Performance Analysis of Selected General Insurance companies in India during 2018-2019 using PROMETHEE II Method

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Abstract

General insurance protects the financial losses and damage to the policy holder's valuables and assets, thus they are vital to any economy, In India in spite of General insurance being mandatory in some sectors most of the companies are struggling to perform well with profitability and solvency. Company's financial performance is very crucial to stake holders, but the concept of financial performance is a tough, in terms of both description and extent. Only little agreement has emerged on what creates a valid set of performance criteria. For instance, researchers have suggested that studies on financial performance should include multiple criteria analysis. In this article the authors have identified the financial performance parameters, analysed the financial performance of 5 most prominent General Insurance companies in India based on these parameters using a Multi Criteria Decision Making method named PROMETHEE -II and ranked the companies.

Key words – Financial performance, General insurance, Promethee,

1. INTRODUCTION

Company's financial performance is very crucial to stake holders as it is an outcome which has been achieved by a group of individuals in an organization related to its authority and responsibility in achieving the goal legally, not against the law, and following the morale and ethic. Performance is the function of the capability of an organization to gain and achieve the resources in some different ways to improve competitive advantage. There are two kinds of performance, financial performance and non-financial performance. Financial performance emphasizes on variables related directly to financial report. Any firm's performance is assessed in three dimensions. The first dimension is firm's productivity, or processing of inputs to outputs efficiency. The second is profitability dimension, or the level of which firm's receiving are bigger than its costs. The third dimension is market premium, or the level of which firm's market value is exceeding its book value.

General Insurance business in India comprise of 30 general insurance companies presently offering non-life insurance products like Health Insurance, Motor Insurance, Home Insurance, Travel insurance,Fire Insurance, etc. General insurance protects the financial losses and damage to the policy holder's valuables and assets, thus they are vital to any economy, but most of them are struggling to perform well with profitability and solvency. The concept of financial performance is a tough, in terms of both description and extent. Only little agreement has emerged on what creates a valid set of performance criteria. For instance, researchers have suggested that studies on financial performance should include multiple criteria analysis. This multidimensional assessment of performance implies that different models or patterns of relationship between corporate performance and its determinants will emerge to demonstrate the various sets of relationships between dependent and independent variables.

2. STATEMENT OF THE PROBLEM

The topic of financial performance has established significant attention from researchers in the various areas of business and management. It has also been the main concern of corporate managers in all types of organizations since financial performance has effects to company's wellbeing and ultimately its existence. Good performance shows administration effectiveness and efficiency in making use of company's assets and this in turn benefits the country's economy at large.

In India there has been good performance of many sectors such as Information Technology, Pharma, Telecom, Truism, Banking…etc, the insurance sector didn't react to the development of Indian economy. The whole financial performance of insurance companies in India is somehow feeble expect for some companies which accomplished some profit. This study tries to scrutinise the weakness in the overall financial performance of insurance companies. The study's main objective then could be summarized in categorising the Insurance companies and ranking them in accordance with different factors of financial performance. This study specifically answers the following two questions.

1. What are the basic financial statement parameters to be considered for assessing financial performance of Indian Insurance Companies?
2. What is the level of financial performance and comparative financial performance rank of Indian insurance companies?

3. PROFILE OF GENERAL INSURANCE COMPANIES IN INDIA

The history of general insurance dates back to the Industrial Revolution in the west and the consequent growth of sea-faring trade and commerce in the 17th century. It came to India as a legacy of British occupation. General Insurance in India has its roots in the establishment of Triton Insurance Company Ltd., in the year 1850 in Calcutta by the British. In 1907, the Indian Mercantile Insurance Ltd, was set up. This was the first company to transact all classes of general insurance business.

In 1972 with the passing of the General Insurance Business (Nationalisation) Act, general insurance business was nationalized with effect from 1st January, 1973. 107 insurers were amalgamated and grouped into four companies, namely National Insurance Company Ltd., the New India Assurance Company Ltd., the Oriental Insurance Company Ltd and the United India Insurance Company Ltd.This millennium has seen insurance come a full circle in a journey extending to nearly 200 years. The process of re-opening of the sector had begun in the early 1990s and the last decade and more has seen it been opened up substantially. Many of the worlds top Insurance companies started functioning in India through Joint Venture.

