Chapter 1

Research Methodology
Chapter 1 - Research Methodology

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Chapter 1
Research Methodology

1.1 Introduction
Productivity is like love. Much is said about the benefits of having more of it, but there is disagreement on how best to achieve it. One reason for this is a lack of consensus on what “it” really is. Many economists are also familiar with the methods that are used for measuring aggregate productivity, by which we mean the productivity of unique entities such as nations or entire industries. National productivity estimates are of special importance because they are an input into many aspects of public policy making.

Productivity in economics is the ratio of what is produced to what is required to produce. Productivity is the measure on production efficiency. **Productivity model** is a measurement method which is used in practice for measuring productivity. Productivity model must be able to solve the formula \( \frac{Output}{Input} \) when there are many different outputs and inputs.

Productivity is an important success factor for all organizations. Improvements in productivity have been recognized to have a major impact on many economic and social phenomena, e.g. economic growth and higher standard of living. Companies must continuously improve productivity in order to stay profitable. Therefore, productivity should also be managed. Productivity measurement is one traditional and practical tool for managing productivity. There are several different methods for productivity measurement. Most of the methods are based on quantitative data on operations. In many cases, it is quite difficult and sometimes even impossible to collect the data needed for productivity measurement. An example of this situation is the work of professionals and experts. Their work is knowledge-intensive and the inputs and outputs are not easily quantifiable. Therefore, the traditional productivity measures are not applicable. In these types of situations, there is a need for other kind of measures. An old but scarcely used approach to productivity measurement is subjective productivity measurement. Subjective productivity measures are not based on quantitative operational information. Instead, they are based on personnel’s subjective assessments. The data is collected, e.g., using survey questionnaires. The objective of the paper is to present subjective productivity measurement as a new and potential managerial tool for productivity measurement. In addition, some evidence regarding the practicality and usefulness of the method is presented.
1.2 Origin of Insurance
It is rightly said that the origin of insurance is lost in antiquity.

However, evidences are on record, which show that earliest form of insurance was in
the nature of marine trade. “Evidences are also on record that arrangements
embodying the ideas of insurance were being practiced in Babylone and India,
centuries ago. References are also available in the Code of Hammurabi Manu (Manav
Dharm Shastra). The word ’YOGAKSHEMA’ used in Rig Veda - a most sacred book
of Hindus suggests that some form of community insurance was being carried on by
the Aryans in our country well over 5,000 years ago. The existence of burial societies
during the Buddhist period also acknowledges the existence of insurance contract
which used to help the family of a deceased person by building a house and protecting
the widows. The earliest form of insurance was in the nature of Marine Insurance.
Then came Fire Insurance and Life Insurance and later on the Miscellaneous
Insurance contract.”

1.2.1 What is Insurance?

1. “The business of insurance is related to the protection of the economic value
of assets. Every asset has a value. The asset would have been created through
the efforts of the owner, in the expectation that, either through the income
generated therefrom or some other output, some of his needs would be met. In
the case of a factory or a cow, the productions sold and income generated. In
the case of a motor car, it provides comfort and convenience in transportation.
There is no direct income. There is a normally expected life time for the asset
during which time it is expected to perform. The owner, aware of this, can so
manage his affairs that by the end of that life time, a substitute is made
available to ensure that the value or income is not lost. However, if the asset
gets lost earlier, being destroyed or made non-functional, through an accident
or other unfortunate event, the owner and those deriving benefits therefrom
suffer. Insurance is a mechanism that helps to reduce such adverse
consequences.”

1.2.2 Purpose and Need of Insurance

2. “Assets are insured, because they are likely to be destroyed or made non-
functional, through an accidental occurrence. Such possible occurrences are
called perils. Fire, floods, breakdowns, lightning and earthquakes are perils. The damage that these perils may cause the asset, is the risk.

3. The risk only means that there is a possibility of loss or damage. It may or may not happen. There has to be an uncertainty about the risk. Insurance is relevant only if there is uncertainties. If there is no uncertainty about the occurrences of an event, it can not be insured against.

4. There are other meanings of the term “risk”. To the ordinary man in the street “risk” means exposure to danger. In insurance practice, “risk” is also used to refer to the peril or loss producing event. For example, it is said that fire insurance covers the risks of fire, explosion, cyclone, flood etc. Again, it is used to refer to the property covered by insurance, for example, a timber construction is considered to be a bad “risk” for fire insurance purpose. Here, the term “risk” refers to the subject matter of insurance.

