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   REVIEW OF LITERATURE

   NEED/IMPORTANCE OF THE STUDY

   STATEMENT OF THE PROBLEM

   OBJECTIVES

   HYPOTHESES

   RESEARCH METHODOLOGY

   RESULTS & DISCUSSION

   FINDINGS

   RECOMMENDATIONS/SUGGESTIONS

   CONCLUSIONS

   SCOPE FOR FURTHER RESEARCH

   ACKNOWLEDGMENTS

   REFERENCES

   APPENDIX/ANNEXURE

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- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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WEBSITE

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

FUND GROUPING: A MATHEMATICAL MODEL – PUBLIC AND PRIVATE SECTOR MUTUAL FUNDS IN INDIA

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ABSTRACT

The purpose of this paper was to examine the performance of Mutual Fund schemes from public and private sectors in India. The current study the researcher confident to use a new mathematical model by using cluster analysis and canonical correlation. In this present study to get significant result for various Mutual Fund schemes for both the sectors. The performance evaluation of the individual schemes were arranged such as, the best, the moderate and the weak funds. So that, irrespective of the sectors a few funds were gain significant performance but, maximum number of funds are not gained good momentum.

KEYWORDS

Mutual Fund, Net Asset Value, Market value, Cluster analysis, Canonical Correlation.

INTRODUCTION

The NAV and the Market values are the best indicators to measure the performance of the Mutual Funds (MFs). The NAV and market values for three different periods such as one year, three years , and five years for all types of funds for UTI MF, from public sector and Reliance MF from private sectors are considered to frame the model. The segmentation of different funds of public and private sectors with their characteristic features is identified as well as justified through this mathematical model.

The segmentation process of different funds is achieved through the average of NAV and market values . In this context K –means cluster analysis is found suitable to classify the MFs based on the average of any two prominent predictors. The mechanism of the cluster analysis is applied as a means of identifying the heterogeneous groups prevalent among different public and private sector funds . The heterogeneity and their frequency distribution are briefly estimated through the cluster analysis . Moreover, it helps to identify the best, moderate and weak form of funds from the sample selected institutions. Further , the classification is also substantiated by the formation of appropriate discriminant function , existent of Wilks' Lamda and so on.

OBJECTIVES OF THE STUDY

A MF is a single, large professionally managed investment organisation that combines the funds of many individual investors having similar investment objectives. MF designs its schemes to meet the needs of different types of investors in terms of nature of investments. It collects the savings of investors and invests them in a large and well diversified portfolio of securities such as money market instruments, corporate and government bonds and equity shares. MF is conceived as an institution for providing small investors with avenues of investment in the capital market. Small investors do not have adequate time, knowledge, experience and resource for direct access of capital market. They rely on an intermediary which undertakes investment decisions and provides professional expertise.

METHODOLOGY

This study is a blend of both the descriptive and the analytical methods. The researcher has collected the secondary data which consist of the books, reference materials, literature and journals, amfiindia.com, sebi.com, rbi.com, nsc.com, bsc.com, moneycontrol.com, Economic Times, Business line, and respective institutional.com such as utimf.com, sbimf.com, reliancemf.com icicipruamc.com. The researcher has also collected the annual reports which consist of balance sheet and revenue accounts statements of the respective schemes from the sampled institutions of both public and private sectors. Besides, the researcher has met some of the officials of the industry to know from the horse's mouth through unstructured interview schedule.

REVIEW OF LITERATURE

The Wharton (1962)1 study investigated MF performance for the period 1953-1958. The findings of this study are available in an article written by Irwin Brown published in 1965.The study examines the issues relating to investment policies, portfolio turnover ratio performance and impact of MFs and trading activity on the stock market. The study concludes that on an average, the fund had not performed later than the composite market from which they select their securities. The methodology used for contingency table compared the lower half of a particular sample in performance with the lower half with growth and also conversely.

Lee and Sunghoon (1995)7 evaluate various empirical models of the bond return generating process and suggest new benchmarks that are the most appropriate for evaluating the performance of managed bond portfolios. He provides statistical evidence concerning the performance of bond MFs and examines the sensitivity of performance inferences to benchmark choice. It analyses the cross sectional and inter temporal behaviour of performance measures to determine the relationship between performance and various fund characteristics. The study finds little evidence that the managers of bond fund as a class provide superior performance after accounting for expenses relative to various benchmark returns.

