
$H_{03c} =$ There is no significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE 200 Index.

$H_{3c} =$ There is a significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE 200 Index.

$H_{03d} =$ There is no significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE 500 Index.

$H_{3d} =$ There is a significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on BSE 500 Index.

$H_{03e} =$ There is no significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on NSE Nifty.

$H_{3e} =$ There is a significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on NSE Nifty.

$H_{03f} =$ There is no significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on NSE 100 Index.

$H_{3f} =$ There is a significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on NSE 100 Index.

$H_{03g} =$ There is no significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on NSE 500 Index.

$H_{3g} =$ There is a significant difference in the average Jensen’s Alpha of ELSS (Growth) funds and Diversified Equity (Growth) funds based on NSE 500 Index.
H04a = There is no significant difference in the Investors perception of risk in case of ELSS funds as compared to Diversified Equity funds.

H4a = There is a significant difference in the Investors perception of risk in case of ELSS funds as compared to Diversified Equity funds.

H04b = There is no significant difference in the Investors perception of expected return in case of ELSS funds as compared to Diversified Equity funds.

H4b = There is a significant difference in the Investors perception of expected return in case of ELSS funds as compared to Diversified Equity funds.

H05 = There is no significant difference in the Investors preference towards ELSS funds as compared to other Tax saving investments.

H5 = There is a significant difference in the Investors preference towards ELSS funds as compared to other Tax saving investments.

1.7 Research Design

1.7.1 Data Base

The study has been done using data collected from both Primary and Secondary sources. For objectives 1 to 3, secondary data is used and for objective 4-5 primary data is used.

Primary data has been collected from a sample of 532 individual investors consisting of two groups, one set of respondents having investment experience (hereinafter called ‘Investor’ category) in ELSS mutual funds as well as other tax saving investments and another set of respondents investing only in other tax saving investments but not in ELSS funds (hereinafter called ‘Non-Investor’ category).
Secondary data consisting of Net Asset Values (NAV) of mutual fund schemes is obtained from a private mutual fund database provider called ACE MF. The market index values have been obtained from the official websites of National Stock Exchange of India (NSE) and Mumbai Stock Exchange (BSE). Other secondary data is collected from publications of SEBI, AMFI, RBI, other websites, journal publications and periodicals.

1.7.2 Methods of collection of Primary Data

An important component of this study is the Investor’s perception towards ELSS funds. For achieving this objective, the survey technique was adopted, with two structured questionnaire’s one for Investor category and another for Non- Investor category (Appendix 1 and 2). The total sample size considered is of 532 investors of tax savings schemes u/s 80C of the Income Tax Act. This sample consists of two types of investors, those who had an investment experience in ELSS funds and those who invested in other tax saving investments but not ELSS funds. The number of respondents is 382 for the former (Investor category) and 150 for the later (Non Investor category). The sampling method used is purposive sampling. Purposive sampling is considered to be a non-probability sampling used for obtaining qualitative information, by selecting respondents (investors in ELSS funds and investors in other tax saving funds), for answering the research questions. All the respondents are residents of Bengaluru and its sub-urban area. The data is collected through a survey using structured questionnaire from individual investors during the period 1st March 2014 to 31st March 2015. Investors were met in person for the purpose of the survey, by visiting office complexes, mutual fund offices and investor seminars. Investor references were also received from fund distributors and personal contacts.

1.7.3 Pilot Study

A pilot study with a sample size of 50 was conducted to test whether the questions in the survey were appropriate and whether the respondents are able to follow the directions given in the questionnaire. Based on the pilot study results, the questionnaire was modified and the main study was conducted.
1.7.4 Determination of Sample Size

The primary data for the study is collected through survey method using a structured questionnaire from respondents residing in Bengaluru and its sub urban area. The population of Bengaluru Urban district as per Government of India 2011 census was 85.20 lacs. As per (Krejcie and Morgan, 1970), for a population of 10 lacs and beyond, the representative sample size recommended is 384. However this study has considered a sample size of 532 respondents. As the focus of the study is on the investor’s perception towards ELSS funds in comparison to Diversified Equity funds and other tax saving investments, the number of respondents with investment experience in ELSS funds is considered more important and therefore this category has 382 respondents as against 150 for non ELSS investor category.

1.7.5 Sampling Design

For achieving objectives 1 to 3, the study has considered a sample set of ELSS funds, Diversified Equity funds and Market Indexes. The sample set of ELSS funds consists of 43 funds which is the entire population of ELSS funds that were operational as on 31.03.2013, with a track record of 3 years from their respective dates of inception.