5. Conceptually, the mechanism of insurance is very simple. People who are exposed to the same risks come together and agree that, if any one of the members suffers a loss, the others will share the loss and make good to the person who lost. All people who send goods by ship are exposed to the same risk related to water damage, ship, sinking, piracy, etc. Those owning factories are not exposed to these risks, but they are exposed to different kinds of risks like, fire, hailstorms, earthquakes, lightning, burglary, etc. Like this, different kinds of risks can be identified and separate groups made, including those exposed to such risks. By this method, the risk is spread among the community and the likely big impact on one is reduced to smaller manageable impacts on all.

6. The manner in which the loss is to be shared can be determined beforehand. It may be proportional to the likely loss that each person is likely to suffer, which is indicative of the benefit he would receive if the peril befell him. The share could be collected from the members after the loss has occurred or likely shares may be collected in advance, at the time of admission to the group. Insurance companies collect in advance and create a fund from which the losses are paid.

7. A human life is also an income generating asset. This asset also can be lost through unexpectedly early death or made non-functional through sickness and disabilities caused by accidents. Accidents may or may not happen. Death
will happen, but the timing is uncertain. If it happens around the time of one’s retirement, when it could be expected that the income will normally cease, the person concerned could have made some other arrangements to meet the continuing needs. But if it happens much earlier when the alternate arrangements are not in place, insurance is necessary to help those dependent on the income.

8. In the case of a human being, he may have made arrangements for his needs after his retirement. These would have been made on the basis of some expectations like he may live for another 15 years, or that his children will look after him. If any of these expectations do not become true, the original arrangement would become inadequate and there could be difficulties. Living too long can be as much a problem as dying too young. These are risks which need to be safeguarded against. Insurance takes care.

9. Insurance does not protect the asset. It does not prevent its loss due to the peril. The peril cannot be avoided through insurance. The peril can sometimes be avoided, through better safety and damage control management. Insurance only tries to reduce the impact of the risk on the owner of the asset and those who depend on that asset. It compensates may not be fully, the losses. Only economic or financial losses can be compensated.

10. The concept of insurance has been extended beyond the coverage of tangible assets. Exporters run the risk of the importers in the other country defaulting as well as losses due to sudden changes in currency exchange rates economic policies or political disturbances. These risks are now insured. Doctors run the risk of being charged with negligence and subsequent liability for damages. The amounts in question can be fairly large, beyond the capacity of individuals to bear. These are insured. Thus, insurance is extended to intangibles. In some countries, the voice of a singer or the legs of a dance may be insured, even though the advantage of spread may not be available in these cases.

11. Satisfaction of economic needs requires generation of income from some source. If the property, which is the source of such income is lost fully or partially, permanently or temporarily, the income too would stop. The purpose of insurance is to safeguard against such misfortunes by making good the losses of the unfortunate few, through the help of the fortunate many, who
were exposed to the same risk but saved from the misfortune. Thus the essence of insurance is to share losses and substitute certainty by uncertainty.

12. There are certain basic principles which make it possible for insurance to remain popular and a fair arrangement. The first is the fact that people are exposed to risks and that the consequences of such risks are difficult for any one individual to bear. It becomes bearable when the community shares the burden. The second is that no one person should be in a position to make the risk happen. In other words; none is the group should set fire to his assets and ask others to share the costs of damage. This would be taking unfair advantage of an arrangement put into place to protect people from the risks they are exposed to. The occurrence has to be random, accidental, and not the deliberate creation of the insured person.”

1.3 Subject-Matter of Insurance

After analyzing the various concepts of insurance, a question arises, "what is the subject-matter of insurance?" The subject matter of insurance may be any property, right, interest, life or liability. Thus, in fire insurance the subject matter may be a house or a factory. In case of life insurance the subject matter is the life of a person and in an accident insurance the subject matter is one's liability for bodily injuries or damages to the property of a third party.

In marine insurance it is a ship, or its cargo, or the freight. The subject-matter is written in the policy itself.”

1.4 Scope of Insurance

Riegel and Miller in their book 'Insurance Principles and Practices' have written the scope of insurance as under: Every, individual is exposed to innumerable risks connected with life physical exertion, business and recreation and most individuals are interested in escaping, if possible the injurious consequences of such risks. The scope of insurance is defined as: “that there are very few events against the happening of which insurance is now-a-days unable to provide protection. The present day life is becoming more complex and our social systems are fast changing and so a person feels isolated. The result is that the scope of insurance is increasing day by day. To the question: What can an insurance do? the answer is that except giving back the life of a dead person, insurance can restore the loss to the extent it promises to do. Insurance can make good the loss suffered by an individual and put
him back in the same position as he was before the event took place. Life insurance provides immediate financial assistance to the family of the deceased and thus helps avoiding destitution”

1.5 Kinds of Insurance

The different kinds of insurance are as under:

(A) Life Insurance:

“Life Insurance gives two-fold advantages, the first in the form of small savings and the other in the form of security in the event of pre-mature death. Thus, a life insurance is a combination of savings as well as security element. By taking a life insurance policy one feels a sense of security. He is assured that insurance company will come to the rescue of his family in case of his pre-mature death. If there is no claim and the policy matures for payment, the savings so made will be sufficient to meet the old age expenses. In India, the business of life insurance is completely nationalized and Life Insurance Corporation transacts life insurance business. Personal accident and sickness insurance cover the risk of death due to accident and also pay compensation for self-injury and sickness.