Joshua M. Pollet, Mungo, Wilson (December, 2008)12 in this study reveal that the actively managed MFs suffer from diminishing returns to scale. Funds should after investment become assets under management increases, although asset growth has little effect on the behaviour of the typical fund. They found that large–cap funds and small-cap funds are associated with better performance. Fund family growth is related to the introduction of new funds that hold different stocks from their existing siblings funds. With many siblings diversify less rapidly as they grow, it is suggested that the fund family may influence a fund portfolio strategy.

Arthur E Goodings (1975)25 attempts an endeavor in quantifying the perception of risk and return by the individuals, the author, summarised the stock evaluation process of three groups of investors of their perception and socio-economic profile on financial investments. The author found that, the important

differences and similarities were observed among group perception. The three groups of respondents were investment professionals, portfolio managers and non- professional investors.

Richard T Bliss (2008)35 in this study of the fields of psychology and sociology offers a large body of theory and evidence on , how individual behaviour differs from group behaviour, particularly for performance and risk taking activities. Relatively little attention however has been devoted to this topic in regard to managed portfolios, even though over 50 per cent of MFs are managed by a team. In this article the authors were provided an empirical examination of whether the funds managed by individual perform differently from funds managed by teams, using a sample of about 3000 equity MFs over 12 years horizon. The authors found that although the number of funds managed by teams has growth at seven times the rate of funds managed by individuals, no significant difference in the risk adjusted performance is observed between team managed and individually managed funds. Funds managed by teams, however are significantly less risky but exhibit lower turnover. In addition that, the total cost of owning a team managed MF is an average, nearly 50 bps lower per year than the cost of owning an individually managed MF. Finally team managed funds attract significantly greater investor flows than individually managed funds even after controlling for performance, risk and expenses.

K.D.Mehru (March, 2004)61 in the study of MFs has realised they have undergone considerable quantitative changes, since 1960 when they were introduced in India. The present study has been undertaken with the object to find out the perception of the investors towards MFs and also analyse the investor's preference and importance assign to different attributes. The MFs have caught the fancy of Indian investors. This study was an attempt to monitor the MFs looking and also the business connected with it in India with a perspective to enhance the investors' confidence in future. General perception has been that the MF has cheated the common investors and distributed their savings and plans. Regulatory framework and mechanism of quick detection of wrong doings of MFs followed by punishment, is the need of the hour in the given situation for common interest of all.

CLASSIFICATION OF DIFFERENT UTI MUTUAL FUNDS

The present study focuses on 15 different funds of UTI MF for three different periods [one year (2008-09) ,three year (2006-09) and five year (2004-09)]. Both NAV and market values of these funds for their different periods are totally considered to segment them into heterogeneous groups. Table 1 exemplifies the cluster centres based on NAV and market values. The frequency distribution of each cluster is obtained in the analysis.

TABLE 1: STATUS OF THE DIFFERENT MUTUAL FUNDS

Particlures	Cluster		
	1(Moderate funds)	2(Best funds)	3(Weak funds)
NAV UTI1	5.00	4.68	-12.18
NAV UTI2	9.54	15.03	5.47
NAV UTI3	6.80	21.73	20.77
Market UTI4	-5.95	5.19	-12.10
Market UTI5	11.39	15.66	10.10
Market UTI6	.00	21.38	22.46

TABLE 2: NO. OF FUNDS IN EACH CLUSTER

Particulars	Grade of fund	Number of funds in each Cluster
Cluster	1 (M)	3.000
	2 (B)	2.000
	3 (W)	10.000
Valid		15.000
Missing		.000

TABLE 3: NAME OF THE FUNDS BASED ON RESPECTIVE CLUSTERS FOR UTI

UTI Contra Fund	1
UTI Infrastructure Fund	3
UTI Mid-Cap Fund	3
UTI Opportunities Fund	1
UTI Balanced Fund	2
UTI Equity Tax Savings Plan	3
UTI Pharma Healthcare Fund	3
UTI Equity Fund	3
UTI Mahila Unit Scheme	1
UTI Banking Sector Fund	2
UTI Nifty Index Fund	3
UTI Service Industries Fund	3
UTI Marc Fund	3
UTI Master value Fund	3
UTI Sunder Value Fund	3

The final cluster centre clearly indicates the first cluster is moderate in nature with three different funds, namely UTI Opportunities Fund, UTI Contra Fund and UTI Mahila Unit Scheme. It is ascertained that the second cluster comprises only two funds namely, UTI Balanced Fund and UTI Banking Sector Fund. The frequency distribution of clusters largely indicated that the third cluster is weak in their market as well as NAV values. This group comprises ten funds namely, UTI Infrastructure Fund, UTI Mid-Cap Fund, UTI Equity Tax Savings Fund, UTI Pharma Healthcare Fund, UTI Equity Fund, UTI Nifty Index Fund, UTI Service Industries Fund, UTI Marc Fund, UTI Master Value Fund and UTI Sunder Value Fund, On the whole it can be concluded that these ten funds of UTI make with the respective three different periods of NAV and market values.

