CHAPTER – 2
REVIEW OF LITERATURE

National Human Development Report\(^1\) lays down that development process has to be ultimately assessed for impact on quality of life and human well-being. There has been a conceptual broadening in the notions of human well-being and deprivation. The notion of well-being has shifted away from just material attainment to desirable outcomes because of their role in supporting better opportunities for people. The Human Development Report\(^2\) lays down that for sustainable growth, countries must attain basic thresholds in the key areas of governance, health, education, infrastructure and access to market. Till recently in India, the concept of development was restricted to material attainments but this was against the spirit of development envisioned by Pt. Jawaharlal Nehru, First Prime Minister of India, in his Address to the Constituent Assembly on August 14 and 15, 1947. He laid down that\(^3\) “That future is not one of ease or resting but of incessant striving so that we may fulfill the pledges we have taken. The service of India means the ending of poverty, ignorance, disease and inequality of opportunity. We have to build the noble mansion of free India where all her children may dwell.”

Various studies on human resource management and human resource planning have been conducted by a number of social scientists, economists and researchers at micro as well as macro level worldwide. Sh. A.P.J. Abdul Kalam,\(^4\) the erstwhile Hon’ble President of India indicated that the database for traditional knowledge has to be converted and harnessed towards marketable products and systems for national economic growth. The industry should work for the betterment of the people and eco-friendly economic development. Some of the significant issues deliberated, inferences drawn and findings arrived have been discussed in the succeeding paragraphs. These may or may not be Army or EME specific but surely will help in understanding the general philosophy, policies, procedures and

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\(^3\) Retrieved from http://www.theholidayspot.com/indian_independence_day/voice_of_freedom.htm
practices related to human resources at large and correlating it with the topic of present research.

2.1 HR Planning

Human Resource (HR) planning or in broader terms Human resource planning (HRP) is the process by which a management determines how an organisation should move from its current manpower position to its desired manpower position. Bowey\(^5\) (1977) has defined manpower planning as a "strategy for matching future manpower numbers and skills with organisational activities". Many researchers have published works in this area. Thomson\(^6\) (1979) who introduced a transportation linear programming model to be used for studying the design of a manpower system. Thomson's (1979) work was notable for its application of linear programming to HR planning problems. Golver et al\(^7\) (1979) introduced a model whereby jobs are assigned to individuals based on the costs associated with each individual doing a particular job. Bartholomew\(^8\) (1979) has described manpower planning as inter-disciplinary activity, requiring technical skill of statisticians, economists and behavioral scientists together with the practical knowledge of managers and planners. Gregory\(^9\) (1983) presented a HR planning model based on the idea of career development and job assignment according to skills attained. Although these models are useful for HR planning, they are more concerned with matching employee's skills with different jobs.

Rizwanul Islam\(^10\) points out that rapid economic growth in East Asia in the last decade has been based not entirely on quantitative expansion of the inputs of production. The amount of capital per worker in those countries remains considerably lower than in the rich industrial countries. Arvind Singhal\(^11\) depicted that the prospects of the Indian economy are quite good in the near future. But

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ironically one of the biggest hurdles likely to be faced by resurging India is an impending crunch in availability of human resources required to manage the new business start ups.

David McDonald\textsuperscript{12} revealed that the main sources of productivity growth are technological change, increases in capital intensity, economies of scale and improvements in labour efficiency.

Rajiv Raghunath\textsuperscript{13} disclosed the state of the World’s Children in a report released by the UNICEF, which makes an interesting observation of how private support can help in reducing malnutrition among children worldwide. Education and training will play a vital role in promoting labour efficiency through the enhancement of workforce skills. Current employees may require training, development, and coaching before they’re ready to fill new jobs. Going outside requires a decisions about what recruiting sources to use, among other things. Like all good plans, management builds employment plans on basic assumptions about the future. Forecasting generates these assumptions. Similarly in army if planning for recruitment is to be made, it will need to forecast three things:-

(a) Manpower needs
(b) Supply of inside candidates
(c) Supply of outside candidates.

\textbf{Oil and Natural Gas Corporation} (ONGC)\textsuperscript{14} is the flagship company of India; and making this possible is a dedicated team of nearly 40,000 professionals who toil round the clock. The company has adapted progressive policies in scientific planning, acquisition, utilization, training and motivation of the team. Another line of manpower research is to focus on the transitions between various stages of employees’ careers.

\textsuperscript{12} McDonald, David, \textit{Industrial Relations and Globalisation: challenges for Employers and their organization}, ILO Workshop, Turin, Italy, 5-13 May 1997.
\textsuperscript{13} Raghunath, Rajiv., \textit{Merge HRD with social development}, Bombay, Indian Express, December 22,1997.
Lei, David\textsuperscript{15}, in his paper “The Empathetic Organisation” highlights that the unique organisational and strategic characteristics of empathetic organizations. These organisations lay a great stress on Human Resource Management by spending heavily on training and development, offer higher compensation, openness, empowerment through, training, trust and caring for employees.

Law, KS and Tse\textsuperscript{16} investigates the significance of how firms manage their human resources within the confines of powerful social institutions in a transitional economy of the People’s Republic of China. This study looks at the impact of two variables- the role of human resource management and employee’s perception of top level management and firm’s performance. Many authors have worked on the shorter-term problem of rostering and scheduling of personnel. Airline crew rostering is a prime example of this research.

2.2 Human Resource Forecasting

Planning is often viewed as the start point of all managerial activity. However, forecasting is the basic step leading to planning. Planning is directed towards future activity which takes place in an uncertain environment and in conditions which may be vastly different from those existing at the time of planning. Planning, therefore, must be related to future and attempt to forecast the environment with some degree of accuracy. The interest in the future stems from the fact that it often decides the actions to be taken at the present time. Forecasting is a package of techniques which aims to predict the future in a scientific manner based on reason, logic and available data.