(B) General insurance:

Broadly speaking, except life insurance, all types of insurance come under general insurance. The important branches of the general insurance are as under:

1. Marine Insurance: This is the oldest form of insurance business and covers all the marine perils. The perils of the sea are fire, attacks by enemies, pirates and coverers, thieves, jettison, arrest restraint and detainment, barratry, collision with another ship and rocks, etc. With all these perils not only the ship is damaged or destroyed but there is also the loss of cargo and consequently the loss of freight. Therefore, the marine insurance covers the risk of ship, cargo and freight on high seas. However, with the growing demand, marine insurance policy now provides cargo protection from the time the goods leaves, the warehouse until it reaches to the buyer's god own at destination. Thus, inland risks are also covered.

2. Fire Insurance: This insurance covers the risk from fire. With the industrialization in every country, there is an increasing demand of fire insurance because there is every chance of fire spreading in big factories; god owns, warehouses, and ships. The fire insurance not only covers the risk of fire but the consequential losses from such fire are also covered. War risk, turmoil, riots can
also be insured.

3. **Liability Insurance:** This includes the risk of liability towards third parties which the insured is required to pay as an employer. For example, damage to property belonging to third person in the case of accident. Similarly, an employer is responsible for making payments to his employees when they suffer injury or are involved in accidental death during the course of duty. The fidelity insurance is another form of liability insurance.

4. **Social Insurance:** Sir William Beveridge has defined social insurance as the "giving in return for contribution, benefits upto subsistence level, as of right and without means tests, so that an individual may build freely upon it. Thus, social insurance implies that it is compulsory and that men stand together with their fellows."

The main object of social insurance is to protect and uplift the weaker sections of the society. In a welfare state, like India, it is the duty of the Government to give social insurance to its masses. Social insurance may be in different forms, like pension plans, disability benefits, unemployment benefits, sickness insurance and industrial insurance, etc. Premium under such insurance schemes is mainly paid by Government and employers. Employees or beneficiaries pay only a nominal amount according to their capacity to pay.

5. **Miscellaneous Insurance:** Besides the above, cattle insurance, crop insurance, theft and burglary insurance are some of the other important forms of insurances, now developing with the advancement of the human life. Export credit insurance, state employees insurance and guarantee insurance also come under this category."
1.6 Why Life Insurance

Life insurance covers the risk of death, encourages compulsory saving, helps to achieve the purpose of the life assured, provides loan and relieves tax.

It covers the Risk of Death

“The risk of death is covered under insurance schemes but not under ordinary savings plans. In case of death, insurance pays full sum assured, which would be several times larger than the total of the premium paid. Under ordinary savings plans, only accumulated amount is payable.

It Encourages Compulsory Saving

After taking insurance, if the premium is not paid, the policy lapses. Therefore, the insured is forced to go on paying premium. In other words, it is compulsory. A savings deposit can be withdrawn very easily.

Easy Settlement and Protection against Creditors

Once nomination or assignment is made, a claim under life insurance can be settled in a simple way. Under M.W.P Act, the policy moneys become a kind of trust, which cannot be taken away, even by the creditors.

It helps to achieve the Purpose of the Life Assured

If a lump sum amount is received in the hands of anybody, it is quite likely that the amount might be spent unwisely or in a speculative way. To overcome this risk, the life assured can provide that the claim amount be given in installments.

Insurance Facilitates Liquidity

If a policy-holder is not in a position to pay the premium, he can surrender the policy for a cash sum.

Loan Facility and Tax Relief

He can also take a loan for a temporary period to tide over the difficulty. Some times, a life insurance policy is acceptable as security for a commercial loan. By paying the insurance premium, the assured obtains significant reliefs in income tax and wealth tax.”