JUSTIFICATION OF CLUSTERS OF UTI MUTUAL FUNDS

The segmentation of UTI MF into three different heterogeneous groups is justified by the canonical correlation between groups and the discriminating variables. This canonical correlation is achieved through the formulation of the discriminant function with the linear combination of correlation co-efficient. The results of the canonical correlation are presented in Table 4.

TABLE 4: EIGEN VALUES

Function	Eigen value	% of Variance	Cumulative %	Canonical Correlation
1	119.923(a)	98.7	98.7	.996
2	1.638(a)	1.3	100.0	.788

First 2 canonical discriminant functions were used in the analysis.

TABLE 5: WILKS' LAMBDA

Test of Function(s)	Wilks' Lambda	Chi-square	Df	Sig.
1 through 2	.003	54.769	12	.000
2	.379	9.215	5	.101

From Tables 4 and 5 it is inferred that the canonical correlation co-efficient 0.996 and 0.788 are statistically significant with Wilks' lambda values 0.003 and 0.379 respectively. This shows that the formulation of three groups of heterogeneous MFs out of the existing 15 funds is justified.
The Structure Matrix estimates the variables exactly discreetly the heterogeneous groups.

TABLE 6: STRUCTURE MATRIX

Period of NAV and Market	Function	
	1(correlation)	2(correlation)
Market UTI 4	.050	.705(*)
Market UTI 6	-.209	.525(*)
NAV UTI 1	.124	.511(*)
NAV UTI 2	.032	.378(*)
Market UTI 5	.018	.363(*)
NAV UTI 3	-.074	.256(*)

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions: Variables ordered by absolute size of correlation within function.
*Largest absolute correlation between each variable and any discriminant function
It is found from Table 6 that the NAV and Market values based on five years is the crucial information to classify the funds into heterogeneous groups.
The canonical discriminant Table 7 presents two discriminant functions to estimate the average of NAV and Market values for the best performance of the MFs.

TABLE 7: CANONICAL DISCRIMINANT FUNCTION COEFFICIENTS

Particlures	Function	
	1 (weak funds coefficient)	2 (Best funds coefficient)
NAV UTI 1	.536	.083
NAV UTI 2	-.601	-.020
NAV UTI 3	.054	-.150
Market UTI 4	-.117	.150
Market UTI 5	1.306	-.032
Market UTI 6 (Constant)	-.793	.209
	5.679	1.316

Unstandardized coefficients
The two discriminant functions are linear in nature in the combination of NAV and Market values. This function sharply estimates the average value which decides best, moderate and poor performance of every MFs

UTI Marc Fund (Weak Fund)

Y1 = (0.536) U1 + (- 0.601) U2 + (0.054) U3 – (- 0.117) U4 + (1.306) U5 + (- 0.793) U6 + 5.679
Y1 = (0.536) (-12.18) + (- 0.601) (5.47) + (0.054) (20.77) – (- 0.117) (- 12.10) + (1.306) (10.10) + (- 0.793) (22.46) + 5.679
Y1 = (- 6.528) + (- 3.287) + 1.121 – 1.415 + 13.190 + (-17.810) + 5.679
Y1 = - 9.05
Y2 = (0.083) (- 12.18) - (- 0. 020) (5.47) + (- 0.150) (20.77) + (0.150) (- 12.10) – (- 0.032) (10.10) – (0.209) (22.46) + 1.316
Y2 = (-1.010) – (- 0.109) + (- 3.115) + (- 1.815) – (- 0.323) – 4.694 + 1.316
Y2 = - 8.886

UTI Banking Sector Fund (Best Fund)

Y1 = (0.536) (4.68) + (- 0.601)(15.03) + (0.054) (21.73) – (-0.117) (5.19) + (1.306) (15.66) + (-0.793) (21.38) +5.679
Y1= 2.508+ (-9.033) +1.173 –(-0.601)+ 20.451 + (-16.954) +5.679
Y1= 4.431
Y2= (0.083) (4.68) – (- 0.020) (15.03) + (-0.150) (21.73) +(0.150) (5.19) –(-0.032) (15.66) – (0.209) (21.38) + 1.316
Y2= 0.388 –(-0.300) + (-3.259) +0.778 – (-0.501) – 4.468 +1.316
Y2= - 4.444

The fund which occurs in the two discreminant values shown between Y1 = - 9.05 and Y2= - 8.886 is proved to be of weak performance. If the values go beyond the range of - 9.05, it can be concluded that the particular fund of UTI companies will face extinction in future. On the other hand if the value lies between 0 and - 8.886 then there is a possibility of the fund to perform moderately in future.
The existence of the different heterogeneous groups of public and private sectors fund is necessary for substantiate and determining the performance with the grading best , moderate and poor .