In 1999, the Insurance Regulatory and Development Authority (IRDA) was constituted as an autonomous body to regulate and develop the insurance industry. The IRDA was incorporated as a statutory body in April, 2000. The key objectives of the IRDA include promotion of competition so as to enhance customer satisfaction through increased consumer choice and lower premiums, while ensuring the financial security of the insurance market.Today there are 31 general insurance companies including the ECGC and Agriculture Insurance Corporation of India operating in the country.

4. LITERATURE REVIEW

Wabita (2013) conducted a descriptive study to establish the factors of financial performance of insurance companies in Kenya. His findings indicate the three factors that majorly influenced financial performance of Insurance companies are growth, leverage and tangible assets

Makadok (2001) in his research thesis emphasizes that holding appropriate resources in an organization can help enhance organizational performance.

Studies by Chen and Wong (2004) on the Pakistan life insurance industry discovered that size, investment and liquidity are important determinants of the profitability of insurers.

Ahmed (2011) studied the Pakistani insurance industry, and noted that liquidity is not aimportant determinant of insurers' profitability. They suggested that, size and risk (loss ratio) are important and positively related to the profitability of insurance firms, leverage is negative and hence reduces the profitability of insurers significantly.

Malik (2011) investigated the determinants of the financial performance of 35 listed life and non-life companies covering the period from 2005 to 2009.He found that while size and capital have strong positive connotation with insurers' profitability, loss ratio and leverage have strong inverse association with profitability.

Adams and Buckle (2003) studied the Bermuda insurance industry and noted that highly leveraged and low liquid Bermuda insurers achieve better then their counterparts and their underwriting risk is directly related to a resilient financial performance.

Mwangi (2013) conducted an investigative study, through a descriptive survey, on the factors that influence the financial performance of insurance companies in Kenya. He sought to establish some of the key factors that determine financial performance and the extent to which they influence financial performance of insurance companies. He used profitability as a financial performance indicator. He noted that interest rate fluctuations, liquidity, and competition are the key factors that influence financial performance.

Uzar (2013) tried to measure the financial performance of public banks in Turkey with the help of PROMETHEE method. He compared the financial performance of public banks for pre-crisis (2002-2007) period and post crisis (2008-2012) period. The results revealed that global crisis did not affect Turkish public banks directly.

Bağcı and Rençber (2014) tried to compare the public and private banks' performance by using the PROMETHEE method. Research results showed that Halkbank (one of the state-owned bank in Turkey) was the most profitable bank among all state-owned and public banks.

5. SELECTION OF PARAMETERS FOR FINANCIAL PERFORMANCE ASSESSMENT

Based on scrutiny of Literature review the researcher has selectedthe following financial indices to assess their performance.

a) **Gross Written Premium (GWP)**
The total premium (direct and assumed) written by an insurer before deductions for reinsurance and ceding commissions. It includes additional and/or return premiums. Written does not imply collected, but the gross policy premium to be collected as of the issue date of the policy, regardless of the payment plan.

b) **Earned premium**
The term earned premium refers to the premium collected by an insurance company for the portion of a policy that has expired. It is what the insured party has paid for a portion of time in which the insurance policy was in effect, but has since expired.

c) **Incurred claims**
Incurred claims are those where the insured event has happened and for which the insurer may be liable if a claim is made. An insurer is usually not aware of all incurred claims at a particular point in time or for a current accounting period.

d) **Commission**
In insurance, a certain percentage of premium produced that is retained as compensation by insurance agents and brokers. It is known as commission or acquisition cost. In reinsurance, the primary insurance company usually pays the reinsurer its proportion of the gross premium it receives on a risk.