Fukuda-Parr, Sakiko and Shiv Kumar\textsuperscript{17} opine that Human Development Reports are now globally recognized for measuring, monitoring and managing socio-economic development. The rationale for treating human beings as ends for social and economic development is the philosophical foundation of the new

\textsuperscript{15} Lei, David and Charles, Green.R., The Emphatic Organisation, Organisation Dynamics 32(2), 2003, pp. 142-164.
\textsuperscript{17} Parr, Fukuda, Sakiko and Kumar, Shiv., Readings in Human Development: concepts, Measures and Policies for a Development Paradigm, New Delhi, Oxford University, 2003.
approach; which lies in the concern for the human being. Review of Statistics\textsuperscript{18} shows that Singapore has invested heavily in the education and training of its people since internal self-government was installed in 1959. Forecasting human resources needs is the central aspect of the human resource planning process, as it yields the advance estimates of staffing required to achieve the organisation’s stated objectives. Azim Premji\textsuperscript{19}, Chairman Wipro Ltd. points out that all the economies, which have prospered in the last century, have done so due to their ability to tap human potential. Forecasting as a management function is the precursor to planning. In manpower planning, two important qualitative and quantitative facets of forecasting emerge:-

(a) Forecasting the need and/or requirement of personnel.

(b) Forecasting the availability of personnel.

Vepa Kamesam\textsuperscript{20} opines that conventionally three factors of production viz. land, labour and capital have been recognized as the sources of economic growth. The literature suggests that quality of human resource is precondition for sustained human development and a sustained human development is precondition for sustained economic growth. The sufficient condition for sustained human development emphasizes three elements viz. longevity, education and command over resources. The success of manpower planner lies in effectively matching the personnel requirement with availability, i.e. matching the manpower demand and supply. Forecasting of manpower requirement is the less developed area of manpower planning, since the demand is influenced by many factors that cannot be easily qualified and are shrouded with uncertainties. Some of these factors are - the future political and social scenario, employment laws, education and demographic structure, competitive labour markets, job opportunities, motivation level, degree of automation, skill demands to cope with technology, changes in the level/ types of activities, available budgets and expansion plans etc. Forecasting of manpower availability, on the other hand, is more precise.

\textsuperscript{18} Human Resource Development for continued economic growth, The Singapore Experience (ILO) workshop on employer’s organization in Asia-pacific in the 21st century, Turin, Italy, 5-13 May 1972.


\textsuperscript{20} Kamesam,Vepa., Deputy Governor RBI address, Role of Quantity Human Resources in Target setting for Economic Growth, Technology Information Forecasting & Assessment Council meeting, July 25,2003.
NCAS\textsuperscript{21} revealed that economic planning must take into account the sources required for human development and the human resources available for carrying out the plan. The successive five-year plans in India have provided the policy framework and funding for building up nationwide infrastructure and manpower. For some human resource planners, analysis and forecasting are integral to the process. Analysis of the current staffing patterns, projections of the future requirements and matching of the two sets of results can easily be a preoccupation.

According to George W. Gamerdinger\textsuperscript{22}, the Directorate General of Employment and Training under the Ministry of Labour, Government of India has been encouraging the strengthening of the national vocational training system. The future, being uncertain, provides considerable challenge to those concerned with anticipating conditions requiring management action. This section examines the techniques for forecasting human resources needs, application of the results, and potential pitfalls to be avoided. Forecasting is viewed as essentially a process of estimating available supply and demand for talent, based on the best available information generally provided by the managers responsible for operations in each unit of the organisation. Mathematical and computer based techniques are also available, but these are supplements to, rather than substitutes for, management based judgments regarding future needs.

Forecasting logically begins with the development of an understanding of the environmental and organisational conditions affecting future requirements. The required analysis may emerge as part of the strategic planning cycle. Alternatively, it may require independent review and analysis, and perhaps in-depth studies.

Robert W. Fogel\textsuperscript{23} clearly brings out the impact of health and nutrition on economic growth. He brings to light a very interesting fact that life expectancy in India almost more than doubled from 29 years in 1930 to 60 years in 1990, a fact

\textsuperscript{21} National Centre for Advocacy Studies, Population- A Human and Social Development.
\textsuperscript{22} Gamerdinger, George W., Employer’s Organisation and Human Resource Development in the 21st century, South Asia views, ILO workshop.
\textsuperscript{23} Fogel, Robert W., Health, Nutrition and Economic Growth, Economic Development and Cultural change.
which took almost 250 years in countries like England and France. Staffing is usually controlled in the organisations through control over organisational structure, job definition, and the number of authorised positions controlled through the budgeting process. An organisation may not be optimally staffed and an examination of the current demand is the first point in planning future needs.

The 1996 HRD report points out that while investing in human capital can lay the basis for subsequent growth, countries, which focused exclusively on economic growth, have achieved neither sustained growth nor human development. **Elizabeth and Walter McMahon** have used comprehensive regression estimates to show the direct and indirect effects of education on infant mortality, longevity, strengthening of civil institutions, political stability and investment in physical capital.

**Hammer** and others point out the link between infant mortality rate (IMR) in Developing Countries to economic growth.

### 2.3 Review of Human Resources Management Practices

It is preferable to consider a combination of human resources practices, as expressed by **Arthur** (1994), since different impacts on training are likely across different workplaces. **Baldwin and Johnson** (1995) found that companies that innovate, are more technologically advanced, emphasize quality management and have human resources strategies will more frequently support training initiatives. A number of studies indicate that employee training has a positive impact on corporate performance. They generally test the hypothesis that, by improving the competency of employees, training also improves their productivity, which is reflected in an improvement in the firm’s performance. **Betcherman, McMullen**

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and Davidman (1998) concluded that firms that have training programs tended to perform better in terms of productivity, revenues, profitability, viability and prospects.

Workplace and Employee Survey (WES), 2001 by Statistics Canada highlights that technology and innovation are also among the most cited determinants of employer support for training. Different human resources management practices can also act to influence the level of training, particularly those that are concerned with organizational design and incentives. In this WES study, three HRM practices are considered:

(a) **Flexible job design:** The WES defines flexible job design as including job rotation, assignment of personnel to a variety of tasks and a high degree of autonomy. Such practices make employees more versatile. One may think, therefore, that employees of firms that practise flexible job design, given their autonomy, find it easier to organize their tasks so they can free up the time needed to take part in a training activity. In addition, the mobility that exists in such establishments makes it easier to replace, or at least partly replace, employees going on training.

