



ISSN Print: 2394-7500  
ISSN Online: 2394-5869  
Impact Factor: 5.2  
IJAR 2015; 1(13): 167-175  
www.allresearchjournal.com  
Received: 14-10-2015  
Accepted: 16-11-2015

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## Portfolio management by an investor and suggesting the optimal portfolio using sharpe model

**Divyesh J Gandhi**

### Abstract

Since the composition of portfolio is a factor considered by the managers, shareholders and other interested individuals and institutions. Therefore, it is essential for them to recognize and inform of the components of portfolio. How to shape the portfolio of the company, its impact on performance and effective at the company, and its relevance with systematic risk of companies is noteworthy for shareholder, financial managers, creditors, as well as competitors of the companies.

**Keywords:** Sharpe Model, Portfolio management

### Introduction

We all dream of beating the market and being super investors and spend an inordinate amount of time and resources in this endeavor. Consequently, we are easy prey for the magic bullets and the secret formulae offered by eager salespeople pushing their wares. In spite of our best efforts, most of us fail in our attempts to be more than average investors. Nonetheless, we keep trying, hoping that it can be more like the investing legends – another Warren Buffett or Peter Lynch. We read the words written by and about successful investors, hoping to find in them the key to their stock-picking abilities, so that It Canreplicate them and become wealthy quickly.

In our search, though, we are whipsawed by contradictions and anomalies. In one corner of the investment town square, stands one advisor, yelling to us to buy businesses with solid cash flows and liquid assets because that's what worked for Buffett. In another corner, another investment expert cautions us that this approach worked only in the old world, and that in the new world of technology, we have to bet on companies with solid growth prospects. In yet another corner, stands a silver tongued salesperson with vivid charts and presents you with evidence of his capacity to get you in and out of markets at exactly the right times. It is not surprising that facing this cacophony of claims and counterclaims that we end up more confused than ever.

In this introduction, we present the argument that to be successful with any investment strategy, you have to begin with an investment philosophy that is consistent at its core and which matches not only the markets you choose to invest in but your individual characteristics. In other words, the key to success in investing may lie not in knowing what makes Peter Lynch successful but in finding out more about yourself.

In 1952, Arthur D. Roy suggested maximizing the ratio  $(m-d)/\sigma$ , where  $m$  is expected gross return,  $d$  is some "disaster level" (a.k.a., minimum acceptable return) and  $\sigma$  is standard deviation of returns. This ratio is just the Sharpe ratio, only using minimum acceptable return instead of the risk-free rate in the numerator, and using standard deviation of returns instead of standard deviation of excess returns in the denominator.

In 1966, William Forsyth Sharpe developed what is now known as the Sharpe ratio. Sharpe originally called it the "reward-to-variability" ratio before it began being called the Sharpe ratio by later academics and financial operators. The definition was:

Sharpe's 1994 revision acknowledged that the basis of comparison should be an applicable benchmark, which changes with time. After this revision, the definition is:

Recently, the (original) Sharpe ratio has often been challenged with regard to its appropriateness as a fund performance measure during evaluation periods of declining markets.

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Stock market is a market where stocks are bought and sold. In an economy, besides playing the role of a source for financing investment, stock market also performs a function as a signaling mechanism to managers regarding investment decisions, and a catalyst for corporate governance. However, stock market is best known for being the most effective channel for company's capital raise. People are interested in stock because of "long-term growth of capital, dividends, and a hedge against the inflationary erosion of purchasing power". The other feature that makes the stock market more attractive than other types of investment is its liquidity. Most people invest in stocks because they want to be the owners of the firm, from which they benefit when the company pays dividends or when stock prices increases. However, many people buy stocks for the purpose of control over the firms. Regularly, shareholders need to own specific amount of shares to be in the board of directors who can make strategic decisions and set directions for the firms. Vietnamese stock market has come into operation more than 10 years. It was just develop slowly from the speculative bubble in 2006–2007. The VN-index had an amazing fluctuation from 2006 to 2009. It was about 300 points and reached highest historical peak (over 1100) points of VN-index in March 2007, then after the stock bubble burst in 2008 VN-index fell around 250–300 points at beginning of 2009 and VN-index is still around 350 points in 2011 (Vuong, 2011). The stock prices declined dramatically which was consequence of moving capital from stock market to the real estate market and caused withdrawal of numerous investors as the manifestation of effect of behavioral factors on investors' decisions and reactions. To have an indepth insight into the investors' decisions, there is a necessity to investigate which behavioral factors influencing the decisions of individual investors at the Securities Companies in Ho Chi Minh City. It will be useful for investors to understand common behaviors, from which justify their reactions for better returns. Securities Companies may also use the finding of this research for better understanding on investors' decision to give better recommendations to them. Thus, stock prices will reflect their true value and Ho Chi Minh stock market becomes the yardstick of the economy's wealth and helps enterprises to raise capital for business activities.