e) **Operating Expenses**
Such expenses are incurred in the regular operations of business and include rent, equipment, inventory costs, marketing, payroll, insurance, and funds allocated for research and development. Operating expenses are necessary and mandatory for most businesses.

f) **Operating profit**
It refers to an accounting metric measuring the profits a company generates from its core business functions, where the deduction of interest and taxes is excluded from the calculation. This operating value likewise excludes any profits earned from the firm's ancillary investments, such as earnings from other businesses a company may be partially vested in.

g) **Profit Before Tax(PBT)**
It is a measure that looks at a company's profits before the company has to pay corporate income tax. It deducts all expenses from revenue including interest expenses and operating expenses except for income tax.

h) **Profit After Tax(PAT)**
It is the earnings of a business after all income taxes have been deducted. This amount is the final, residual amount of profit generated by an organization.

In the past five year before Corona19 continuously all insurance companies had tough fight for performance and making profit. Among the Insurance Companies, many are performing well in Vehicle insurance and general insurance. They got good Claim ratio also. The insurance companies publish their annual reports inclusive of the above selected key performance indices. It is the percentage of claims costs incurred in relation to the premiums earned. It is equal to the claims rate divided by the risk premium rate. The following companies financially performing well with a good claim ratio are chosen for comparative analysis.

1. New India Assurance (Claim Ratio - 85.66%)
2. The Oriental Insurance (Claim Ratio - 85.39%)
3. Bajaj Allianz General Insurance (Claim Ratio - 66.72%)
4. Reliance General Insurance (Claim Ratio - 84.71%)
5. Tata AIG Insurance (Claim Ratio - 71.12%)

6. MATERIAL AND METHODS

Financial performance analysis problems, as it involves the optimisation of more than one criteria they are in fact multiple criteria decision problems. Many of the tools developed in the field of MCDM contribute both to the quality of the financial economic decision making process and to the quality of the resulting decisions.

There has been a considerable number of studies using different Multi-Criteria Decision Making (MCDM) methods such as Analytic Hierarchy Process (AHP), Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) and Data Envelopment Analysis (DEA) for comparing financial performance of Insurance companies, of which the author has decided to take PROMETHEE-II for the study as it is a complete ranking of the actions and it is based on the multi- criteria net flow.

6.1 PROMETHEE Method - Introduction

The Preference Ranking Organization Method for Enrichment of Evaluations is better known as the PROMETHEE methods. Based on mathematics and sociology, the PROMETHEE method was developed at the beginning of the 1980s and has been extensively studied and refined since then. It has specific application in decision making, and is used around the world in a wide variety of decision making situations, in fields such as manufacturing, commerce, governmental institutions, logistics, healthcare and education.

Rather than pointing out a "right" decision, the PROMETHEE method helps decision makers find the alternative that best suits their goal and their understanding of the problem. It provides a comprehensive and rational framework for structuring a decision problem, identifying and quantifying its conflicts and synergies, clusters of actions, and highlights the main alternatives and the structured reasoning behind.

6.2 METHODOLOGY

The PROMETHEE method is one of the most advanced Multi-criteria Decision Analysis (MCDA) methods which was firstly proposed by Brans in the early Eighties and subsequentlyextendedbyBransandVincke,Bransetal.BransandMareschal. Usually a multi-criteria problem is a complex mathematical problem as it does not find a solution which optimizes all of the criteria simultaneously. As other multicriteria methods, the PROMETHEE requires additional information to overcome the poorness of dominance relation onPreference(P)andIndifference(I),thusenrichingthedominancegraph.ThePROMETHEE isanoutrankingmethodforranking a finite set of alternative actions when multiple criteria, which are often conflicting, and multiple decision-makers areinvolved.PROMETHEEusespartialaggregationand by a pairwise comparison of alternative actions, it allows to verifywhetherunder specific conditionsoneactionoutranks or not the others. The PROMETHEE methods are a family of outranking methods: PROMETHEE I (partial ranking); PROMETHEEII(completeranking);PROMETHEEIII (ranking based on intervals); PROMOTHEE IV(continuous case); PROMETHEEV(includingsegmentationconstraints); and PROMOTHEE VI (evaluating the degree of hardness of a multi-criteria decision problem with respect to theweights given to the criteria, i.e., for human brain representation).