CLASSIFICATION OF THE STATUS OF THE RELIANCE MUTUAL FUNDS

The present study focuses on 12 different funds of Reliance MFs for three different periods (one year, three year and five year). Both NAV and market values of these funds for their different periods are totally considered to segment them into heterogeneous groups. Table 6.15 exemplifies the cluster centers based on NAV and market values. It is followed by the frequency distribution of each cluster obtained in the analysis.

TABLE 8: STATUS OF THE DIFFERENT MUTUAL FUNDS

Particulars	Cluster		
	1 (Weak fund)	2(Best fund)	3(Moderate fund)
NAV Reliance 1	-12.63	17.72	16.04
NAV Reliance 2	9.66	26.05	18.72
NAV Reliance 3	.00	32.53	.00
Market Reliance 4	-22.87	8.95	9.43
Market Reliance 5	-.75	15.98	18.09
Market Reliance 6	.00	23.58	.00

TABLE 9: NUMBER OF FUNDS IN EACH CLUSTER

Particulars	Cluster grade	No. of funds in each cluster
luster	1 (W)	1.000
	2 (B)	5.000
	3 (M)	6.000
Valid		12.000
Missing		3.000

TABLE 10: NAME OF THE FUNDS BASED ON RESPECTIVE CLUSTERS FOR RELIANCE MF

Reliance Equity Opportunity Fund Retail	3
Reliance Tax Saver fund	3
Reliance Pharma Fund	2
Reliance Equity Fund	3
Reliance Banking Fund	2
Reliance NRI Equity Fund	3
Reliance Diversified Power Sector Fund	2
Reliance Growth Fund	2
Reliance Vision Fund	2
Reliance Regular Savings Fund	3
Reliance Media Entertainment Fund	1
Reliance Index Fund Sensex Plan	3

From Table 9 it is found that the first cluster consists of the unique fund. Reliance Media Entertainment Fund which is very weak in its performance or yield. The second cluster comprises strong NAV and market values showing its best performance. It comprises five funds namely, Reliance Pharma Fund, Reliance Banking Fund, Reliance Diversified Power Fund, Reliance Growth Fund and Reliance Vision Fund. All these five funds are deemed to possess high NAV and market values.

The third cluster denotes the moderate performance of six funds namely, Reliance Equity Opportunity Retail Fund, Reliance Tax Saver Fund, Reliance Equity Fund, Reliance NRI Equity Fund and Reliance Regular Savings Fund. These six Reliance funds performed moderately for the span of one year to five years period.

JUSTIFICATION OF CLUSTERS OF RELIANCE MUTUAL FUNDS

The segmentation of Reliance MF into three different heterogeneous groups justified by the canonical correlation between groups and the discriminating variables. This canonical correlation is achieved through the formulation of the discriminant function with the linear combination of correlation co-efficient.

TABLE 11: EIGEN VALUES

Function	Eigen value	% of Variance	Cumulative %	Canonical Correlation
1	34.436(a)	79.4	79.4	.986
2	8.929(a)	20.6	100.0	.948

First 2 canonical discriminant functions were used in the analysis.

TABLE 12: WILKS' LAMBDA

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.003	38.111	12	.000
2	.101	14.920	5	.011

From Tables 11 and 12, it is inferred that the canonical correlation co-efficients 0.986 and 0.948 are statistically significant with Wilks' lambda values of 0.003 and 0.101 respectively. This shows the formulation of three groups of heterogeneous MFs out of the existing 12 funds is justified.

TABLE 13: STRUCTURE MATRIX

particlures	Function	
	1(correlation)	2(correlation)
NAVReliance 3	.471(*)	.443
MarketReliance6	.424(*)	.399
NAVReliance1	-.023	.487(*)
MarketReliance4	-.042	.378(*)
MarketReliance5	-.044	.210(*)
NAVReliance2	.055	.157(*)

From Table 13 it is found that the NAV and Market values based on five years are the crucial information to classify the funds into heterogeneous groups.