The Diversified funds sample set has 12 funds that have been selected based on AUM as on 31.03.2013. Mutual fund houses with highest equity AUM as on 31.03.2013 were listed. From the list, the top three fund houses with highest AUM were selected and in them the top two diversified equity funds were considered. From the next six fund houses, one diversified equity fund from each fund house, with highest AUM is selected. So the total number of Diversified Equity Funds in the sample set is 12, from 9 different fund houses, all having a track record of a minimum of 3 years. The Market Indexes sample set consists of all the market indexes that were considered by ELSS funds as their respective benchmarks as on 31.03.2013. This set consists of 7 market indexes of which 4 pertain to Mumbai Stock Exchange and 3 pertain to National Stock Exchange of India. Table 1.1 below, lists the sample ELSS funds, Diversified Equity funds and Market indexes considered for the study.
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<td>Harshad Patwardhan / Karan Sikka</td>
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<td>44</td>
<td>BSE 100</td>
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<td>Mahesh Patil</td>
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<td>Franklin India Bluechip</td>
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<td>BSE Sensex</td>
<td>Anand Radhakrishnan / Anand Vasudevan</td>
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<td>58</td>
<td>CNX 500</td>
<td>Prashant Jain / Rakesh Vyas</td>
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<td>60</td>
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<td>Sankaran Naren / Mittal Kalawad</td>
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<td>7</td>
<td>ICICI Discovery Fund</td>
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<td>69</td>
<td>CNX Midcap</td>
<td>Manish Singh / Ashwin Jain</td>
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<td>IDFC Premier Equity</td>
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<td>43</td>
<td>BSE 500</td>
<td>Kenneth Andrade</td>
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<td>51</td>
<td>BSE 100</td>
<td>Sunil Singhania</td>
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<td>BSE 100</td>
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<td>1986</td>
<td>30</td>
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<td>1994</td>
<td>200</td>
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<td>1999</td>
<td>500</td>
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<td>5</td>
<td>NSE CNX Nifty</td>
<td>Free Float Market Cap</td>
<td>1995</td>
<td>50</td>
<td></td>
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<tr>
<td>6</td>
<td>NSE CNX 100</td>
<td>Free Float Market Cap</td>
<td>2003</td>
<td>100</td>
<td></td>
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<tr>
<td>7</td>
<td>NSE CNX 500</td>
<td>Free Float Market Cap</td>
<td>1995</td>
<td>500</td>
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</table>

Source: ACE MF Database
1.7.6 Period of Reference

An important part of this study is the evaluation of investment performance of ELSS funds. Investment Performance of ELSS funds and its evaluation as against Diversified Equity funds and benchmark Market index’s is carried out for a period of 13 financial years starting from the first financial year of the 20th century which is from 01.04.2000 till 31.03.2013. ELSS funds from the year 1991 till 1998, by regulation were close ended funds with a maximum tenure of 10 years. Fund houses used to launch new ELSS schemes every year to enable investors to invest into them and avail tax benefits. Due to the close ended nature, there was no continuity with regard to schemes and also the asset size of ELSS schemes were quite small. However in the year 1998, ELSS funds were allowed to be formed as open ended funds. Subsequently, in the year 1999 onwards, some funds which hitherto were close ended funds, converted themselves into open ended funds.

Considering this fact, this study has considered 01.04.2000 onwards as the period of reference for evaluating the investment performance.

Another part of the study is regarding the perception of investors towards ELSS funds. Primary data was collected from investor survey conducted during the period 01st April 2014 to 31st March 2015.

1.7.7 Methods and Tools used for Analysis

The two important dimensions of this study are ELSS Investment Performance and Investor Perception.

For evaluating investment performance, the Net Asset Values of ELSS funds and Diversified Equity funds along with values of Market Indexes for the period 01st April 2000 to 31st March 2013 were downloaded from ACE MF data base and Stock Exchange websites. The data was then was sorted and variables calculated using Microsoft Excel.