In this paper we implement PROMOTHEE II in order to rank alternatives according to different criteria which have to be maximized or minimized. Once the decision group was constituted, we proceeded according to the following subsequent steps.

6.3 STEPS INVOLVED IN PROMETHEE METHOD

Step 1 (construction of an evaluation matrix). A double entry table for the selected criteria and alternatives has been gathered by using cardinal (quantitative) and ordinal (qualitative) data. This matrix accounts for deviations of evaluations on pairwise comparisons of two alternatives, “a” and “b”, on eachcriterion.

Step 2 (identification of the preference function Pj(a, b) for each criterion j). The preference function is used to findhowmuchalternative aispreferredtoalternative b and it translates the difference in evaluations ofthetwo

alternatives into a preference degree. These preferencesare represented in a numerical scale ranging between 0 and 1. The value "1" represents a strong preference of alternative aover b, whereas "0" represents the indifferent preference value between the two alternatives. Six types of preference functions have been proposed by the developers of the PROMETHEEmethodology:Usual criterion,Quasicriterion (U-shape), Criterion withlinear preference (V-shape), Level criterion,Linearcriterion,andGaussiancriterion

Step3(calculationoftheoverallpreferenceindexΠ(*a*,)). TheoverallpreferenceindexΠ(*a*,*b*)representstheintensity ofpreferenceof*a*over*b*and it is calculatedasfollows(1):

$$\Pi(a,b) = \sum_{j=1}^{k} w_j P_j(a,b)$$

WhereΠ(a,b)istheoverallpreferenceintensityofaoverb withrespecttoalloftheKcriteria,$w_j$istheweightofcriterion j,andP_j (a,b)isthepreferencefunctionofaover bwith respecttocriterion$j$.ClearlyΠ(a,b)~0impliesaweakglobal preference of aover b, whereas Π(a,b)∼1 implies a strong global preference of aoverb.

Step4(calculationoftheoutrankingflows,i.e., positiveflow Φ^+(a)andnegativeflowΦ^-(a).InPROMETHEEmethod twoflowmeasurescanbedeterminedforeachalternative.There are a positive flow (it expresses how alternative a is outranking all the others)

$$\Phi^+(a) = \frac{1}{n-1}\sum_{b\in A}\Pi(a,b)$$

Andnegativeflow(itexpresseshowalternativeaisoutranked by all theothers)

$$\Phi^-(a) = \frac{1}{n-1}\sum_{b\in A}\Pi(b,a)$$

Step5 (comparisonoftheoutrankingflowstodefinethealternatives complete ranking). In detail, PROMETHEE II,hereimplemented,providesacompleterankingofthealternatives by calculating the net flow $\Phi(a) = \Phi^+(a) - \Phi^-(a)$.

The higher the net flow, the better the alternative. When PRPMETHEE IIisconsidered,noincomparabilityremains, as all the alternatives are comparable on all the criteria. It is worth noting that the net flow provides a complete ranking and thus can be compared with a utilityfunction.

7. DATA ANALYSIS

Process of transforming, and Promethee modelling and analysis of data to identify comparative ranking of Selected insurance companies, it start with raw data the Financial Performance Matrix.

7.1 FINANCIAL PERFORMANCE MATRIX

Insurance Financial Performance Indicators are defined as the quantitative values used to determine how efficiently and effectively specific insurance financial goals and objectives are achieved by the insurance company over a certain period of time. Gross written premium, Earned premium, Incurred claims, Commission, Operating Expenses, Operating profit, Profit before Tax, Profit after Tax are the Financial Performance Indicators we have selected for the study. The value of these parameters is collected from the balance sheets of the respective insurance company and has been formulated into a matrix for analysis.