(b) **Hours of work:** Loss of production time is, according to firms, one of the major obstacles to offering training activities. It is especially problematical in small firms, which suggest that they have trouble sending employees to training for fear of being unable to replace them during the training period (Kapsalis, 1996; Betcherman, Leckie and McMullen, 1998). Unfortunately, the WES offers no information on the allocation of time to employees specifically devoted to training. Therefore, the average number of working hours is chosen to measure the opportunity cost (of production hours) of time allocated to training. It is assumed in this study that employees of firms with a lower average number of working hours

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have more time available for activities other than production (e.g. training). So the higher the number of hours of work, the higher the opportunity cost.

(c) **Incentive system:** Such a system includes practices linking employees' compensation to their work performance. Studies have found that employee training is much more likely to increase productivity when it is combined with variable compensation (Saks et al, 2002). Therefore, it is reasonable to believe that employees of firms where such systems exist would be more interested in training to increase their competency and performance in order to receive better compensation.

These results on intensity of training are consistent with the findings of Turcotte et al. (2003), who also showed that firm size is positively related to incidence of training but negatively related to intensity of training. However, these results differ slightly from those of other studies. The important difference is that the population has been segmented into trainers and non-trainers. Thus, intensity of training is concerned only with establishments that actively engage in training. The analysis in this report demonstrates clearly that the main source of lower training rates in small businesses is the lower incidence, not lower intensity, of training.

The paper also analysed the incidence of training by firm size, i.e., the decision by the firm to invest, or not, in training. Because the small business population is much more heterogeneous than that for medium-sized and large companies, it is necessary to distinguish between the different types of small businesses so that one can compare similarly motivated firms. Consequently, in this section, firms are segregated according to their business strategy, also by the types of human resources practices they pursue, and by technology use and innovation. The incidence of training between these different segments is compared by size of firm to try to understand further the factors underlying variations in the incidence of training. The link between the innovation and market

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expansion strategy and the incidence of training is much stronger in small establishments with 10 to 19 employees. Those that consider this strategy very important are much more likely to train their employees than those that consider the quality improvement strategy and the human resources-based strategy very important. Pursuing a cost reduction strategy does prevent some small establishments from supporting training activities. The relation between incidence of training and the different business strategies seems to be less pronounced in medium-sized and large establishments. For each strategy, the incidence of training is much less disparate in medium-sized and large establishments, whatever the importance ascribed to the strategy, than in small establishments. In medium-sized establishments, however, those that base their strategy primarily on human resources are more inclined to offer employee training than the others. In large establishments, there is a positive relation for quality improvement strategies and human resources-based strategies. And, for large establishments, cost control is not an obstacle to supporting training.

From the perspective of analysing different training rates by firm size, what is important is that the decision to train employees or not is much more dependent on the different business strategies in small establishments than in medium-sized and large establishments. The majority of medium-sized and large establishments sponsor training activities regardless of the strategies they adopt. However, it is primarily motivation to innovate and extend their market share that leads small establishments to offer employee training. Those seeking to improve the quality of their products and those that base their strategy on human resources are also more likely to train their employees, though to a lesser extent. A firm committed to innovation and motivated to grow will find a way to undertake training, whatever their size.

The decision by small establishments to train their employees or not is also positively linked to whether or not they offer their employees a flexible work arrangement. One possible explanation is that employees who are more autonomous, and have flexible tasks and schedules, are better able to organize time off, making it easier for their employers to send them on training. For all categories of establishments, employee availability seems to be a training barrier. In all categories of establishments, there is positive relation between technology
use and the incidence of training. This confirms the notion that the more establishments make use of technology, the more interested they are in providing training for their employees so they are comfortable with operating technological equipment and can update their skills. However, the impact of technology use on the decision to train employees was more significant as the size of the establishment decreases.

There is also a positive relation between the incidence of training and the introduction of innovative activities in all categories of establishments. This relation is also more pronounced in small establishments. For small establishments with 50 to 99 employees, medium-sized and large establishments, there is also a ceiling: generally for these establishments, they need to introduce at least one type of innovation before they decide to train their employees. The types of internal human resources practices that establishments pursue are also associated with the incidence of training. Establishments that have incentive schemes, use technology intensively, or are innovative are more likely to support training activities, whatever their size.

The aim of this WES study was to examine the proposition that small firms train their employees less than medium-sized and large firms. The results concur with previous studies in that proportionally fewer small firms provide structured training activities for their employees, especially those with fewer than 50 employees. Moreover, small businesses are more likely to rely on on-the-job training versus structured training. The business strategies of a firm clearly influence whether they decide to train or not. In particular, firms that pursue an innovation and growth strategy are more likely to train employees regardless of firm size.

The type of internal human resources practices that firms pursue also influences the incidence of training, though the impact depends on the particular practice. Firms that have incentive schemes use technology intensively or are innovative exhibit much higher incidences of structured training across all firm sizes. Once again, the gap between small firms and larger firms that have the same human resources practices is reduced. Outcomes in this study were based on cross-sectional data and on a descriptive analysis. Therefore, although the
results of this study clearly showed that business strategies and human resources practices are related to the training decisions of firms, they did not establish the direction of the causality links. Secondly, this study focused principally on structured training.

Stewart Liff\textsuperscript{34}, in his essay on Army Human Resource Management (2002) focuses on securing, maintaining, and utilizing an effective work force, without which organizations cannot survive. HRM involves a variety of activities, which include recruitment, and screening of prospective employees, the study of training needs, preparing human resource forecasts, the development of compensation systems, and an understanding of the laws that affect the performance of these activities. The Human Resource Management function has evolved significantly since the early 1900. The need to deal with labour unions and the human relations movement has increased the need for competent human resource professionals.

Planning organizational human resource needs is a key task for human resource managers. Key strategies for effective human resource management planning are:

(a) Align human resource management strategy with business strategy
(b) Determining priorities
(c) Gaining line management support

The Organizational mission generates the organizations Plan, which in turn generates the human resource management plan. The external environment and the internal environment of the organization influence the human resource management plan. Human resource managers must align the operational needs of managers with the mission and organizational goals of the business. Human resource managers must communicate effectively with operational level managers to influence, analyze and supply expected staff needs. Additionally, Human Resource Managers must consider the expected future environment and internal and external factors affecting human resource needs when planning future

personnel requirements. Human resource managers must establish priorities for staffing needs. Human resource managers must balance the requirements of line managers against the organizational goals to ensure staffing growth is consistent with the overall organizational objectives. Further, resource managers must gain line management support for their programs. Resource managers must develop a good working relationship with line managers. Line managers must understand the human resource managers' strategy and the value human beings as assets

A study was conducted by Center for Advanced Human Resource Studies in Jun 2011 on ‘What motivates HR practices that affect their engagement, behaviour and performance’. The Key findings of the study were as under:-

(a) Espoused or intended HR practices have differential effects on employee engagement and citizenship behaviours depending on the underlying management motives employees attribute to those practices.