Table 14 presents the two canonical discriminant functions to estimate the average of NAV and Market values for the best performance of the MFs

TABLE 14: CANONICAL DISCRIMINANT FUNCTION COEFFICIENTS

particulars	Function	
	1(Weak funds coefficient)	2 (Best funds coefficient)
NAVReliance 1	.093	.122
NAVReliance2	.036	-.141
NAVReliance3	-.281	.381
Market Reliance 4	-.474	.213
Market Reliance5	.218	-.020
Market Reliance6 (Constant)	.824	-.444
	-6.673	-.662

The two discriminant functions are linear in nature, the combination of NAV and Market values. This function sharply estimates the average value which decides the best, moderate and poor performance of every MFs.

Reliance Media Entertainment Fund: (Weak Fund)

Y1=(0.093)×R1+ (0.036)R2 - (0.281) × R3 - (0.474)× R4 + (0.218) × R5 + (0.824) R6 --6.673

Y1 = (0.093) (-12.63) + (0.036) (9.66) + 0- (0.474) (-22.87) + (0.218) (-0.75) + 0 – 6.673

Y1= -1.17 + 0.35 + 0 + 10.81- 0.16 + 0 - 6.673

Y1= 3.16

Y2= (0.122)R1- (0.141) R2 + (0.381) R3 + (0.213) R4 - (0.020) R5 - (0.444) R6 - 0.662

Y2= (0.122) (-12.63) – (0.141) (9.66) + (0.381) 0 + (0.213) (-22.87) – (0.020) (-0.75) – (0.444) (0) -0.662Y2= -1.54 – 1.36 + 0 – 4.87 + 0.015 – 0 – 0.662

Y2= - 8.417

Reliance Banking Fund (Best Fund)

Y1= (0.093) (17.72) + (0.036) (26.05) +(- 0.281) (32.53) – (0.474) (8.95) + (0.218) (15.98) + (0.824) (23.58) – 6.673

Y1= 1.647 + 0.937 + (- 9.140) – (- 4.242) + 3.483 + 19.429 – 6.673

Y1 = 13.923

Y2 = (0.122) (17.72) – (0.141) (26.05) + (0.381) (32.53) + (0.213) (8.95) – (-0.020) (15.98) – (- 0 .444) (23. 58) – 0.662Y2= 2.162 – (-3.673) + 12.393 + 1.906 – (-0. 391) – (-10.469) – 0.662

Y2 = 30. 26

The fund which occurs in the two discreminant values shown between Y1 = 3.16 and Y2= -8.417 is proved to be of weak performance. If the values go beyond the above said range -8.417, it can be concluded that the particular fund of Reliance companies will face extinction in future. On the other hand if the value lies between 0 and 3.16 then there is a possibility of the fund to perform moderately in future.

The existence of the different heterogeneous groups of public and private sectors fund is the necessary for substantiate and determining the performance with the grading best, moderate and the poor .

CONCLUSION

MF institution is so unique and it launched its different object oriented schemes to the retail investors. Basically MF is an investment company channelising savings and invested the same funds in a wide number of securities in a way to minimise risk and ensure steady return with the help of fund managers and experts team. A fund grouping mathematical model has been used with the help of cluster analysis and canonical correlation. This model helps to evaluate the values of NAV and Market yearly average return for the sample institutional funds for identifying the best, moderate and poor funds.

REFERENCES

1. Wharton School of Finance and Commerce, "A study of Mutual Funds" University Pennsylvania, US. Government Printing office, 1962.
2. Lee, Sunghoon , "The Evaluation of bond Mutual Fund performance" unpublished Ph.d Thesis, State University of New York, Buffalo, 1995.
3. Joshua M.Pollet Mungo Wilson,"How does size affect Mutual Fund Behaviour"The Journal of finance, Cambridge.Vol.63,Iss.6 December, 2008 P 2941.
4. Arthur E.Goodings "Qualification of investors perception of common stock Risk and Return Dimension," Journal of Finance Vol.XXX No.5 December, 1975 PP 1301-1315.
5. Richard T.Bliss, "Performance characteristics of Individually managed versus Team managed Mutual Funds," Journal of portfolio management Newyork;. Vol.34, Iss.3 Spring, 2008, P 110.
6. K.D. Mehru, "Problems of Mutual Fund in India," Finance India, Delhi, Vol.18 Iss.1, March, 2004, P 220

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