Table1. Performance indices of selected Insurance companies

Name of the Insurance Company	Gross Written premium	Earned premium	Incurred claims	Commission	Operating Expenses	Operating profit	Profit Before Tax	Profit After Tax
New India Assurance Company Limited (NIA)	2681828	2161166	2054869	221063	408817	-144130	67701	60477
Oriental Insurance Company Limited (OIC)	1348475	1084539	1124808	65854	246552	-40486	-42899	-29366
Bajaj Allianz General	1109701	777446	557344	37472	180711	115152	11515	77986

Insurance Company (BAI)							2	
Reliance General Insurance Company Limited (RGI)	619103	353225	303130	1181	97470	16192	22102	21202
TATA AIG	774266	457821	358637	2806	1414910	3285	13411	11208
MAX	*2681828*	*2161166*	*2054869*	*221063*	*1414910*	*115152*	*115152*	*77986*
MIN	*619103*	*353225*	*303130*	*1181*	*97470*	*-144130*	*-42899*	*-29366*

7.2 Normalization

In MCDA normalization is a vital point of many methods, necessary for proper calculations. It is required to convert all performance parameters into same comparative scale. It is important to note that profit type parameters and cost type parameters should be normalized differently. In the given matrix we use Beneficial Criteria to normalise Profit type parameters and Non-Beneficial Criteria to normalise Cost type.

Table2.Normalised Evaluation Matrix

	Beneficial Criteria/Non-Beneficial Criteria→	Beneficial Criteria	Beneficial Criteria	Non-Beneficial Criteria	Beneficial Criteria	Non-Beneficial Criteria	Beneficial Criteria	Beneficial Criteria	Beneficial Criteria
	Insurance Company Name↓	Gross Written premium	Earned premium	Incurred claims	Commission	Operating Expenses	Operating profit	Profit Before Tax	Profit After Tax
NIA	New India Assurance Company Limited	1.00	1.00	0.00	1.00	0.76	0.00	0.70	0.84
OIC	Oriental Insurance Company Limited	0.35	0.40	0.53	0.29	0.89	0.40	0.00	0.00
BAI	Bajaj Allianz General Insurance Company	0.24	0.23	0.85	0.17	0.94	1.00	1.00	1.00
RGI	Reliance General Insurance Company Limited	0.00	0.00	1.00	0.00	1.00	0.62	0.41	0.47
TAI	TATA AIG	0.08	0.06	0.97	0.01	0.00	0.57	0.36	0.38

For beneficial criteria

$$r_{ij} = \frac{x_{ij} - \min_j \left(x_{ij}\right)}{\max_j \left(x_{ij}\right) - \min_j \left(x_{ij}\right)}$$

For Non beneficial criteria

$$r_{ij} = \frac{\max_j \left(x_{ij}\right) - x_{ij}}{\max_j \left(x_{ij}\right) - \min_j \left(x_{ij}\right)}$$

7.3 Difference of ith alternative with other alternative.

The difference between ithalternative with other alternative is then calculated to find the comparative performance of one insurance company in a particular parameter.

Table3.The Difference of ith alternative with reference to another alternative.