(b) To achieve desired organizational outcomes, it’s important to have not only the right HR practices but the right employee perceptions of those practices.

(c) Within the service organization studied, employees were more engaged when they believed HR practices were motivated by the organization’s concern for high-quality service and employee well-being.

(d) Employees were less engaged when they believed a company’s HR practices were motivated by a desire to reduce costs and exploit employees.

(e) Employee attitudes coalesce into unit-level citizenship behaviours, some of which are associated with greater customer satisfaction.

Alnaqbi (2011) conducted an exploratory study on ‘The relationship between human resource practices and employee retention in public organisations in United Arab Emirates’. The study states that United Arab Emirates (UAE) has

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rapidly developed into a dynamic global economy with the influx of foreign ideas and practices, facilitated by the development of the Internet. As with many organisations worldwide, staff retention problems affect organisational productivity and performance. The research looked into employee retention problems within the socio-economic context of the UAE. This study brings into focus the extent to which human resource management (HRM) practices and organisational culture in the UAE affect employee retention in public organisations. The study identified HR practices and other factors such as job satisfaction, organisational commitments and leadership practice that affect employee retention with emphasis on public organisations.

The Thesis on Hotels in New Zealand is devoted to exploring whether and how Human Resources (HR) contributes to improved organizational performance when it is integrated with the organization’s strategic planning and decision making at different levels. Results of the research indicate that the importance of HR is widely recognized by New Zealand hotel managers. HR practices that are being used by hotels all over the world have been adopted by hotels in New Zealand. More importantly, the HR-strategy integration present in New Zealand hotels is found have a positive association with a hotel’s future performance, through the hotel’s HR outcomes. More particularly, the high level of HR’s involvement in a hotel’s strategic decision-making process is significantly linked with the functional flexibility of a hotel’s staff, which in turn links to the hotel’s labour productivity. The findings of the thesis contribute to the development of strategic human resource management in that it supports the proposition that close HR-strategy integration has positive impacts on an organization’s performance. Also, it supports the hypothesis that there exists a time lag between the integration and the performance.

A dissertation on ‘Project Human Resource Management in the Public Sector: What motivates Public Employees to work on Projects’, done by Norbert Maass (2011) explored the determinants of public employees’ intention to work on projects. Based on previous research on project human resource management

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and theories of intention formation, eight potential determinants were identified and empirically tested. Four of the eight determinants had a significant influence on the motivation of public employees to join projects (usefulness, compatibility, social pressure, and image). First, public employees are motivated to work on projects when they believe that project management tools and techniques will improve their job performance. Second, they have a stronger intention to join projects when they perceive that a project position does not require radical changes in the way they usually work. In addition, the positive opinion of colleagues about project-based work encourages public employees to accept a project position. Finally, public employees intend to join projects when they believe that a project position is associated with high social status and prestige. The independent variables organisational mandate and facilitating conditions were found to be non-significant.

Andreassi, Jeanine, Leanna Lawter et al\textsuperscript{39} study (2012) examined "Job Satisfaction Determinants across 48 Nations." This paper examines the drivers of job satisfaction across four cultural regions—Asia, Europe, North America, and Latin America. Using Hofstede’s theory, determinants were used to predict job satisfaction for each region. Data was collected from a proprietary industry survey on employee work attitudes. The sample consisted of over 70,000 employees from 4 large multinational organizations. Data was analyzed using regression analysis and comparison testing across models. There are significant relationships between job characteristics and job satisfaction across all regions of the world. Although job characteristics impact job satisfaction across all regions, there are significant differences in the relative importance of job characteristics on job satisfaction, consistent with Hofstede’s cultural dimensions.

The above findings have implications for tailoring human resource management practices across locations within multinationals. This research is believed to be the first cross-cultural study of the job determinants affecting job satisfaction using multiple organizations and industries.

The Paper on ‘The Emerging Challenges in HRM’ by Mrs. Ekta Srivastava and Dr. Nisha Agarwal in Jul 2012 analyses the various challenges which are emerging in the field of HRM. The managers today face a whole new array of changes like globalization, technological advances and changes in political and legal environment. This has lead to a paradigm shift in the roles of professional personnel. The great challenge of HRM is to attract, retain and nurture talented employees. This paper also analyses how to overcome these challenges. These challenges can be overcome through cross cultural training, technological and informational training of HR people and motivation of employees through various techniques. Due to all these challenges it is very difficult for HR people to retain, attract and nurture talented employees. But it is possible from motivational techniques, HR executives cannot motivate employee from only financial techniques but they can motivate from non financial techniques.

The Human Resource Management Practices and Organizational Commitment in different Organizations was studied by M.G. Shahnawaz and Rakesh C. Juya. The study explored and compared various Human Resource Management (HRM) practices in two different organizations—consultancy/research based organization and fashion industry. The present study is also aimed at assessing how much of commitment in the two industries can be attributed to HRM practices. 45 participants each were randomly selected from the two organizations. HRM practices were measured by Geringer, Frayne and Milliman scale, while organizational commitment was measured by Meyer and Allen scale. Data were analyzed by t-test and multiple regressions. HRM practices were found significantly different in two organizations and mean scores on various HRM practices were found more in the fashion organization. Regression result showed that various HRM practices were significantly predicting organizational commitment in two organizations and also when they were combined. Performance appraisal and ‘attitudes towards HRM department’ were the significant predictors of organizational commitment in the both the organizations.