The study has used the following measures for investment performance evaluation:
• **Investment Returns of Fund** : It reflects the percentage of increase in wealth over a period of time.

\[ r = \frac{(V_E - V_B)}{V_B} \times 100 \]

\( r = \text{Rate of Return} \)

\( V_E = \text{Value at the End of the Period} \)

\( V_B = \text{Value at the Beginning of the Period} \)

• **Average Returns of Fund** : It is used to represent returns earned over a period of time in a single number from a set of periodic returns.

\[ \bar{r} = \frac{\left(\sum_{i=1}^{n} r_i \right)}{n} \]

\( \bar{r} = \text{Average Return} \)

\( r_i = \text{Return for the period} \)

\( n = \text{number of periods} \)

• **CAGR of Fund** : It is the compounded returns earned for the period. It is the compounded rate at which the investment has grown by over time.

\[ CAGR = \sqrt[n]{\prod_{i=n}^{n} (1 + r_i)} - 1 \]
• **Standard Deviation of Returns of Fund**: It is a measure of Total Risk undertaken by the investment consisting of systemic and un systemic risks. Higher the standard deviation, higher is the total risk undertaken.

\[
\sigma_F = \sqrt{\frac{\sum_{i=1}^{n}(r_i - \bar{r})^2}{(n - 1)}}
\]

\(\sigma_F = \text{Sample Standard Deviation of Fund Returns}\)

• **Coefficient of Variation (CV) of Fund**: It relates risk to the return earned. It states the amount of risk undertaken by the investment for earning a unit of return. Lower the CV, better is the performance.

\[
CV = \frac{\sigma_F}{\bar{r}}
\]

\(CV = \text{Coefficient of Variation}\)

\(\sigma_F = \text{Standard Deviation of the Fund}\)

\(\bar{r} = \text{Average Returns of the Fund}\)

• **Beta of the Fund**: It represents the systemic risk of the investment.

\[
\beta_F = \frac{\left( \sum_{i=1}^{n}(r_i - \bar{r}) \times (m_i - \bar{m}) \right)}{\sum_{i=1}^{n}(m_i - \bar{m})^2}
\]

\(\beta_F = \text{Beta of a Fund}\)

\(r_i = \text{Fund returns for the period } i\)

\(m_i = \text{Market returns for the period } i\)

• **Semi Deviation of the Fund**: It is a measure of downside risk undertaken by the investment. Higher the semi deviation, higher is the downside risk.

\[
\sigma_{down} = \sqrt{\frac{\sum_{r < \bar{r}}(r - \bar{r})}{n - 1}}
\]
- **R² (Coefficient of Determination):** It indicates the extent to which the returns of the fund are determined by the market. It ranges between +1 to 0. +1 indicates that 100 percentage of the returns are determined by the market. Higher the R² higher is the diversification of the fund in relation to the market index.

\[
R^2 = \left( \frac{\text{Cov}_{pm}}{\sigma_p \times \sigma_m} \right)^2
\]

\[R^2 = \text{Coefficient of Determination}\]

\[\text{Cov}_{pm} = \text{Covariance of Returns of Portfolio and Market}\]

\[\sigma_p = \text{Standard Deviation of Portfolio Returns ;}\]

\[\sigma_m = \text{Standard Deviation of Market Returns}\]

- **Sharpe’s Return to Variability Ratio (Sharpe, 1966):** It is a very widely used measure of risk adjusted performance. It provides the risk premium earned by a fund for having undertaken a unit of total risk. Higher the Sharpe ratio better the risk adjusted performance of the fund.

\[
S_p = \frac{R_p - R_F}{\sigma_p}
\]

\[S_p = \text{Sharpe Ratio}\]

\[R_p = \text{Return of the Portfolio}\]

\[R_F = \text{Risk Free Rate of Return}\]

\[\sigma_p = \text{Standard Deviation of the Portfolio}\]

- **Treynor’s Return to Volatility Ratio (Treynor, 1965):** It provides us the risk premium earned by the fund for having undertaken a unit of market risk. Higher the Treynor’s Ratio, better the risk adjusted performance of the fund. It is suitable for evaluation of funds which have a high element of diversification.

\[
T_p = \frac{R_p - R_F}{\beta_p}
\]
$T_p = Treynor's \text{ Ratio}$

$R_p = \text{Return of the Portfolio}$

$R_f = \text{Risk Free Rate of Return}$

$B_p = \text{Beta of the Portfolio}$

- **Jensen’s Alpha (Jensen, 1968):** It is the excess returns earned by the fund over and above the return earned for having undertaken the market risk. It is considered to be a measure of fund manager performance. Higher the alpha, better is the fund manager performance.

\[
\alpha_p = R_p - (R_f + \beta_p (R_m - R_f))
\]

$\alpha_p = \text{Alpha of the Portfolio}$

$R_p = \text{Return of the Portfolio}$

$R_f = \text{Risk Free Rate of Return}$

$\beta_p = \text{Beta of the Portfolio}$

$R_m = \text{Return of Market Portfolio}$

- **Sortino’s Ratio (Sortino, 1994):** It is one of the prominent downside risk adjusted return measures. It provides us the risk premium earned for undertaking a unit of downside risk. Higher the Sortino Ratio, better the downside risk adjusted performance of the fund.

\[
SR_{down} = \frac{(R_p - R_f)}{\sigma_{down}}
\]

$SR_{down} = \text{Sortino Ratio}$

$R_p = \text{Return of the Portfolio}$

$R_f = \text{Risk Free Rate of Return}$

$\sigma_{down} = \text{Semideviation}$
The Statistical Package for Social Sciences (SPSS) software was used to analyse primary
data and perform the statistical tests. The Hypotheses testing and its validation is done
using the following tests:

The data sets of ELSS funds, Diversified Equity funds and Market Indexes are tested for
normality using Kolmogorov-Smirnov Test for Normality and Shapiro-Wilk Test for
Normality.