### Literature Review

Dr. Arifur Rehman Shaikh, Dr. Anil B. Kalkundarikar (2011) the research makes a pertinent revelation that the level of investment knowledge significantly leverages the returns on the investments. From the calculated correlation analysis data it can be observed that 0.096 point change in knowledge boosts investors return expectation by 1 point. Investors having extensive investment knowledge has the return expectation of multifold when compared to other knowledge categories and the correlation analysis between the occupation of investor and the level of risk assume shows that there is a negative correlation between these two variables, analysis shows that a 1 point change in occupation will lead to negative change of 0.053 in the level of risk taken by the investors <sup>[6]</sup>. B.n.dutta smriti mahavidyalaya, b. (2013). This study do analysis so far it is clear that the construction of optimal portfolio investment by using Sharpe's Single Index Model is easier and more comfortable than by using Markowitz's Mean-Variance Model. In his seminal contribution Sharpe argued that there is a considerable similarity between efficient portfolios generated by SIM and Markowitz's Model. This model can show how

risky a security is, if the security is held in a well-diversified portfolio <sup>[7]</sup>. bialowolski, p. (2014) the questionnaire used to gather data was developed relying largely on the available empirical research on investment decision process. Although this research has developed in the recent years, and has applied increasingly sophisticated data and methods, it is still far from perfect. Above all, the results presented are so strongly linked to the organizational form, size and branch a company operates in that they often prevented us from obtaining more general and universal conclusions <sup>[8]</sup>. brownb, w. h. (2006). Should investors hire active portfolio managers or should they adopt a more passive approach to investing? The answer to that question depends on many factors, not the least of which is how the central issue is framed. Consistent with the previous literature, in this study we have shown that over the period from 1979 to 2003 the typical mutual fund produced returns that failed to meet expectations <sup>[10]</sup>. dar, m. a. (n.d.). "Individuals who cannot master their emotions are ill-suited to profit from the investment process." Benjamin Graham. Father of Value Investing "You make most of your money in a bear market; you just don't realize it at the time." Shelby Cullom Davis. So for above study reveals that most investors are emotional and maximize money flows at the wrong times - a sure-fire way to reduce potential returns. Strategies that eliminate the emotional response to investing should produce returns that are significantly greater than those indicated by the typical investor responding to the market rather than proactively investing in the market. Diplomat, during extreme periods for the market, investors often make decisions that can undermine their ability to build long-term wealth. It is important to understand that periods of market uncertainty that can create wealth-building opportunities for the patient, diligent, longterm investor <sup>[11]</sup>. dileepudupi, d. s. (2013, oct-dec) So we may conclude that William Sharpe's Single Index Model will be sustainable and applicable to the Indian market where investors can construct a portfolio for improving the expected returns on their investment. However, in this study we not considered Industry analysis and Economic analysis. It is suggested to the Indian investors that, they can apply Sharpe's Single Index Model to get a better returns in the secondary market for constructing a portfolio with more sectors for better diversification <sup>[12]</sup>. dr.kuberudu burlakanti, r. c. (2013, may) For small investors who can afford only small amounts of investments in stock markets, undoubtedly Mutual funds are best option but one has to bet in better yielded and outperformed funds rather than investing in low yielded funds and NFOs. Necessary evaluation has to be carried out to choose right fund to yield optimum returns. Indicators in present study may not be appropriate in all cases but are reliable in predicting future expected returns based on past performance of these funds in scientific manner. Mutual fund investors are also advised to stay on investing in funds for long term horizon (more than 5 years) and short term investment may lead to high volatility of returns (High risk) and even negative returns <sup>[14]</sup>.