Lt Gen Mukesh Sabharwal\textsuperscript{42} (retd) article (2013) by the former Adjutant General of Indian Army states that Human Resource Management in the Army is an extremely vital issue because its strength has always been its soldier. It is well known that institutions do not transform and the weapon platforms do not defend the country. Of the Army’s sanctioned strength of 47,762 officers, the held strength is only 36,790. This shortage is not of recent vintage. The shortfall ranged from 12 to 15 per cent in the 1950s, 60s and 70s. Emergency and short service commissions spurred by wars during that period were the preferred approach to bridge the gap. The next three decades however, saw the shortage rise up to 24-25 per cent. Significantly there are no deficiencies in the higher ranks of Colonel and above. The criticality is of the prescribed annual induction in the Army of 2,240, where actual intake in the 2009, 2010 and 2011 was 1,599, 1,892 and 2,275 respectively. This corresponds to 67, 72 and 102 percentage. The upward trend is encouraging. Two main areas of concern where the intake has been marginal are the Direct Entry (DE), Gentleman Cadets (GCs) in the Indian Military Academy (IMA), Dehradun and the Short Service Commission (Non-Technical), SSC (NT) GCs in the Officers Training Academy (OTA), Chennai – in the lower part of the pyramid at the level of captains, majors and lieutenant colonels. This is being addressed. Human Resource Management is an essential command function and, in this context, it needs to be understood that the soldier of tomorrow has to be an innovator who can combine imagination and knowledge with action as spelt out in Indian Army Doctrine 2004.

He clarifies that Human Resource Management in the Army is an extremely vital issue because its strength has always been loyalty of its soldier. It has been aptly said that institutions do not transform – its people do; platforms and organisations do not defend the country – people do; and units and formations do not sacrifice and take risks for the nation – people do! It is therefore, evident that without highly skilled, competent and dedicated soldiers in its rank and file, it matters little how lethal the weapon systems are or how strategically responsive the field formations are trained to be. More vital are the men behind the weapons, who truly execute the mission. The enormity of the task can be gauged from the

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fact that the Army has about 12 lakh serving soldiers in its rank and file and it also has to cater to the needs of over 22 lakh of its veterans who have retired from service. In Army there is high emphasis on delivering the goods even at the cost of laying down ones’ life. This makes the Army the final bastion and invariably the most reliable asset that the Nation can fall back upon during the hours of crisis. In the case of the Army it translates moving from a ‘brawn force’ to a ‘balanced brain-cum-brawn force’. With all the agencies trying to tap the cream, talent is at a premium. Attracting, retaining and motivating the best talent is a constant challenge for the Army in the present circumstances and the problem is likely to become more acute in the coming years. The paradigm shift in the quality of intake required for the Army, both at the officers level and for JCOs / OR warrants that adequate incentives be made available to attract the right material, motivate them to join the services and thereafter retain them in service. The Ex servicemen Contributory Health Scheme project, which was conceptualised and initiated just about a decade back, has grown by leaps and bounds and constitutes 426 polyclinics, providing medical cover to about 12 lakh veterans and more than 27 lakh of their dependents. It also has on its rolls over 1,300 private hospitals spread over 170 stations, which have been empanelled to supplement the polyclinics that are already functional

A Paper by Ramgutty-Wong, A.\textsuperscript{43} (2014) on the ‘Future of Public Sector HRM in Mauritius from an Accountability Perspective’ lays down the state of affairs in this area and proposes an analysis of the pertinence and efficacy of such reforms. Many positive results are noted amongst those ministries that have implemented the Performance Management System (PMS), but many other findings are also problematic, such as lack of clarity on how PMS is promoting organizational goals; how organizations are able to use the PMS as a basis for staff training plans or for promotion decisions; PMS seems to be missing the point of addressing real management challenges and Poor senior management “focus” and commitment to PMS. The Mauritian Public Sector has implemented a Performance-Based Budgeting (PBB) system, as a driving force behind the emphasis on identifying goals and measures. This complements the PMS in

pushing public sector departments and ministries in the direction of aligning their activities, including HRM, toward achieving strategic goals and measuring progress toward those goals. This can help clarify future direction, establish priorities, initiate program performance improvement, increase effectiveness and accountability, and help managers improve service delivery, decision-making and internal management. But from good intentions to real implementation, the gap is yet to be addressed. Political interference, budgetary constraints, top-down management and centralized recruitment and selection are definite barriers to an HRM Accountability System.

2.4 **Group Dynamics**

Understanding the group dynamics or group behaviour in an organisation is essential because every organisation is composed of many groups or sub-groups. Therefore, much of individual’s behaviour can be understood in context of the small groups to which it belongs. In an organisation, individual’s commitment to production norms, acceptance of leadership, satisfaction with work and effective performance on the job can be understood by understanding group dynamics. It helps immensely in HRM and its effective utilisation towards attainment of organisational goals. A group is defined as two or more individuals, interacting and independent, who have come together to achieve particular objectives. Kolasa\(^\text{44}\) (1974) observed that the term group refers to an aggregate of modest size, anywhere from 2 to a number like 15, 20 or 25. It thus reflects some cohesiveness in the activity of the numbers. Kelly and Thibaut\(^\text{45}\) (1978) opined that group is a collection of individuals, whose members accept a common task, become interdependent in their performance and interact with one another to promote its accomplishment. A group may be formal or informal, command or task group; apathetic or erratic, strategic or conservative group etc. A formal group is defined by the organisational structure with designated work assignments. Formal groups are bodies such as the top management team, work units in various departments of the organisation, staff groups providing specialised services in the organization etc. In contrast, informal groups are alliances that are neither formally structured


nor organisationally determined. Kolasa provided two more groups: in-groups and out-groups. The In-group represents a clustering of individuals, holding prevailing values in society or at least having a dominant place in social functioning. The Out-groups, on the other hand, are the conglomerates looked upon as subordinate or marginal in the culture. They are usually referred to as minority group even though they may represent a numerical majority. Therefore the essential characteristics for a group to form are the following:-

(a) Common motive(s) conducive for group interaction  
(b) Differential effects of the interaction on individual group members  
(c) A group structure with a hierarchical status system  
(d) Standardisation of norms and values.

The five distinct stages of group development are discussed below:-

(a) **Forming.** It is characterized by a great deal of uncertainty about the group's purpose, structure and leadership.

(b) **Storming.** This is the stage of inter-group conflict. Members accept the existence of the group but resist the constraints the group imposes on individuality. When this stage is complete, a relatively clear hierarchy of leadership exists within the group.