- **Welch’s t - Test**

  The Hypotheses framed around the secondary data is tested using the Welch’s two sample
t-Test. This test is used to determine whether two independent samples have equal means.
In this test, there is no assumption that the variances of the two distributions are equal. This
test can be used with unequal sample sizes. If the test results are significant, then it leads to
the conclusion that the means of the two samples are not equal.

- **Independent –Samples Mann-Whitney U Test**

  This test is used in case of ordinal (rank/order) data for hypothesis testing which involves
two independent samples. If the test results are significant, it means that there is a
significant difference between the two sample medians. This leads to a conclusion that the
two samples represent population with different median values.

- **Independent –Samples Kruskal-Wallis Test**

  This test is used in case of ordinal (rank/order) data for hypothesis testing which involves
two or more independent samples. If the test results are significant, it means that there is a
significant difference between the medians of the samples. This leads to a conclusion that
the samples represent population with different median values.
• **Independent Samples Kolmogorov-Smirnov Test**
This test is used in case of ordinal data for hypothesis testing which consist of two independent samples. It compares the cumulative frequency distribution of the two samples. If the test results are significant, it means that there is a significant difference the cumulative frequency distributions of the samples. This leads to a conclusion that the samples do not represent the same population.

• **Related Samples Friedman’s Two -Way Analysis of Variance by Ranks**
This test is used in case of ordinal data for hypothesis testing which involves two or more dependent samples. If the test results are significant, it means that there is a significant difference between the sample medians. This leads to a conclusion that the samples represent populations with different median values.

• **One Sample Chi-Square Test**
This test is used in case of categorical / nominal data for hypothesis testing which involves one dependent sample. If the test results are significant, it means that the categorical variables do not follow the hypothesized population distribution. This leads to a conclusion that the observed frequency is not equal to the expected frequency.

• **Wilcoxon Matched-Pairs Signed Ranks Test**
This non parametric test is used in case of interval / ratio data, to test the hypothesis whether the median of the difference of the two dependent sample scores equals zero.
1.8 Limitations of the Study

This study is subject to a number of limitations, which are as follows:

1) Although ELSS funds were available as an investment product from the financial year 1990-91, for the purpose of study, only a period of 13 years starting from 2000-01 till 2012-13 is considered.

2) The sample ELSS funds considered for the study consist of only those funds which were active as on 31st March 2013. Funds which were wound up and were not in existence as on 31st March 2013 are not considered.

3) As this study is focussed on the investment performance of ELSS funds in terms of their ability to produce long term returns, it has considered only ELSS (Growth) plans and has not considered ELSS (Dividend) plans for performance evaluation.

4) The investment performance evaluation made in this study is based on the NAV declared by the respective funds, which are net of fund costs.

5) The primary data required for the study is collected through structured questionnaire from investors residing in Bengaluru and its sub urban area only.
1.9 Scheme of Presentation

This research study is divided into six chapters, which are as follows:

**Chapter 1**: Introduction – This chapter contains statement of the problem, scope, significance, objectives of the study, hypotheses of the study, research design and limitations of the study.

**Chapter 2**: Mutual Funds in India – An Overview – This chapter provides an overview of mutual funds in India along with ELSS funds.

**Chapter 3**: Review of Literature - This chapter reviews some of the works in the areas of investment performance of mutual funds and investor perception of mutual fund investors.

**Chapter 4**: Results, Interpretation and Discussion– Investment Performance – This chapter analyses the results of the study with regard to investment performance of ELSS funds as against Diversified Equity funds and Market indexes.

**Chapter 5**: Results, Interpretation and Discussion – Investor Perception – This chapter analyses the demographic attributes of investors along with their perception and preference towards ELSS mutual funds as against Diversified Equity funds and other tax saving investments.

**Chapter 6**: Findings, Conclusions and Recommendations – The final chapter lists down the main findings of the study and its conclusions. It also provides recommendations to the stake holders and also scope for future research in the field.