
Enhancing Managerial Power

Dr. (Mrs) Deepti Bhatnagar

How can a Manager enhance his power over others? This paper suggests a few answers to this question. Starting with the contention that managerial power includes much more than the limited concept of authority, the paper discusses different bases of social power and their relevance to a practising manager. It also discusses some sources which can make a subordinate powerful. The paper finally suggests a few strategies for augmenting one's power vis-a-vis other people in the organisation.

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This paper rests on the thesis that an important function of a manager is to influence those around him. The effectiveness of a Manager depends upon his obtaining results and results can be obtained by exercising power (both upward and downward). The term 'power' is used in the paper not in a limited sense of domination, oppression or control but in a broader sense where it is synonymous with 'influence' and means the ability to mobilise resources to get things done. This ability can be directly and indirectly linked with the productivity of the manager and his team.

A number of managers complain about a grievous loss of their power. This sense of utter powerlessness derives from a number of factors such as the growing indiscipline among subordinates, increasing bureaucratisation and rigidity of organisations, inadequacy of communication with their superiors, increased interference from politicians, etc. Yet working in the same milieu and at the same organisational level, some managers are more influential and productive than others which means that individual managerial power is something different from the organisational authority bestowed equitably on all members enjoying similar positions in the organisation. Power, then, is a more subsuming concept than authority. This paper discusses the concept of power, sources of managerial power, and strategies for becoming more powerful as a manager.

Power and Authority

The dynamics of power have fascinated men for a

long time. Thinkers and philosophers, right from the time of Plato to Machiavelli to Hobbes, Russell, Freud, Nietzsche, Adler, Weber, and McClelland, to mention a few, have variously analysed it using different terms and contexts. However, most of the times these discussions have a strong moral overtone. According to Plato, man's endless lust for power ultimately corrupts and destroys him unless it is tempered by humility and restraint, by law and custom or by a sense of responsible cynicism about class interest. Another line of thinking represented by Adler suggests that power should be overcome by some transcendental ideal such as sacrifice or social interest, and according to yet another school of thought advanced by Kropotkin, Goodman, etc. power needs to be completely replaced by love and self-expression (Winter 1973, pp 2-5.)

In a more contemporary context, the word 'power' continues to be used in emotion-laden terms such as 'power-hungry' 'intoxicated with power' 'playing power-politics', etc. Yet shorn of its evaluative component, what does the term 'power' mean? How does it differ from authority? Is it desirable or undesirable for an administrator to assume power, assert himself, become influential? The present section is addressed to some of these questions.

The Meaning of Power

The term 'power' is defined differently by different people. Many thinkers have tried to distinguish it from related concepts such as influence, leadership, authority, dominance etc. However, finer nuances apart, for our purpose power can be broadly visualised as the ability of one person or party to influence the behaviour of another person or party in the desirable direction.

The term 'power' has the following important characteristics :

1. It characterises a relationship which is fluid, not static. Power balance at a particular point in time indicates a quasi-stationary equilibrium of different forces of O and P at that Point. A slightest change in these forces can disturb the equilibrium. Consequently the balance of power can undergo a change.

2. A power relation can be unilateral (if only one party can exercise the power over the other) or bilateral (when both parties can exercise influence over each other). An interesting feature of most of our relationships is that bilateral power relations are mistakenly perceived as unilateral power relations by ignoring the power of lower participants. As we would discuss later, lower participants have their own sources of power which have to be taken cognisance of, in any exercise of power.

The term 'authority' signifies a limited aspect of power where a person owes his influence on others to the position he occupies in an organisation. Though used interchangeably by many people, the terms 'power' and 'authority' carry different meanings. Thus whereas a manager may have the authority to order the implementation of an innovation in the unit under his command, if the lower-level people choose to reject the innovation for some reason, the administrator would not have the power to implement that change.

According to Simon (1947 : pp 125-134), authority is a relationship between the two individuals, one 'superior', the other 'subordinate'. The superior frames and transmits decisions with the expectation that they will be accepted by the subordinate. Authority thus tries to ensure compliance and conformity; power or influence, on the other hand, can also develop commitment in subordinates. Authority is more restrictive than power in the ultimate impact upon the subordinate. Terms such as 'persuade' and 'suggest' describe the power of a person, not necessarily authority. Since authority seeks compliance, its impact is limited to the behaviour of the subordinate. The exercise of power can go much beyond the superficial behavioural compliance; it can, when employed skilfully, seek to build up commitment in people and mould their attitudes.

Weber has discussed three major forms of legitimate power :

Rational Legal : When subordinates recognise the power of their boss as being legitimate on legal grounds, the authority of the superior is seen against the backdrop of the organisational framework of rules and

regulations and the orders and directives of the boss are acknowledged as being legal and legitimate in that framework.