The subject matter of insurance is human life and the object of Life Insurance is to protect the human life from future uncertainties. Details of basis of life insurance are given in the following table;
### Table 1.1

#### Basis of Life Insurance

<table>
<thead>
<tr>
<th>Basis</th>
<th>Life Insurance</th>
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<tr>
<td>1. Subject matter</td>
<td>The subject matter of insurance is human life</td>
</tr>
<tr>
<td>2. Object</td>
<td>The object of Life Insurance is to protect the human life from future uncertainties</td>
</tr>
<tr>
<td>3. Element</td>
<td>Life Insurance has the elements of protection and investment, both.</td>
</tr>
<tr>
<td>4. Insurable interest</td>
<td>Insurable interest must be present at the time of effecting the policy but need not necessary at the time when the claim falls due.</td>
</tr>
<tr>
<td>5. Duration</td>
<td>The duration of Life Insurance policy usually exceeds a year</td>
</tr>
<tr>
<td>6. Indemnity</td>
<td>Life Insurance is not indemnity insurance. The sum assured is paid either on the happening of certain event or on maturity of the policy.</td>
</tr>
<tr>
<td>7. Classification of risk</td>
<td>Classification of risk in Life Insurance is much easy.</td>
</tr>
<tr>
<td>8. Surrender value</td>
<td>Life Insurance policy has surrender value.</td>
</tr>
<tr>
<td>9. Policy amount</td>
<td>One can insure for any amount in Life Insurance</td>
</tr>
<tr>
<td>10. Payment of premium</td>
<td>Payment of premium is made in installments.</td>
</tr>
</tbody>
</table>


Subject matter, object, element, insurable interest, duration, indemnity, risk, surrender value, policy amount, payment of premium and moral hazard of life insurance has been analyzed in above table.

### 1.7 Need of the Study

#### Importance of Insurance Sector

Risk is found everywhere in our society. It cannot be eliminated only it can be minimized. Human life is full of many types of risk. There is a risk when a man walks on the road, travels in a bus, train or an airplane and when he is engaged in trade, profession or business. Also, there is a risk when property is destroyed by fire, flood and earthquake. Thus, the involvement of risk is inescapable in our life. Insurance is a method by which we can spread over the risk upon whole society. It is a way of reducing uncertainty of occurrence of an event.
Importance of Human Resources and Productivity
By considering the importance of insurance section, human resources and how they increase productivity this subject has been selected for the purpose of study.

“At the national level, steady growth in productivity guarantees non-inflationary increases in wages as well as solves pressing problems of unemployment, increased trade deficit and an unstable currency (exchange rate). In business, productivity improvements can lead to more responsive customer service, increased cash flow, and improved return on assets and greater profits. As revealed by economic theory, more profits will translate to availability of investible funds for the purpose of capacity expansion and the creation of new jobs; hence, increased productivity becomes a panacea to unemployment problem. Enhanced productivity will equally contribute to the competitiveness of a business or an economy in both domestic and foreign markets.”8

1.8 Statement of Problem
Human Resource plays a significant role to help the organization reach its goals. There are a lot of researches and papers on efficiency and productivity of Industrial sector but the number of researches on efficiency and productivity of service sector are very less. In addition the number of researches on efficiency and productivity of human resources are scarce and rare.
In this research the problem is how it is possible to calculate efficiency of human resources and also productivity of human resources in life insurance sector of India and Iran.

1.9 Objectives of the Study
1. To study general working of selected insurance companies in Iran & India.
2. To study productivity concept relating to management and operations of insurance sector in India and Iran
3. To Study human resources in selected insurance companies and their productivity
4. To Study various insurance plans introduced by Indian insurance co. & Iranian insurance Co.
5. To study operational and managerial efficiency in the insurance sector in Iran & India.
6. To study productivity models and its application to insurance sector in Iran & India
7. To study the utility of productivity model applicable to the insurance sector.
8. To give suggestions about using of productivity models.

1.10 Scope and Limitations of the Study
The research topic relates to efficiency of human resources and operational productivity model applicable to insurance sector.

In India twenty three life insurance companies and twenty four general insurance companies are working mainly life insurance and general insurance sector respectively. In India insurance sector is open for private sector. Twenty two life insurance companies are working in the private sector.

In Iran twenty two companies are working in life insurance and general insurance sector. In Iran insurance sector is open to private sector also. There is only one government insurance company (Bimeh Iran Co.) and there are twenty one private insurance companies in Iran.

The researcher has selected life insurance companies which are working in the public sector in India and Iran also. Insurance sector is open to private companies but private life insurance companies are not studied by the researcher.

Hence, the researcher has selected Iran Insurance Company (Bimeh Iran Co.) from Iran and Life Insurance Corporation (LIC) from India. The period of study is 21 years from 1990 to 2010. The researcher has selected Mumbai and Pune cities from India and Tehran city from Iran i.e the research area is restricted only for three cities.

1.11 Hypotheses
1. The insurance sector in India as well as Iran speedily developing since 1991.
2. Insurance companies in India and Iran lay great stress on increasing efficiency of human resources.
3. Insurance companies in India and Iran make use of productivity measurement models.
1.12 Research Methodology
The study is based on both primary and secondary type of data.

1.12.1 Primary Data
Information about outputs and inputs of life insurance sector and important indices for calculation of efficiency of human resources and operational productivity measurement was collected through interview from officers, executives, managers and experts of life insurance sectors.