(c) **Norming.** In this stage, close relationships develop among the group members and the group demonstrates cohesiveness.

(d) **Performing.** The structure at this point is fully functional and accepted. Group energy has moved from getting to know and understand each other to performing the task at hand.

(e) **Adjourning** In this stage, the group prepares for its disbandment. High task performance is no longer the group’s top priority.

One of the major objectives of group dynamics is to develop group cohesiveness. Research has generally shown that highly cohesive groups are more effective than those with less cohesiveness. Cohesiveness influences productivity and productivity influences cohesiveness. Camaraderie reduces
tension and provides a supportive environment for the successful attainment of group goals, which is the main motto of Army for winning a battle.

2.5 **Safety, Security & Sanitation**

Physical safety, security and sanitation of the personnel, work places, installations, equipments, materials, operations, information and documents including cyber security is of paramount importance for the Armed Forces. Threat to security can be caused either due to subversion, espionage, sabotage or breaches of security. Any ignorance of the safety and security instructions may result in an accident. This may be caused by either unsafe acts or unsafe working conditions. Occurrence of an accident or breach of security results in many losses including that of human lives, damage/ loss of the equipment, premises and causes major threat to national security. Indian Factories Act 1948 talks about strict compliance of accident prevention measures and formation of Safety committees at work places. This is applicable to Army Base Workshops, Station Workshops and peace establishments of the Corps of EME, where civilian workforce is employed along with the combatant tradesmen. Workmen Compensation Act 1923 provides compensation to the workmen for any injury/ disability met during working hours besides compensation for contracting any occupational diseases due to hazardous work conditions. The Indian Official Secrets Act 1923 prevents from the indiscrete disclosure of any classified information through conversation, correspondence or communication to unauthorised persons whether in course of official duties or otherwise. It also applies to premature disclosure, intentional or accidental, of official information to any newspaper or person not authorized to receive it, irrespective of whether or not it is intended to release such information officially at a later date. The normal sources of leakage of information are classified documents and photographs, private correspondence, telephone conversations, careless talk, contact with press representatives and foreign nationals, computers, faxes, internet, intranet etc. For the sake of security, the classified documents are categorized as Top Secret, Secret, Confidential and Restricted. For handling of classified documents, there are detailed instructions including page numbering, copy numbering, physical
checks, handing/taking over and storage. In recent times, a lot of emphasis has been attached to cyber security, which is a major cause of espionage. Fire safety and drills are another important aspect. For this purpose, the total area is divided into various sectors and for each sector a Safety Officer and a Fire Control Officer is deputed, which is responsible for regular checking of the serviceability of the equipments and all time preparedness of the personnel to handle any eventuality. In addition, Army doctors carry out surprise checks to see the hygiene and sanitation of work places and cook houses.

2.6 Management of Grievances

In almost all organisations; grievances, conflicts and complaints are a regular phenomenon. A grievance is defined in several ways. Yoder\(^{46}\) (1972) defined it as a written complaint filed by an employee and claiming unfair treatment. Davis\(^{47}\) (1971), on the other hand, expressed it as any real or imagined feeling of personal injustice which an employee has concerning his employment relationship. According to Jucius\(^{48}\) (1971), a grievance is any discontent or dissatisfaction, whether expressed or not, valid or otherwise, arising out of anything connected with the company which an employee thinks, believes or even feels to be unfair, unjust or inequitable. The International Labour Organisation concluded grievance as a complaint of one or more workers in respect of wages, allowances, conditions of work and interpretation of service stipulations, covering such areas as overtime, leave, transfer, promotion, seniority, job assignment and termination of service. He observed that grievances exist in the minds of individuals, are produced and dissipated by situations, are fostered or healed by group pressures, are adjusted or made worse by supervisors and are nourished or dissolved by the climate in the organisation which is affected by all the above factors and by the management.

A conflict is not always bad but sometimes desired so as to have divergent opinions and views besides competition. However, when it crosses a limit it hinders the productivity and growth. Therefore there is a need to have a fast, fair and transparent grievance redressal mechanism in place.


2.7 **Employees’ Training**

Training is required to enable, empower, enrich and enlighten all personnel to synthesize and synergise their optimal efforts towards achieving organisational effectiveness. Training needs need identification, which have to be related both in terms of organisations’ demands and that of the individuals. A training cycle consists of four important stages: identification of needs, formulation of training methodology, delivery of training and evaluation of training effectiveness.

Gravin\(^{49}\) (1993) emphasized the need of a learning organisation. He defined learning organisation as an organisation skilled at creating, acquiring and transferring knowledge and modifying its behaviour to reflect new knowledge and insights. Prokesh\(^{50}\) (1997) stated that learning is at the heart of a company’s ability to adapt to a rapidly changing environment. Waterman and Collard\(^{51}\) (1994) opined that by helping workers become more employable companies can build a more flexible workforce and recreate a sense of community. Mohanty\(^{52}\) (2003) argued that if people are not allowed to grow, develop and make decisions; it will result in wastage of human life and waste of human potential. In the Army, there is a continuous need to learn, unlearn and relearn. This is necessitated due to regular induction of equipments and weapon systems having state of the art technology and need to keep them prepared for the war. In technical training for JCOs/OR, various up gradation and promotion examinations are also needed to be cleared in order to progress in the career progression ladder. In addition to the technical, managerial and tactical training; physical fitness training, firing, map reading etc are also required. In most of the Army training institutes, a System Approach to Training (SAT) is followed as per the Army Training Command\(^{53}\) (ARTRAC) instructions. Under this, the Mission Essential Tasks are broken down into various Terminal Objectives, Enabling Objectives and Learning Objectives. The complete SAT cycle from identification of needs to structuring of course contents, their delivery, feedback and review takes place in a continuous loop.

\(^{53}\) ARTRAC Training Instructions, *Systems approach to Training.*
Audit is one of the important management control technique. HR audit involves a formal, systematic and in-depth analysis, investigation and comparison. The primary aim of HR audit is to determine whether the personnel policies and practices are consistent with the organisational objectives. According to Dale Yoder, Personnel audit refers to an examination and evaluation of policies, procedures and practices to determine the effectiveness of personnel management. It is a periodic review to measure the effectiveness of HR management and also to determine further steps for more effective use of human resources.