Insurance Company Limited	Gross Written premium	Earned premium	Incurred claims	Commission	Operating Expenses	Operating profit	Profit Before Tax	Profit After Tax
NIA-OIC	0.6464	0.5955	-0.5309	0.7059	-0.1232	-0.3997	0.6998	0.8369
NIA-BAI	0.7622	0.7654	-0.8549	0.8350	-0.1731	-1.0000	-0.3002	-0.1631
NIA-RGI	1.0000	1.0000	-1.0000	1.0000	-0.2363	-0.6183	0.2885	0.3659
NIA-TAI	0.9248	0.9421	-0.9683	0.9926	0.7637	-0.5686	0.3435	0.4589
OIC-NIA	-0.6464	-0.5955	0.5309	-0.7059	0.1232	0.3997	-0.6998	-0.8369
OIC-BAI	0.1158	0.1699	-0.3239	0.1291	-0.0500	-0.6003	-1.0000	-1.0000
OIC-RGI	0.3536	0.4045	-0.4691	0.2941	-0.1132	-0.2186	-0.4113	-0.4711
OIC-TAI	0.2784	0.3466	-0.4374	0.2867	0.8868	-0.1688	-0.3563	-0.3780
BAI-NIA	-0.7622	-0.7654	0.8549	-0.8350	0.1731	1.0000	0.3002	0.1631
BAI-OIC	-0.1158	-0.1699	0.3239	-0.1291	0.0500	0.6003	1.0000	1.0000
BAI-RGI	0.2378	0.2346	-0.1451	0.1650	-0.0632	0.3817	0.5887	0.5289
BAI-TAI	0.1626	0.1768	-0.1134	0.1577	0.9368	0.4314	0.6437	0.6220
RGI-NIA	-1.0000	-1.0000	1.0000	-1.0000	0.2363	0.6183	-0.2885	-0.3659
RGI-OIC	-0.3536	-0.4045	0.4691	-0.2941	0.1132	0.2186	0.4113	0.4711
RGI-BAI	-0.2378	-0.2346	0.1451	-0.1650	0.0632	-0.3817	-0.5887	-0.5289
RGI-TAI	-0.0752	-0.0579	0.0317	-0.0074	1.0000	0.0498	0.0550	0.0931
TAI-NIA	-0.9248	-0.9421	0.9683	-0.9926	-0.7637	0.5686	-0.3435	-0.4589
TAI-OIC	-0.2784	-0.3466	0.4374	-0.2867	-0.8868	0.1688	0.3563	0.3780
TAI-BAI	-0.1626	-0.1768	0.1134	-0.1577	-0.9368	-0.4314	-0.6437	-0.6220
TAI-RGI	0.0752	0.0579	-0.0317	0.0074	-1.0000	-0.0498	-0.0550	-0.0931

7.4 Replacing negatives with zero

In PROMETHEE II method calculation we take into consideration only over performance and underperformance is considered zero in the comparative scale.

Table4. Replacing negatives with zero, Calculation of weighted average assuming equal weights.

										Assuming equal weights.
Insurance Company Limited	Gross Written premium	Earned premium	Incurred claims	Commission	Operating Expenses	Operating profit	Profit Before Tax	Profit After Tax		Weighted Average
NIA-OIC	0.6464	0.5955	0.0000	0.7059	0.0000	0.0000	0.6998	0.8369		0.4356
NIA-BAI	0.7622	0.7654	0.0000	0.8350	0.0000	0.0000	0.0000	0.0000		0.2953
NIA-RGI	1.0000	1.0000	0.0000	1.0000	0.0000	0.0000	0.2885	0.3659		0.4568
NIA-TAI	0.9248	0.9421	0.0000	0.9926	0.7637	0.0000	0.3435	0.4589		0.5532
OIC-NIA	0.0000	0.0000	0.5309	0.0000	0.1232	0.3997	0.0000	0.0000		0.1317
OIC-BAI	0.1158	0.1699	0.0000	0.1291	0.0000	0.0000	0.0000	0.0000		0.0518
OIC-RGI	0.3536	0.4045	0.0000	0.2941	0.0000	0.0000	0.0000	0.0000		0.1315
OIC-TAI	0.2784	0.3466	0.0000	0.2867	0.8868	0.0000	0.0000	0.0000		0.2248
BAI-NIA	0.0000	0.0000	0.8549	0.0000	0.1731	1.0000	0.3002	0.1631		0.3114
BAI-OIC	0.0000	0.0000	0.3239	0.0000	0.0500	0.6003	1.0000	1.0000		0.3718
BAI-RGI	0.2378	0.2346	0.0000	0.1650	0.0000	0.3817	0.5887	0.5289		0.2671
BAI-TAI	0.1626	0.1768	0.0000	0.1577	0.9368	0.4314	0.6437	0.6220		0.3914
RGI-NIA	0.0000	0.0000	1.0000	0.0000	0.2363	0.6183	0.0000	0.0000		0.2318
RGI-OIC	0.0000	0.0000	0.4691	0.0000	0.1132	0.2186	0.4113	0.4711		0.2104
RGI-BAI	0.0000	0.0000	0.1451	0.0000	0.0632	0.0000	0.0000	0.0000		0.0260
RGI-TAI	0.0000	0.0000	0.0317	0.0000	1.0000	0.0498	0.0550	0.0931		0.1537
TAI-NIA	0.0000	0.0000	0.9683	0.0000	0.0000	0.5686	0.0000	0.0000		0.1921
TAI-OIC	0.0000	0.0000	0.4374	0.0000	0.0000	0.1688	0.3563	0.3780		0.1676
TAI-BAI	0.0000	0.0000	0.1134	0.0000	0.0000	0.0000	0.0000	0.0000		0.0142
TAI-RGI	0.0752	0.0579	0.0000	0.0074	0.0000	0.0000	0.0000	0.0000		0.0176