Traditional : When the power is considered to be legitimate because of people's faith in the sanctity of traditions. For example, in a monarchy the eldest son of the monarch automatically inherits the authority to govern the country on the demise of his father because of people's acceptance of the age-old traditions which have maintained and supported such practices in the past.

Charismatic : When the recognition of legitimacy derives from followers' admiration of the 'extraordinary' personal qualities of a person. Followers willingly subserve to the dictates of a charismatic leader because they believe that his extraordinary personal qualities such as heroism, courage, spirituality etc. are enough to justify the power that a charismatic leader enjoys.

Weber's discussion of different forms of authority underscores the fact that the power-holder enjoys his influence or authority over others only to the extent that the followers or the 'governed' acknowledge the legitimacy of his authority—be it rational—legal, traditional or charismatic.

This then indicates a major source of power of lower-level participants in an organisation; the superior has the authority over subordinates only to the extent that the latter grant him this power and recognise it as being legitimate. As Martin and Sims (1956 : 25-29) have put it "The complexity of the problem is increased when we recall that the real source of power is not the superior but the subordinate. Men can only exercise that power which they are allowed by other men—albeit their positions are buttressed by economic, legal and other props. The ultimate source of power is the group....."

The organisational authority is only one form of power of the administrator, and in the present age of irreverence for all authority, it is fast losing ground. Yet if a manager has to be effective, it becomes imperative for him to tap newer sources of power in addition

to the authority that he already enjoys and which is getting steadily eroded. Also, authority as a source of power is effective with reference to subordinates and public alone; but our broader definition of power includes influence over one's superiors and colleagues also.

Additional Sources of Power of the Administrator

Power is the ability of a person O to move the other person P in a direction desired by O. This movement can be affected in a number of ways : by O flaunting his authority to order the movement of P (in which case he may or may not get compliance, but will certainly not get commitment from P); by O making the movement so enjoyable that P himself would like to move; by O making P believe that the movement is in the interest of P : by P carrying out the movement because he respects O's judgement, by P complying because he feels he owes this allegiance to O because of their personal relationship, etc. This indicates that in addition to the organisational authority of O, there can be many other sources of his power or influence over P. In their famous essay 'The Bases of Social Power', French and Raven (1959 : 150-165) have discussed five bases of social power.

1. Reward power, based on P's perception that O has the ability to reward him;
2. Coercive power, based on P's perception that O has the ability to punish him;
3. Legitimate power, based on P's perception that O has a legitimate right to prescribe behaviour for him;
4. Referent power, based on P's identification with O.
5. Expert power, based on P's perception that O has some special knowledge of expertise.

Depending upon the power requirements of a particular administrative situation, these bases can be suitably adapted and combined to produce the desirable influence. Following paragraphs discuss some such bases which can help strengthen the power base of an administrator.

1. *Reward Power* : Though most incumbents

occupying similar positions in an organisation enjoy the same authority to reward subordinates, yet some manage to use it in such a way as to enhance their own perceived power in the eyes of the subordinates. Reward power is the ability of O to reward P when the latter behaves in a way desired by O.

Following factors determine the strength of reward power of O :

1. P's perception of the instrumentality of effort to reward i.e. his belief that if he behaves in a particular way, a particular reward would follow. There are some managers who assiduously establish this relationship by being consistent in their reward behaviour.
2. P's perception that O really has the authority to give him a particular reward. If P is not convinced of the actual authority of O to give a reward (a promotion or an accelerated increment, for example), even if O makes such promises, they would not have any influence on the behaviour of P.
3. P's subjective probability that the desired behaviour can be accomplished by him. If this probability is low, i.e. if a subordinate feels that no matter how hard he tries, he would not be able to reach the qualifying standards laid by his boss for giving a reward, P would not come under the reward power of O. If P feels he cannot fulfil the expectations of O for winning the reward, he would not even try to move in the desired direction and this would diminish the strength of O's reward power over P.
4. The attractiveness of the reward offered by O. If the reward offered for a particular behaviour is sufficiently attractive for P, he would like to aspire for it. However, if the reward is too low, or not attractive enough, O will not have any reward power over P.

Managers can examine their own reward behaviour and the attractiveness of rewards offered by them to their subordinates, to decide how to enhance their reward power over subordinates.

Coercive Power

According to French and Raven (1959, 157) coercive power of O/P stems from the expectation on the part of P that he will be punished by O if he fails to conform to the influence attempt.