### Research Methodology

#### Objective

1. To construct an optimal portfolio empirically using the Sharpe's Single Index Model.
2. To determine return and risk of the optimal portfolio constructed by using Sharpe's Single Index Model.
3. To study the behavior of retail investor regarding portfolio management

**Research Design**

Descriptive Research design has been used for this research.

**Sources of Data Collection****Primary Sources**

The data collected through inquiry such data are originally generated through survey and discussion with retail investors who invest in stock market. Primary data are in form of raw material on which proper method are applied to get perfect output. The data was collected through questionnaire.

**Secondary Sources**

The data collected through books and search on internet, journals etc. It is the information collected from records, company websites and also discussed with management of the organization.

**Sampling Plan**

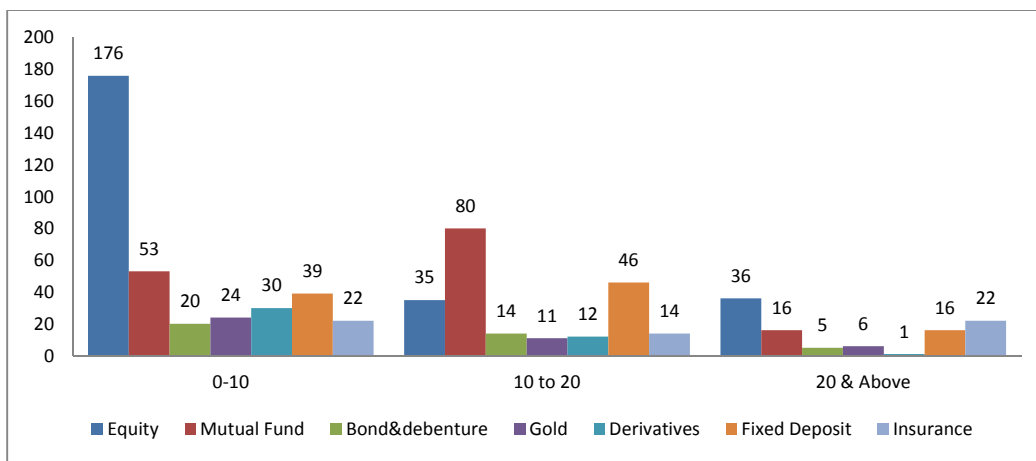
1	Sample Size	300 Samples
2	Sample Units	Retail Investors
3	Sampling Method	Non probability convenience Method
4	Sampling Area	Navsari City

**Results and Discussion****Table 1:** Demographic Variables

Factor	Categories	Count	Percentage	
Gender	Male	250	83	
	Female	50	17	
Age	18-25	40	13	
	26-35	73	24	
	36-45	100	34	
	46-55	43	14	
	More than 55	44	15	
Educational Level	Undergraduate	82	27	
	Graduate	167	56	
	Postgraduate	51	17	
Occupation	Professional	27	9	
	Service	187	63	
	Own business	70	23	
	Housewife	12	4	
	Student	4	1	
Annual Income	Less than 150000	35	12	
	150000-300000	75	25	
	300000-450000	143	47	
	More Than 450000	47	16	
<b>Factor Affecting on Portfolio Management By The Investors</b>				
No.	Factor	Categories	Count	Percentage
1	Do You Invest In Stock Market?	Yes	300	100
		No	0	0
2	How Much Do You Invest Annually?	Less Than 50000	113	38
		50000-100000	133	44
		100000-150000	40	13
		More Than 150000	14	5
3	In Which Broking Firm You Invest?	K.R.Choksey	133	45
		Marwadi Broking Firm	13	4
		Dani Broking Firm	28	9
		Angel Broking Firm	33	11
		Sherkhan Broking Firm	14	5
		India Infoline Broking Firm	34	11
		Other	45	15
4	How Long Have You Been An Investor Of Your Broking Firm?	Less Than 1 Year	27	12
		1 To 2 Year	98	25
		3 To 5 Year	83	47
		More Than 5 Year	92	16
5	What Is Your Frequency Of Using Services From Your Broking Firm?	Daily	87	29
		Weekly	41	14
		Monthly	54	18
		Other	118	39
6	Upto What Extent(Level) Do You Have Knowledge Regarding Portfolio Management?	Little	80	27
		Some	88	29
		Moderate	60	20
		Good	58	19
		Extensive	14	5
7	What Are Your Objectives Regarding Portfolio Management?	Earn Regular Income	76	25
		Wealth For Retirement	23	8
		Achieve Investment Goal	50	17
		Multiple Objective	86	29