Thereafter weighted average is calculated using the formula,

$$\pi(a,b) = \sum_{k=1}^{q} P_k(a,b) \cdot w_k$$

theauthor has decided to give equal weight to all the parameters and therefore $w_k = 1/8$

7.5 Entry flow and Leaving flow calculation

ϕ+(a) represents positive outranking flow or is known as leaving flow (how a dominates all the other alternatives), and ***ϕ−(a)*** represents the negative outranking flow or is known as entering flow (how a is dominated by all the other alternatives).

Table5 Leaving Flow and Entry Flow

	NIA	OIC	BAI	RGI	TAI	Leaving flow
NIA		0.435557	0.295309	0.456795	0.553206	0.435217
OIC	0.13173		0.051837	0.131528	0.224825	0.13498
BAI	0.311418	0.371773		0.26711	0.391386	0.335422
RGI	0.231832	0.210393	0.026038		0.153694	0.155489
TAI	0.192108	0.167554	0.014179	0.017558		0.09785
Entry Flow	0.216772	0.296319	0.096841	0.218248	0.330778	

Leaving flow

$$\phi^+(a) = \frac{1}{n-1} \sum_{x \in A} \pi(a,x)$$

Entry Flow

$$\phi^-(a) = \frac{1}{n-1} \sum_{x \in A} \pi(x,a)$$

Net out ranking

Net out ranking = Leaving flow - Entry Flow

3.6 Ranking the actions by a complete ranking (PROMETHEE II).

The complete ranking of alternatives is done to avoid incomparability using the formula.

$\Phi(a) = \phi^+(a) - \phi^-(a)$.where ϕ (a) denotes the net outranking flow for each alternative. Then the ranking is done based on the value of net out ranking. The outcome is depicted as follows.

Table6 Performance Rank

	Leaving flow	Entry Flow	Net out ranking	Rank
NIA	0.435217	0.216772	0.218445	2
OIC	0.13498	0.296319	-0.161339	4
BAI	0.335422	0.096841	0.238581	1
RGI	0.155489	0.218248	-0.062759	3
TAI	0.09785	0.330778	-0.232928	5

CONCLUSION

This study identified that performance dimensions of General Insurance companies in India include Premium collection, Claim settlement, Commission paid, Expenses and Profitability. of these above mentioned

parameters Claims and Expenses are non-beneficial parameters and the remaining are beneficial parameters and hence the companies need to take measures to reduce claims and expenses and increase the reaming measures such as Premium collection, Profitability...etc. In order to reduce claims and expenses Insurance companies need to improve actuarial practice and reduce labour by automation. And to improve beneficial parameters company need to diversify, Some of the new ventures in the last few years include introduction of agriculture and livestock insurance, micro insurance and tactful.

Based on the above mentioned performance parameters PROMETHEE II Method applied on the selected 5 top insurance players in India to analyse their comparative performance using the selected 8 keyperformance indicators. Among the five banks Bajaj Allianz General Insurance ranked first, New India Assurance ranked second, Reliance General Insurance ranked third, The Oriental Insurance fourth and Tata AIG Insurance.

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