Designing a model for calculation of Efficiency of Human Resources and Operational Productivity was a challenging work especially in the section of indexes and formulas which according to that, researcher is able to calculate the efficiency and productivity of human resources in life insurance sector for India and Iran.

The researcher had 94 interviews with managers, executives, experts of both countries to find out the main indexes and formulas of the model to calculate efficiency and productivity of human resources. Only Pune and Mumbai cities from India and Tehran city from Iran are covered for the purpose of study. Total 320 various executives are working in LIC of India (200 executives in Mumbai and 120 executives in Pune). Total 140 various executives are working in Iran. Twenty percent of the population was selected as a sample for the purpose of study. (Total 64 executives from India which it includes 40 executives from Mumbai and 24 executives from Pune and also 30 executives from Iran)

1.12.2 Secondary Data
The secondary data has been collected from the records of LIC of India and Bimeh Iran. For discussing the theoretical aspects, published sources like Annual Reports, Journals, Government Reports, Official Records of APO, Periodicals, Newspapers and other sources have been used. For the purpose of collecting secondary data, the researcher visited the following libraries, institutions and offices:

1. Jaykar Library, University of Pune
2. National Insurance Academy (NIA) Library, Pune
3. Pravara Institute Research Education IN Natural and Social Sciences (PIRENS) Library, Loni Ahmednagar
4. Life Insurance Corporation (LIC), Pune
5. Life Insurance Corporation (LIC), Mumbai
6. Management Faculty Library, Tehran University
7. Central Library, Tarbiate Modarres University, Tehran
1.13 Selection of Insurance companies
There are forty seven life and general insurance companies in India and twenty two government and private insurance companies in Iran. Following is the list of all insurance companies granted permission by IRDA (Insurance Regulatory and Development Authority- India) and Central Insurance of Iran:

8. Insurance Research Center, Tehran
9. Iran Insurance Company (Bimeh Iran), Tehran
**Table 1.2**  
List of Insurance companies in India and Iran

<table>
<thead>
<tr>
<th>India</th>
<th>Iran</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Life Insurance Companies in India</strong> (in alphabetical order)</td>
<td><strong>Private Insurance Companies in Iran (in alphabetical order)</strong></td>
</tr>
<tr>
<td>1.Aegon Religare Life Insurance Co.Ltd</td>
<td>1.Alborz Insurance Company</td>
</tr>
<tr>
<td>5.Birla Sun Life Insurance Co.Ltd</td>
<td>5.Etekai Amin Insurance Company</td>
</tr>
<tr>
<td>15.<strong>Life Insurance Corporation of India</strong></td>
<td>15. Omid Insurance Company</td>
</tr>
<tr>
<td>17.Met Life India Insurance Co.Ltd</td>
<td>17. Pasargad Insurance Company</td>
</tr>
<tr>
<td>20.SBI Life Insurance Co.Ltd</td>
<td>20. Sina Insurance Company</td>
</tr>
<tr>
<td>22.Star Union Daichi Life Insurance Co.Ltd</td>
<td>22. TATA AIG General Insurance</td>
</tr>
<tr>
<td>23.TATA AIG Life Insurance Co.Ltd</td>
<td>23. United India Insurance Company</td>
</tr>
<tr>
<td><strong>Non- Life (General) Insurance Companies in India</strong> (in alphabetical order)</td>
<td><strong>Government Insurance Company in Iran</strong></td>
</tr>
<tr>
<td>1. Agriculture Insurance Company of India</td>
<td><strong>Iran Insurance Co. (Bimeh Iran)</strong></td>
</tr>
<tr>
<td>2. Appolo Munich Health Insurance</td>
<td>1.Alborz Insurance Company</td>
</tr>
<tr>
<td>5. Cholamandalam MS General Insurance</td>
<td>4.Day Insurance Company</td>
</tr>
<tr>
<td>6. Export Credit Guarantee Corporation</td>
<td>5.Etekai Amin Insurance Company</td>
</tr>
<tr>
<td>8. HDFC Ergo General Insurance</td>
<td>7. Hafez Insurance Company</td>
</tr>
<tr>
<td>9. ICICI Lombard General Insurance</td>
<td>8. Iran Moein Insurance Company</td>
</tr>
<tr>
<td>11. Larsen &amp; Toubro (L&amp;T) General</td>
<td>10. Kosar Insurance Company</td>
</tr>
<tr>
<td>12. Max Bupa Health Insurance</td>
<td>11. Mellat Insurance Company</td>
</tr>
<tr>
<td>18. Royal Sundaram Alliance General</td>
<td>17. Pasargad Insurance Company</td>
</tr>
<tr>
<td>19. SBI General Insurance</td>
<td>18. Razi Insurance Company</td>
</tr>
<tr>
<td>22. TATA AIG General Insurance</td>
<td>21. Tose'e Insurance Company</td>
</tr>
<tr>
<td>23. United India Insurance Company</td>
<td>22. United India Insurance Company</td>
</tr>
</tbody>
</table>