		Safety Of Capital	47	15
		Others	11	4
		Earn Capital Gain	7	2
8	What Is The Level Of Risk Assumed By You Regarding Portfolio Management?	Low	51	17
		Moderate	132	44
		High	111	37
		Very High	6	2
9	How Much Return on Investment Rate Is Expected Regarding Portfolio Management?	<8	20	7
		8 to 12	94	31
		12 to 16	117	39
		>16	69	23
10	Do You Use Any Technique For Evaluation?	Yes	73	24
		no	227	76
11	If Yes Then Which Technique Analysis Do You Prefer While Investing?	Fundamental	30	41
		Technical	43	59
12	Do You Know Regarding Sharpe Index Model?	Yes	51	17
		No	249	83
13	Have You Ever Used Sharpe Index Model?	Yes	19	6
		No	281	94

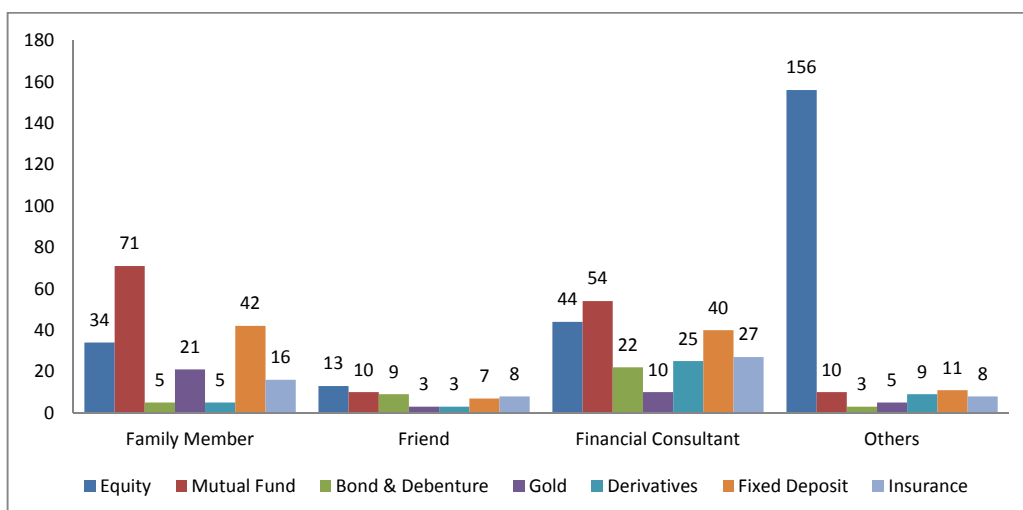
**Que.14 What Percentage of Income Is Invested In Following Services?**



From the above chart it can say that 176 investors are invest in equity 0 to 10 percentage which was highest and 20 investors is invest in bond & debenture 0 to 10 percentage which was lowest, 80 investors are invest in mutual fund 10 to 20 percentage which was highest and 11 investors is invest in gold 10 to 20 percentage which was lowest, 36 investors

are invest in equity 20 & above percentage which was highest and 1 investors is invest in derivatives 20 & above percentage which was lowest.

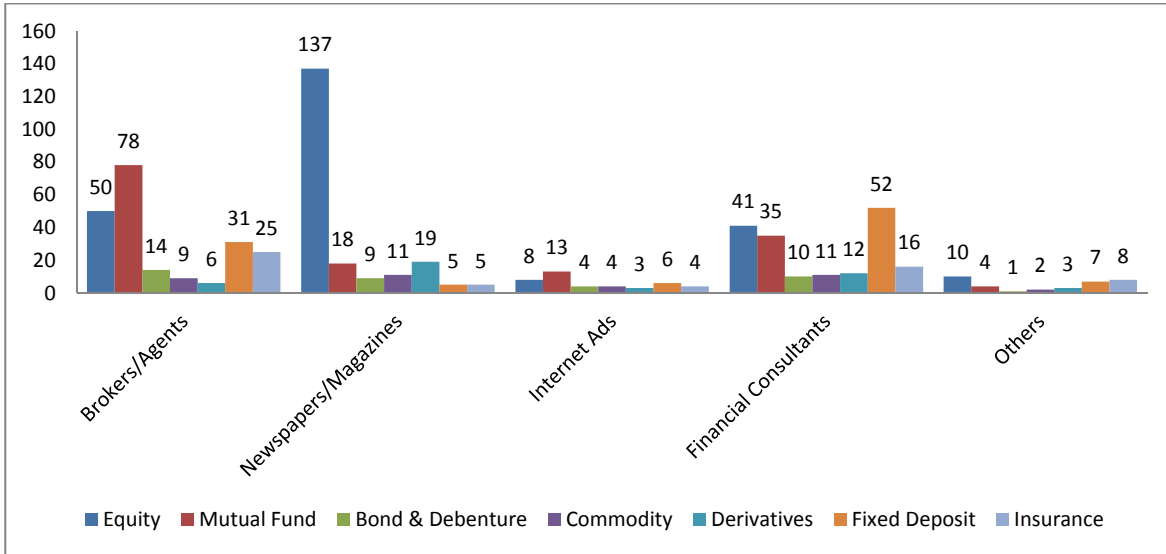
**Que.15 What Are the Factors Affecting the Investment Behavior?**