As an organisation grows, continuous feedback is required to improve the performance of its personnel. It is all the more necessary in a diversified and decentralised organisation like the Indian Army in general and Corps of EME in particular. It helps to identify the gaps, lapses and shortcomings in the implementation plan so that it can be modified to meet the enhanced users’ expectations and emerging challenges. The timely changes in policies concerning promotion, posting, intake standards, grouping are few of the various initiatives taken in this direction. There are generally two types of audits in any army organisation.

The first one is related to administrative audit, called Administrative Inspection by higher formation. Under this; the general discipline, unit upkeep, management of funds, welfare of troops, their physical training etc are checked. The other is called Technical Inspection, under this; the technical activities like equipment availability state, ideas and innovations, technical acumen etc are monitored. This is relevant to Arm/Corps specific aspects of functional efficiency. In addition to above, there are audits by external agencies like Controller of Defence Accounts (CDA) representatives(reps) called LAOs as well as Test Audits by Comptroller and Auditor General (CAG) reps.

In Army Base Workshops, there is Annual Performance Audits (APAs) by Commander Headquarters Base Workshop Group and his reps once a year. On
the other hand, in Training Establishments audit on training effectiveness is carried out by ARTRAC reps. All these audits and inspections help the units in plugging the loopholes and improving their efficiency besides all time war preparedness.

2.9 **Studies in EME**

A study on “Trade Restructuring in the Corps of EME” was done by then Brigadier RK Sanan during 2002. It studied various aspects including present selection and induction process, engineering support vis-à-vis trade structure, career development and progression, environmental scan and cadre management aspects. In its recommendations, it suggested enhancement of intake threshold, deletion and merger of certain trades, introduction of certain trades besides emphasis on language proficiency and IT training.

Another study was conducted during 2006 under the leadership of then Major General TP Singh on “Re-engineering the Corps of EME to Meet Future Challenges”. This study concentrated on Engineering Support Doctrine, Restructuring EME Organisations including HRM aspects and Cooperation of Civil-Industry & Sister Services besides emphasis on Knowledge Management and Outsourcing. In its recommendations, it suggested Job Enrichment at all levels, establishment of Nodal Centres and Centre of Excellence (CoE) cum Technology Hubs, pursuance of User repair Concept, nomination of Station Workshops as CoE for Command theatre besides emphasis on induction, training and career management aspects. During this time itself, another study was done on “Review of Training and Employment Pattern of EME Officers”. It studied existing procedure for recruitment and promotion and suggested radical changes in training and employment of EME personnel in view of the emerging challenges. During 2007-08, a fourth study was conducted by then Commandant, MCEME and a team of officers on “Formulation of Training Philosophy & Perspective Plan for Training”. It studied Revolutions in Military Technology Perspective for 2025 and its impact on training at various training institutes besides training of civilian personnel.

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of the Corps of EME. In its recommendations, the study team suggested reduction in Infantry attachment of EME officers, shortening Young Officers (YO) course duration, breaking of present Advance Course to Equipment cum Advance Course, various changes in training at EME Centres and the proposal for training of Civilian personnel.

2.10 Army HRM Perspective 2022

The changes in battlefield environment and advances in technology have produced fresh challenges for logistics, HRM and support philosophies. The Indian Army envisions being an optimally equipped and weaponised force as per its Long Term Plan\(^59\) 2022 in order to meet all tactical, strategic and doctrinal challenges posed by such a technology advanced battlefield milieu. It is therefore imperative to have a repair and engineering support philosophy, which is holistic in nature and encompasses all aspects including HRM. In order to meet this objective, an Army HRM Perspective 2022 was conducted by the Director General Manpower Planning during 2006. The Study Group has recommended review of several facets with emphasis on impact on manpower profile, optimization of trade structure and outsourcing initiatives with a view to meet emerging challenges envisaged till 2022.

After doing the gap analysis, the present study has been attempted as a humble venture to bridge the existing gaps.

2.11 Objectives, Hypotheses and Research Methodology

Research in the common parlance is a search for knowledge. The Advanced Learner’s Dictionary of current English lays down the meaning of research as “careful investigation or inquiry especially through search for new facts in any branch of knowledge”. Redman and Mory\(^60\) (1923) defined research as a “systemised effort to gain new knowledge”. Research being an academic activity and as such the term is used in a technical sense. According to Clifford Woody\(^61\), “Research comprises of defining and redefining the problem, formulating hypothesis or suggested solutions; collecting, organising and

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\(^{59}\) DG MP, IHQ of MoD (Army), Long Term Perspective Plan 2022, 2006.

\(^{60}\) Redman, L.V. and Mory, A.V.H., The Romance of Research, 1923, p.10.

\(^{61}\) Kothari, C.R., Research Methodology: Methods and Techniques, Chapter 1.
evaluating data; making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit into the formulating hypothesis.”

Slesinger\(^\text{62}\) described research as “the manipulation of things, concepts or symbols for the purpose of generalising the extent, correct or verify knowledge, whether that knowledge aids in construction of theory or in practice of art”. The various types of research are:-

(a) Descriptive vs. Analytical
(b) Applied vs. fundamental
(c) Quantitative vs. Qualitative
(d) Conceptual vs. Empirical.

Since the research process is a well thought deliberate action, it has to follow predetermined steps. These are:-

(a) Formulating the research problem
(b) Extensive literature survey
(c) Developing the hypothesis
(d) Preparing the research design
(e) Determine the sample design
(f) Collection of data
(g) Execution of the project
(h) Analysis of data
(i) Hypothesis testing
(j) Generalisation and interpretation
(k) Preparation of report and presentation of the result.

The population of the study covers all the personnel working in the Army and EME in India. These personnel are posted at various locations throughout the country. This research work has studied the existing perceptions of the officers, JCOs and Other Ranks regarding the various HRD concepts and HRM practices and expectations with possible impact on the Indian Army; without manipulating the present scenario. Thus, the study is largely empirical in approach. Though the population of the study is finite but it is very large sized, the researcher has used

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sampling method. Every effort has been made to ensure that this sampling study largely proves representative of the population of the study.