Source: Internet (www.irdaindia.org and www.eng.iraninsurance.ir)
Table 1.2 shows the list of insurance companies in India and Iran. Twenty three life insurance companies and twenty four general insurance companies are working in India while one government insurance company and twenty one private insurance companies are working in Iran. The main insurance company in Iran is Iran Insurance Co. (Bimeh Iran) which is government base company. Life Insurance Corporation of India (LIC) is under the control of central government. LIC of India has captured more than 70 percent share of insurance sector. These two corporations/companies have played a very vital role in the life insurance sector. Hence, Life Insurance Corporation of India (LIC) and Iran Insurance Co. (Bimeh Iran) have been selected for the purpose of study. However, only Pune and Mumbai cities are covered for the purpose of study. In Iran, Tehran city was selected.

1.14 Statistical Techniques
The data generated through various sources was tabulated and classified systematically in accordance with the requirement of the topic.

After the collection of the research data, an analysis of the data and interpretation of the result is necessary. While interpreting the data quantitative techniques like percentage, ratio, index, average and other statistical tools like trend analysis, growth rate, charts, etc were used in order to draw meaningful conclusions.

Analysis of the data is to be made with reference to the objectives of the study and its possible bearing on scientific discovery. An analysis is made with reference to the research problem at hand and with reference to the hypotheses to be tested. For analysis and interpretation of data the researcher has used the following statistical methods:

- Excel Software
- Tabulation
- Classification
- Charts
- Mean

Also the researcher for analysis and interpretation of data has used the following techniques wherever necessary:

- Comparison analysis
- Ratio analysis
For the purpose of study of corporations and evaluating the efficiency of human resources and operational productivity measurement, statistical information has been collected, tabulated and used for a period of twenty one years from 1990 to 2010.

1.15 Review of Literature

The researcher has reviewed literature on Human Resources Management, Efficiency and Productivity in different books, research papers and articles, as well as different doctoral research theses. Through these literatures, different aspects related to efficiency and productivity were reviewed. They are as follows:

Role and Importance of Life Insurance, Human Resources of Life Insurance Corporation (LIC) and Bimeh Iran, Different plans of life insurance, Insurance penetration, Insurance destiny, Efficiency, Efficiency of Human Resources, Cost Efficiency, Revenue Efficiency, Operational Efficiency, Effectiveness, Productivity, Productivity Growth.

The challenging part of the research was how to collect the related and appropriate human resources efficiency and productivity indices.

Engineers, Economists, Accountants and Managers have their own approach to calculate the efficiency and productivity.

The researcher has probed books, papers, journals and theses to find out the related human resources indices. Literature review of the research is as follows;


The author in his book entitled, Measuring Team Performance; a step by step, customizable approach for managers, facilitators and team leaders, has suggested “a step by step approach for measuring team performance. Furthermore, some indexes have been defined to calculate efficiency and performance of human resources;”

1. Personnel costs per average number of employees
2. Recruiting costs per number of recruits retained
3. Training costs per average number of employees
4. Cost of wage increases per average number of employees
5. Cost of lost production due to labor problems per average number of employees
6. Number of days lost production due to labor problems per number of days worked

7. Number of days lost to absenteeism per number of days worked

8. Number of employees who leave per average number of employees

9. Number of employees with one year service per number of employees one year ago

10. Number of employees with more than one year service per total number of employees

11. Training costs / Training days

12. Training days / Number of trainees

13. Recruiting costs / recruits interviewed

14. Recruits selected / recruits interviewed

15. Recruits accepting / offers made

16. Number of interviews per person hired

17. Percent of new supervisors or managers completing basic supervision training within x days of promotion or appointment to position

18. Cost of outside training / hours outside training

19. Percent of assessment of outside training submitted on time

20. Percent of insurance claims processed on time

21. Percent of attendance

22. Percent of overtime hours

23. Percent of turnover

24. Percent of absenteeism

25. Number of full time equivalent employees

26. Number of recruits remaining on job after twelve months per number of recruits accepting employment

27. Number of accidents

28. Time lost due to accidents

29. Ratio of supervisors or managers to workforce

30. Benefit cost as percent of compensation
31. Percent of implementation of performance appraisal recommendations
32. Percent of accuracy of employee answers on company knowledge test
33. Percent of sick leave utilization
34. Percent of errors in processing personnel records
35. Number of requests for transfer
36. Dollar cost for testing applicants
37. Percent of tardiness
38. Ratio of employees available for promotion to total employees
39. Percent of adherence to job classification or reclassification schedules
40. New hires completion within x days
41. Percent of supervisors or managers who have completed basic supervisor training
42. Number of department report or record errors generated per employees
43. Number of investigated accidents
44. Percent of hours lost due to investigated accidents
45. Number of first aid cases
46. Number of retyped letters or reports per employee
47. Percent of secretarial or clerical absenteeism
48. Percent of word processing pages retyped
49. Percent of phone calls returned on time.