From the above chart it can say that 71 investors are investing in mutual fund factor affecting investors behavior family member which was highest and 5 investors are investing in bond & debenture & derivatives factor affecting investors behavior family member which was lowest, 13 investors are investing in equity factor affecting investors behavior friend which was highest and 3 investors are investing in gold & derivatives factor affecting investors behavior friend which was lowest, 44 investors are investing in equity factor affecting investors behavior financial

consultants which was highest and 10 investors are investing in gold factor affecting investors behavior financial consultants which was lowest, 156 investors are investing in equity factor affecting investors behavior others which was highest and 3 investors are investing in bond & debenture factor affecting investors behavior others which was lowest.

**Que. 16 What Are the Sources of Information That Are Used By You?**

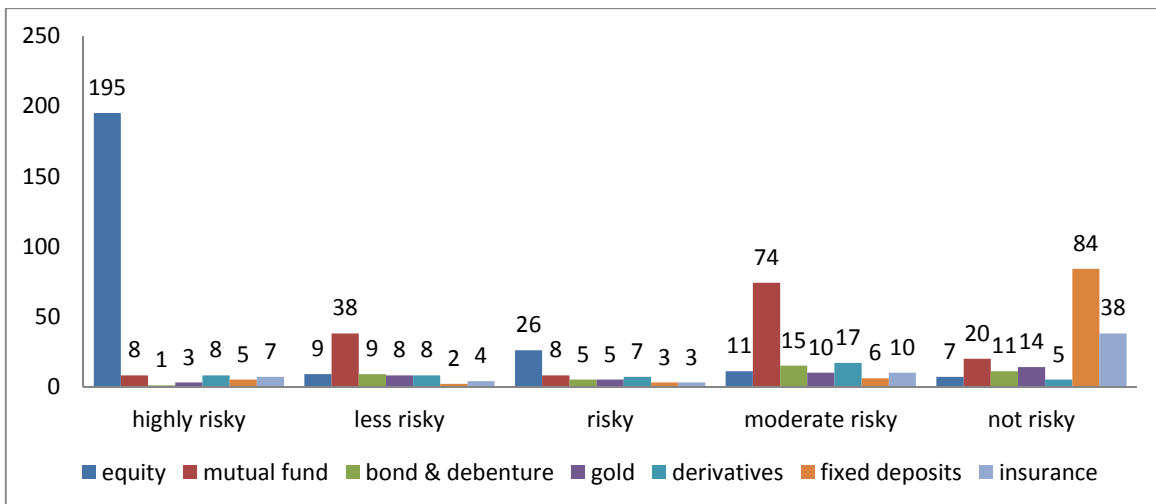


From the above chart it can say that 78 investors are invest using broker advice for mutual fund which was highest and 6 investors are invest using broker advice for derivatives which was lowest, 137 investors are invest using newspapers advice for equity which was highest and 5 investors are invest using newspaper advice for fixed deposits and insurance which was lowest, 13 investors are invest using internet advice for mutual fund which was highest and 4 investors are invest using internet advice for insurance which was lowest, 52 investors are invest using financial consultants advice for

fixed deposit which was highest and 10 investors are invest using financial consultants advice for bond & debenture which was lowest, 10 investors are invest using other advice for equity which was highest and 1 investors are invest using other advice for bond & debenture which was lowest.