The study has been carried out with the following main Objectives:
(a) To study the human resources planning in the Corps of EME.
(b) To know the extent of familiarity of Army personnel regarding HRD and its definition.
(c) To study the meaning and contents of the HRD philosophy as perceived by Army personnel and to study the relative ranks of various contents.
(d) To study the HRM practices as perceived by Army personnel and to study the relative ranks.
(e) To examine the recruitment, training, promotion, transfer and placement pattern in the Corps of EME.
(f) To analyse the existing trade structure and develop a mathematical model for resolving the issue of trade imbalances.
(g) To study the procedure for the development of human capital in the Corps of EME.
(h) To assess the methods of performance appraisal of personnel working in the Corps of EME.
(j) To examine the wage and salary structure, working environment, safety and health plans in the Corps of EME.
(k) To evaluate the motivational factors adopted in the Corps of EME and how the morale of personnel is boosted up.
(l) To examine the process of communication and how to maintain human resources records and audit in the Corps of EME.
(m) To identify the pitfalls in the existing HRM practices and suggest remedial measures.

In the present study an attempt will be made to test the following Hypotheses:

1. First Hypothesis. There are no differences between the levels of agreement of the Army personnel of Other Arms/Services and the Corps of EME for their familiarity with word “HRM” and its definition.
2. **Second Hypothesis.** The familiarity of meaning and contents of HRM philosophy, practices and measures do not differ between the employees of the Indian Army and the Corps of EME.

3. **Third Hypothesis.** HRM practices play a vital role in Indian Army including the Corps of EME for achievement of organizational objectives.

4. **Fourth Hypothesis.** Proper HR planning is vital for the Corps of EME.

**Research Methodology.**

The research methodology used by the researcher is in accordance with the empirical study requirements. As such, it covers the type of data collected, the methodology of data collection and the various statistical tools and techniques used for analysis of data and hypotheses testing. Being an empirical study, it is completely based on primary data collected by the researcher through well designed, structured and comprehensive questionnaire developed by the researcher by review of literature and existing research findings as also the objectives of the research study (questionnaire at Appendix ‘A’). The questionnaire contains scaling questions with five point scale and some questions are in the form of ranking questions too. The information sought being qualitative, scaling and ranking questions are most appropriate and through such questions, qualitative information has been indirectly quantified. This questionnaire was administered to a sample of 200 Army personnel working in both the other Arms and Services of Army and the Corps of EME throughout the country. The size of the sample was intuitively decided for a large sized finite population. However, in this sample, an effort was made by the researcher to have a representation of all the Arms and Services spread throughout the country.

The researcher contacted 200 army personnel, but could get the response from 140 personnel. As happens in the mailed questionnaire method, in this work too, the researcher could get 70% response. It covered the personnel of other Arms/ Services and the Corps of EME. The duly filled in questionnaires were edited by the researcher and in accordance with the requirements of the objectives.
and hypothesis, univariate and bivariate tables were prepared. For the purpose of analysis, the researcher used Arithmetic Average and Percentages for studying central tendency and Ranks and Spearman's Coefficient of Correlation for analyzing relative ranks and relationships. For hypothesis testing, Wilcoxon's Matched-pairs Test, Sign Test and Sandler's Test were used as non-parametric tests at 5% level of significance. The brief descriptions of the tests are as follows:

**Sandler’s A-Test**\(^{63}\): In this test, A-Statistic is found as follows:

\[
A = \frac{\text{The square of the sum of the Differences}}{\text{The sum of squares of the Differences}}
\]

or

\[
A = \frac{\sum D^2}{(\sum D)^2}
\]

The calculated value of A-statistic is compared with its table Value at given level of significance for a given degrees of freedom (n-1) and if the calculated value of 'A' Statistic is more than its corresponding table value, Null Hypothesis of 'no difference' between the paired data is accepted, otherwise the alternate hypothesis to denote 'difference' between the paired data is accepted.

**Sign Test**\(^{64}\): This test is applied on the basis of binomial probability distribution. In this test, it is assumed that the probability of values being higher than a given value is equal to the probability of values being less than the given value. On the basis of the numbers (positive or negative), the probability of any such number or fewer than that number (with total n symbols and \(p=\frac{1}{2}\)) is calculated. This calculated probability is compared with the \(\alpha\)-value (0.05) and when the former is found higher than the \(\alpha\)-value, the null hypothesis is accepted.

**Wilcoxon’s Matched - Pairs Test \(^{65}\)(or Signed Rank Test)**: This is a test used to test the differences between the paired data. In this test, T-Statistic is calculated on the basis of the ranks assigned to the differences between the paired data. While assigning the ranks, the values of the differences are assigned ranks giving first rank to the lowest difference and higher ranks to

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subsequent higher differences ignoring plus-minus symbols. Thereafter, the total of the ranks is calculated separately for positive-sign differences and negative sign differences. Of the two totals, the lesser value of the total is considered as the value of T-statistic. Calculated value of the T-statistic is compared with the corresponding table value of T-statistic for given level of significance and for given degrees of freedom (n-1). The Null Hypothesis of 'no differences' is accepted when the calculated value of T-statistic is found greater than the corresponding table value of T statistic; otherwise the alternate hypothesis of having 'the differences' is accepted.

The primary data will be collected from EME Archives and current data would be taken from EME Records. The secondary data would be in the form of anticipated projections based on the past experiences. The intimate association of the researcher with the Corps of EME in various capacities spread over more than three decades has provided an in-depth experience, which will provide useful suggestions for the future generations to learn from the past mistakes and not to reinvent the wheel time and again. Similar manpower planning practices are followed in other organisations of the Indian Army, Air Force and Navy.

2.12 Significance of the Study

Manpower of the Corps of EME has to be effectively managed to ensure the staffing norms as per the authorisation for the wide spectrum of trade and rank structures. The effective management of this manpower in the Corps of EME has to address issues like recruitment, regular wastages, premature retirements, promotions, unforeseen wastages, training duration and a plethora of tangible and intangible aspects. It becomes imperative that a model be developed for better HRM practices including manpower planning, based on simulation techniques for efficient manpower management in the Corps.

Further it is believed that this study shall initiate further researches in this area and will provide new guidelines of manpower planning to policy makers, planners, administrators and executives of defence ministry. In brief, the research study intends to discuss the various aspects related to HRM aspects in the Corps of EME and to see its relevance in the light of practices followed in industries and draw lessons using mathematical techniques for effective implementation and accurate projections for the future.