Management ratios have been suggested in a comprehensive book by Harishkes Bhattacharya entitled, Total Management by Ratios. “Some essential indices for calculation of efficiency of human resources are;”

1. Manufacturing wages and salaries / Net sales
2. Manufacturing wages and salaries / Cost of production
3. Gross profit / Net sales
4. Actual units produced / Standard units
5. Actual man-machine hours / Available man-machine hours
6. Operating profit before interest and taxes (OPBIT) / Net sales
7. General and administration expenses / Net sales.

Baotia in his book titled, Human Resources Management (concept, tools and application), had suggested some formula to calculate efficiency of human resources. The main index which he had mentioned was; “Number of daily absentees during period / (Number of employees * Number of working days)”11

4. Mary J. Keeney (2009)
Mary J. Keeney in her book entitled, adjusting for Quality of Labor and Labor Services in Productivity Measurement, had a very great idea that “in different period of measurement comparison of labor productivity indices has to be considered and pursued.”12

Simpson in his book entitled, Productivity in Public Services, has mentioned that “measuring output for public sector services is problematic, both in terms of capturing all the various dimensions of output that society values, and in measuring the relative valuations of each dimension to construct aggregate measures. In the absence of accurate, all encompassing measures of output productivity measurement risks being uninformative. Empirical studies of productivity for public sector organizations have demonstrated that efficiency measures and rankings can be sensitive to the techniques used to derive them, and that some may not be particularly robust. This is not to say that productivity measurement for public sector organizations is not worthwhile. Productivity measurement for private sector organizations also presents a number of difficulties, but what is important is that the results of studies, such as those examining the effects of competition on productivity, are demonstrated to be robust to the use of different productivity measurement techniques. Partial measures of productivity, for example for the treatment of specific health conditions, can be very accurate in terms of capturing output quality. But improving measurement at the level of public sector organizations as a whole will be important to understand fully the effects of competition and other factors on output, outcomes and productivity. This would also be valuable as reforms to public services and the use of pilot schemes.
produce good opportunities for researchers to understand these relationships better.”

Paul Schreyer in his productivity manual entitled, OECD Statistics Directorate OECD PRODUCTIVITY MANUAL, has expressed that “Productivity is commonly defined as a ratio of a volume measure of output to a volume measure of input use. While there is no disagreement on this general notion, a look at the productivity literature and its various applications reveals very quickly that there is neither a unique purpose for nor a single measure of productivity”

David in his book entitled, The Challenge of Productivity Measurement, has mentioned that “a productivity measure commonly is understood as a ratio of outputs produced to resources consumed. However, the observer has many different choices to the scope and nature of both the outputs and resources considered. For example, outputs might be measured in terms of delivered product or functionality, while resources might be measured in terms of effort or monetary cost. Productivity numbers may be used in many different ways, e.g., for project estimation and process evaluation. An effective productivity measure enables the establishment of a baseline against which performance improvement can be measured. It helps an organization make better decisions about investments in processes, methods, tools, and outsourcing.

In addition to the wide range of possible inputs and outputs to be measured, the interpretation of the resulting productivity measures may be affected by other factors such as requirements changes and quality at delivery. Much of the debate about productivity measurement has focused narrowly on a simplistic choice between function points and lines of code as size measures, ignoring other options as well as many other equally important factors. Productivity must be viewed and measured from multiple perspectives in order to gain a true understanding of it.”

8. Schreyer, Paul (2001)
productivity measurement, use and interpretation of productivity measures and International Standards.”

9. **P.N. Rastogi (1998)**
Rastogi in his books entitled, Productivity Innovation Management and Development, has expressed that “managers, supervisors, engineers, technicians, staff personal and workers must together be able and willing to realize the goals of productivity and innovation.”

Jablonsky and Fiala in their paper entitled, models for productivity measurement of central European countries, presented the AHP model for productivity comparison of Central European countries accessing the European Union. “The model consists of two basic parts. The first one estimates the importance of branches within the countries and the second one evaluates the performance of the firms within branches. Finally, the results of both the parts are synthesized and the productivity of the country is estimated. The evaluation is based on the data set resulting from a wide survey among industrial firms of selected important industry branches. The generalization of the AHP model in the form of a network structure expressed by the ANP model is draw out. Performance models help to understand the behavior of business systems and to provide guidelines to improve their performance. The proposed AHP model offers a simple approach for estimation of the performance scores of the countries. The possibility to use qualitative and hardly measurable characteristics is its advantage in comparison to other techniques.”