**Que. 17 As Per the Risk Involved In the Following Services Rank Them Likert Scale**

(1-Highly Risky, 2-Less Risky, 3-Risky, 4-Moderate Risky, 5-Not Risky)



From the above chart it can say that 195 investors are saying equity highly risky which was highest and 1 investor is saying bond & debenture highly risky which was lowest.

**Que. 18 Friedman Test**

**H0:** There is no statistically significant preference of investors towards various investment avenues.

**H1:** There is a statistically significant preference of investors towards various investment avenues.

Particular	Mean rank
Equity	4.89
Mutual fund	4.75
Fixed deposit	4.52
Insurance	4.03
Bond & Debenture	3.47
Gold	3.36
Derivative	2.99

From the above table it can say that investor give first preference to the equity with highest mean rank of 4.89, they give second preference to the mutual fund with mean rank of 4.75, they give third preference to the fixed deposit with mean rank of 4.52, they give fourth preference to the insurance with mean rank of 4.03, they give fifth preference to the bond & debenture with mean rank of 3.47 and they give sixth preference to the gold with mean rank of 3.36 and they give last preference to the derivative with mean rank of 2.99.

Test Statistics <sup>a</sup>	
N	300
Chi-Square	182.274
Df	6
Asymp. Sig.	.000

**Que.19 Crosstabs**

gender * evaluation technique Cross tabulation						
Count						
		Evaluation technique				Total
		Yes	%	no	%	
gender	male	60	24	190	76	250
	female	13	26	37	74	50
Total		73		227		300

From the above table it can say that 24% male respondents are using evaluation techniques such as fundamental analysis and technical analysis & 76% are not using evaluation techniques for portfolio management and 26% female respondents are using evaluation techniques & 74% are not using evaluation techniques for portfolio management.

**Que.20 Frequencies**

Objective

Particular	Percentage
earn regular income	27.7
wealth for retirement	8.4
achieve investment goal	12.8
earn capital gain	2.4
safety of capital	17.0
Multiple objective	27.4
Other	4.2
Total	100.0

From the above table it can say that 27.7% investors objective is to earn regular income, 8.4% investors objective is to create wealth for retirement, 12.8% investors objective is to achieve investment goal, 17% investors objective is to safety of capital, 2.4% investors objective is to earn capital gain, 27.4% investors objective is multiple and 4.2% investors objective is for other purpose.

**Que. 21 One way ANNOVA**

**H0:** There is no significant variance between demographic profile of the investor with their level of risk & expected return regarding portfolio management.

**H1:** There is a significant variance between demographic profile of the investor with their level of risk & expected return regarding portfolio management.

Particular	Risk	Return
Gender	1.000	0.000
Age	0.152	0.081
Education	0.549	0.739
Occupation	0.682	0.517
Annual Income	0.002	0.339

**Que.22 Correlation**

**H0:** There is no significant correlation variance between demographic profile of the investor with their level of risk & expected return regarding portfolio management.

**H1:** There is a significant correlation variance between demographic profile of the investor with their level of risk & expected return regarding portfolio management.

Particular	Risk(significant)	Return(significant)
Gender	1.000	0.000
Age	0.243	0.885
Education	0.397	0.611
Occupation	0.659	0.500
Annual Income	0.029	0.109

**Sharpe Index**

This are 10 script we are taking from the CNX NIFTY which are top 10 Companies.

Number	Security	Return(%)	Beta	R^2	volatility
1	Infosys	7.2356	0.39	0.04	1.24
2	HDFC	5.7545	1.25	0.35	1.59
3	ITC	-1.5395	0.46	0.06	2.28
4	HDFC Bank	0.2527	0.99	0.41	1.13
5	ICICI Bank	-3.9273	1.61	0.57	2.07
6	LT	4.2512	1.50	0.46	2.26
7	Reliance	-5.5565	1.29	0.47	1.56
8	TCS	7.7861	0.42	0.05	1.50
9	Tata Motors	0.9442	1.45	0.40	2.13
10	Axis Bank	4.5392	1.43	0.41	2.89

Return=Closing Price\*100/Opening Price

Risk Free Return=7.72 percent in February of 2015

Market Variance Index = (13.26)^2= 175.8276

**Solution**

**1.Rank the securities calculating Ri-Rf/Bi**

Security	Ri(%)	Rf	Bi	Ri-Rf/Bi
Infosys	7.2356	7.72	0.39	-1.2421
HDFC	5.7545	7.72	1.25	-1.5724
ITC	-1.5395	7.72	0.46	-20.1293
HDFC Bank	0.2527	7.72	0.99	-7.5427
ICICI Bank	-3.9273	7.72	1.61	-7.2343
LT	4.2512	7.72	1.50	-2.3125
Reliance	-5.5565	7.72	1.29	-10.2919
TCS	7.7861	7.72	0.42	0.1574
Tata Motors	0.9442	7.72	1.45	-4.6730
Axis Bank	4.5392	7.72	1.43	-2.2243

2. Arranging the security as per the rank

Rank	Security	Ri-Rf/Bi
1	TCS	0.1574
2	Infosys	-1.2421
3	HDFC	-1.5724
4	Axis Bank	-2.2243
5	LT	-2.3125
6	Tata Motors	-4.6730
7	ICICI Bank	-7.2343
8	HDFC Bank	-7.5427
9	Reliance	-10.2919
10	ITC	-20.1293

3. Calculation of C\*

$$C_i = \frac{\sigma_m^2 \sum_{i=1}^N (R_i - R_f) \beta_i}{1 + \sigma_m^2 \sum_{i=1}^N \frac{\beta_i^2}{\sigma_{ei}^2}}$$

Market Variance Index = (13.26)^2= 175.8276

Rank	Security	σ <sup>2</sup>	R <sup>2</sup>	SR= σ <sup>2</sup> *R <sup>2</sup>	UR= σ <sup>2</sup> - SR
1	TCS	1.50	0.05	0.0750	1.4250
2	Infosys	1.24	0.04	0.0496	1.1904
3	HDFC	1.59	0.35	0.5565	1.0335
4	Axis Bank	2.89	0.41	1.1849	1.7051
5	LT	2.26	0.46	1.0396	1.2204
6	TataMotors	2.13	0.40	0.8520	1.2780
7	ICICI Bank	2.07	0.57	1.1799	0.8901
8	HDFCBank	1.13	0.41	0.4633	0.6667
9	Reliance	1.56	0.47	0.7332	0.8268
10	ITC	2.28	0.06	0.1368	2.1432

Security	Ri-Rf	Bi	σ <sup>2</sup>	Ri-Rf*Bi/ σ <sup>2</sup>	Bi <sup>2</sup>	Bi <sup>2</sup> / σ <sup>2</sup>	ΣBi <sup>2</sup> / σ <sup>2</sup>	Bi/ σ <sup>2</sup>
TCS	0.0667	0.42	1.50	0.018676	0.1764	0.1176	0.1176	0.28
Infosys	-0.4844	0.39	1.24	-0.15235	0.1521	0.12266	0.94783	0.314516
HDFC	-1.9655	1.25	1.59	-1.54520	1.5625	0.9827	1.93053	0.78616
Axis Bank	-3.1808	1.43	2.89	-1.57389	2.0449	0.70757	0.825417	0.49480
LT	-3.4688	1.50	2.26	-1.30453	2.25	0.99557	2.9261	0.66371
Tata Motors	-6.7758	1.45	2.13	-4.61263	2.1025	0.98708	3.91318	0.68075
ICICI Bank	-11.6473	1.61	2.07	-9.05901	2.5921	1.25222	5.1654	0.77777
HDFC Bank	-7.4673	0.99	1.13	-6.54214	0.9801	0.86734	6.03274	0.87610
Reliance	-13.2765	1.29	1.56	-10.97864	1.6641	1.06673	7.09947	0.82692
ITC	-9.2595	0.46	2.28	-1.86814	0.2116	0.09280	7.19227	0.20175

4. Select or Reject the securities Ri-Rf/Bi > Ci

Security	Ri-Rf/Bi	Ci	Selected/Rejected
TCS	0.1574	0.1514876	Selected
Infosys	-1.2421	-0.30164	Selected
HDFC	-1.5724	-1.5633	Selected
Axis Bank	-2.2243	-2.20662	Selected
LT	-2.3125	-1.3029	Selected
Tata Motors	-4.6730	-4.6462	Selected
ICICI Bank	-7.2343	-7.1053	Selected
HDFC Bank	-7.5427	-7.4936	Selected
Reliance	-10.2919	-10.2373	Selected
ITC	-20.1293	-18.9683	Selected