Apart from research papers and articles, the contribution made by researchers in the form of Ph.D theses is also considered.


estimate the Total Factor Productivity growth rate of a car factory, observed during the period of 2000-2007.”

3. The doctoral thesis of Arote Pratibha Shantaram (2009) entitled ‘Role and Contribution of Maharashtra State Financial Corporation in the industrial development of small scale industries in Ahmednagar District.’ “The researcher recorded his detailed observation on MSFC as well as he has given emphasis on operational efficiency.”

4. The doctoral thesis of Hekmat S. (2009) entitled ‘A study of productivity improvement circle in a electrical company’. In this thesis the researcher has studied the circle of productivity improvement, outputs and inputs, various indexes of productivity, manpower productivity, material productivity and efficiency. “The researcher has pointed some facts like, measuring output for services sector is difficult and also efficiency measures and rankings can be sensitive to the techniques used to derive them. Researcher has also made some comprehensive suggestions regarding the improvement of productivity annually.”

5. The doctoral thesis of Dattatraya Trimbak Shinde (2008) entitled ‘A study of Navi Mumbai Municipal Transport with special reference to its administration and working efficiency (1996-2004)’. In this thesis the researcher has studied evaluation of performance and efficiency of NMMT. “The researcher has pointed some facts like financial and physical performance and also administrative and working procedure. Researcher has made some comprehensive suggestions for improving efficiency and quality of service.”

6. The doctoral thesis of Heshmati Almas (2007) entitled ‘Productivity measurement in Swedish departments of gynecology and obstetrics. “The objective of research was to see whether there are any differences in the productivity growth derived from alternative models. From an empirical point of view the models produce somewhat similar results when mean levels of technical change and TFP growth rates are considered. Empirical results show:
(i) Large and negative rates of technical progress
(ii) Decreasing returns to scale, indicating in optimality of the efficient scale among the sample departments
(iii) large and negative rate of TFP growth
(iv) substantial variations in the exogenous rate of technical change and TFP growth among departments, wards and over time
(v) A high co variation between the models as regards to total factor productivity growth
(vi) Large differences among some of the models, so far as technical change are concerned. The study has provided useful information about health care resource utilization and the impacts of recent years of changes on productivity in health care. He found evidence of rigidities in achieving desired productivity improvements due to the nature of the service sector.”24

All the books and doctoral thesis are related with working of insurance sector in general and they also consider the productivity. However, no-body has stressed on efficiency of human resources, operational productivity measurement of human resources and efficiency models. i.e. this topic of research is untouched as far as research is concerned. Hence, it is necessary to go in detail and stress on efficiency models. The researcher has selected this very important topic for the purpose of study.

1.16 Outline of the Study
The present study has been divided into ten chapters. These chapters are as follows:

**Chapter 1 - Research Methodology**
The first chapter deals with the research methodology and database of present study. It includes Need of the Study, Study Area, Review of Literature, Objectives of the Study, Scope and Limitations of the Study, Hypothesis, Research Methodology, Data Collection – Primary and Secondary Data, Data Analysis and Interpretation and broad outline of the chapters.

**Chapter 2 - Human Resources Management**
The second chapter deals with the review of literature on Human Resources Management.

**Chapter 3- Formation and Development of Life Insurance Corporation of India (LIC)**
The third chapter deals with the Profile of Life Insurance Corporation (LIC) of India. History, Development, Recent Status and Scenario of Life Insurance Corporation of India (LIC) in this chapter will be discussed.

**Chapter 4 - Development and Recent Status of Life Insurance Company of Iran**
The fourth chapter deals with the Profile of Iran Insurance Company (Bimeh Iran).

**Chapter 5 - Comparison of Indian and Iranian Life Insurance Corporations**
The fifth chapter deals with comparison of Indian and Iranian Life Insurance Corporations

**Chapter 6 - Human Resource Management in Indian and Iranian Life Insurance Corporations**
The sixth chapter deals with comparison of human resources in Indian and Iranian Life Insurance Corporations

**Chapter 7 – Various Models of Efficiency Calculation**
This chapter deals with the various models of efficiency calculation.

**Chapter 8 - Operational Productivity Measurement and Design of an Appropriate Model**
This chapter deals with the various models of productivity measurement and design of an appropriate model.

**Chapter 9 - Analysis and Interpretation of data**
In this chapter researcher has analyzed and interpreted the data.

**Chapter 10 - Summary, Conclusions, Problems and Suggestions**
The final chapter deals with main findings and conclusions. It also gives the suggestions for improving efficiency of human resources and productivity in insurance companies.
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