6. Percentage to be invested = ΣZi/Zi \* 100

Security	Zi	Zi/ΣZi*100(%)
TCS	-0.1330	0.331420398
Infosys	-0.3038	0.757033962
HDFC	-1.6967	4.227977364
Axis Bank	-1.7253	4.299245209
LT	-2.4537	6.114332562
Tata Motors	-4.7641	11.87157833
ICICI Bank	-9.2104	22.95123635
HDFC Bank	-6.6936	16.67966599
Reliance	-11.1302	27.73515274
ITC	-2.0195	5.032357097
	ΣZi=-40.1303	

5. Proportion to be invested Zi = (βi / σ<sup>2</sup><sub>ei</sub>) x [(Ri - Rf / βi) - C]

Security	Bi <sup>2</sup> / σ <sup>2</sup>	Ri-Rf/Bi	C*	Zi
TCS	0.1176	0.1574	0.1514876	-0.1330
Infosys	0.12266	-1.2421	0.1514876	-0.3038
HDFC	0.9827	-1.5724	0.1514876	-1.6967
Axis Bank	0.70757	-2.2243	0.1514876	-1.7253
LT	0.99557	-2.3125	0.1514876	-2.4537
Tata Motors	0.98708	-4.6730	0.1514876	-4.7641
ICICI Bank	1.25222	-7.2343	0.1514876	-9.2104
HDFC Bank	0.86734	-7.5427	0.1514876	-6.6936
Reliance	1.06673	-10.2919	0.1514876	-11.1302
ITC	0.09280	-20.1293	0.1514876	-2.0195

Findings

1. Among the respondent 83% investors are male & 17% respondents are female.
2. Among the respondent 34% investors are belong to 36-45 age group.
3. Among the respondent 56% investors are graduate, 27% investors are undergraduate & 17% investors are postgraduate.
4. Among the respondent 63% investors occupation is service.

5. Among the respondent 47% investors annual income is 300000-450000.
6. Among the respondent 44% investors are annually invest in stock market between 50000-100000.
7. Among the respondent
8. Among the respondent 45% investors are invest in K.R. Choksy.
9. Among the respondent 47% investors are using the broking firm service between 3 to 5 year.
10. Among the respondent 39% investors are using broking firm service frequency is monthly.
11. Among the respondent
12. Among the respondent 29% investors have knowledge regarding portfolio management at some level.
13. Among the respondent 29% investors objective is to multiple purpose for portfolio management.
14. Among the respondent 44% investors are assumed moderate risk regarding portfolio management.
15. Among the respondent 39% investors are expect return between 12-16% regarding portfolio management.
16. Among the respondent
17. Among the respondent
18. Among the respondent 24% investors are using evaluation technique such as technical analysis & fundamental analysis.
19. Among the respondent 59% investors are use technical analysis & 41% are using fundamental analysis.
20. Among the respondent 17% investors have knowledge regarding sharpe index model.
21. Among the respondent 6% investors are using sharpe index model for portfolio management.

### Conclusion

1. From the Friedman test, it can be concluded that investor give first preference to the equity, than mutual fund, than fixed deposit, than insurance, than bond & debenture, than gold & last preference give to derivative.
2. From the frequency test it can be concluded that investors objective is first preference to earn regular income & last preference to earn capital gain.
3. From the one way annova it can be concluded that investors risk regarding portfolio management there is no significant variance in gender, age, education & occupation.
4. From the one way annova it can be concluded that investors expected return regarding portfolio management there is no significant variance inage, education, occupation & annual income.
5. From the correlation it can be concluded that investors risk regarding portfolio management there is no significant variance in gender, age, education & occupation.
6. From the correlation it can be concluded that investors expected return regarding portfolio management there is no significant variance inage, education, occupation & annual income.
7. From the correlation it can be concluded that investors risk regarding portfolio management there is a correlation in gender, education & occupation.
8. From the correlation it can be concluded that investors risk regarding portfolio management there is a correlation in gender, education & occupation.
9. From the correlation it can be concluded that investors expected return regarding portfolio management there is a correlation in gender, age, education & occupation.

### Suggestion

1. Less awareness regarding Sharpe index model.
2. Less awareness regarding evaluation technique for portfolio management.

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