This punishment can vary in severity from a show of displeasure by the boss to the termination of the services of the subordinate. The strength of coercive power depends upon :

1. P's perception of the actual authority of the boss to give the threatened punishment;
2. P's perception of the instrumentality of non-conformity to the influence attempt and the punishment threatened;
3. The strength of P's negative valence towards the punishment. For example, if a subordinate does not care much for his present job, the threat of his boss to fire him if he fails to fall in line is unlikely to elicit the desired conformity from him and O's coercive power over P would be low in that case. Coercion results in lower attraction of P towards O and high resistance.

Legitimate Power

French and Raven have defined legitimate power of O over P as "that power which comes from internalized values in P which dictate that O has a legitimate right to influence P and that P has an obligation to accept his influence."

As French and Raven have discussed at length, cultural values and personal code and standards sometimes are responsible for recognition of legitimate power. In Indian culture, for example, the aged are granted the authority to prescribe behaviour for the young and having internalised this norm, we tend to perceive the prescriptive behaviour of old parents towards their grown-up children as legitimate.

The perception of legitimate power applies to reward and coercion also. For example, a particular punishment given by O can be seen as being legitimate or as not being legitimate, and the perception of legitimacy

would make a significant difference in the attitude and behaviour of P towards O.

Referent power

This means the power of O over P on the basis of the identification of P with O. This identification can be developed and maintained if P "behaves, believes and perceives" as O does. The stronger this identification, the greater will be the referent power of O over P.

Sometimes O and P may not even be aware of the referent power of O, yet P tries hard to identify with O. An example can be P's identification with O because they both belong to the same state or the same caste, or because O has a quality which P admires and wants to develop in himself.

Expert Power

The strength of expert power of O depends upon the P's perception of O's knowledge and expertise in relation to his own. A common example of expert power is the acceptance by a new-comer of directions given by a local person. Expert power has a limited range as the expertise of O is perceived in a specific limited area, and as French and Raven have pointed out, an attempt by O to extend this influence to areas outside the range of expert power can sometimes reduce the expert power.

The foregoing discussion highlights the fact that in order to exercise influence a manager need not restrict his choice only to one base, such as coercive power. He has a range of choices in his repertoire which he can use variously with different groups. For all the five types discussed above, the stronger the basis of power, the greater the actual power. A manager can strengthen these bases in order to be more powerful. For example, a manager can increase his expert power by increasing his own competence, referent power can be buttressed by building a bond between the superior and the subordinate, by identifying the factors common between the two and referring to them once in a while. There can be many more ways of strengthening these bases which a manager working in a particular situation, with a particular group of people (such as superiors, subordinates etc.) would be able to decide.

Sources of Power of Subordinates

In the exercise of power in an organisational situation, just as it is important to assess the bases of one's power, it is equally important to know the sources of power of one's subordinates. This knowledge gives the superior a relative assessment of his power over his subordinates and a better understanding of their influence over him.

David Mechanic (1962, 349-362) has discussed some factors which contribute to the power of subordinates in an organisation. Following Thibaut and Kelley (1959), Mechanic argues that "to the extent that a person is dependent on another, he is potentially subject to the other person's power." The dependence of the boss on the subordinate is the basic source of the power of the subordinate. This downward dependence resulting in upward exertion of power spawns the following main spheres :

1. *Expertise* : When the superior depends upon his subordinates for his specific knowledge and skill, and access to information. Extending the same argument a little further, Mechanic maintains that a person difficult to replace because of his knowledge would be more powerful than a person who can be replaced easily.
2. *Effort and Interest* : Mechanic's next hypothesis is that ".....there is a direct relationship between the amount of effort a person is willing to exert in an area and the power he can command". Thus in areas or situation where bosses are reluctant to participate for some reason, subordinates who are willing to undertake the activity obtain power pertaining to that task.
3. *Location and Position* : An individual's access to persons, information and instrumentalities (physical aspects of the organisation such as equipment, machines, money etc.) in the organisation often bestows on him considerable power. Thus, sometimes subordinates command power because of their direct control over some physical resource, or direct access to first-hand information or an influential person inside or outside the organisation.
4. *Rules* : The subordinates' thorough familiarity

with the organisation, its rules, and precedents gives subordinates the power to interpret new orders or directives from the boss in a way convenient to them.

The above discussion reemphasizes the bilateral nature of power between a superior and a subordinate. Though the superior enjoys more legitimate power, the subordinate is also not a powerless figure in the organisational drama. To sum up, a superior can derive his influence over subordinate from reward power, coercive power, legitimate power, referent power and expert power. Also, though not discussed by French and Raven, personal relationship can be an important source of power for the boss. The power of subordinate rests on his knowledge, effort and interest, access to persons, information and instrumentality and in the intimate knowledge of the organisation and its rules. In addition, though not included by Mechanic in his conceptualisation, the power of a subordinate as an individual lies in his membership of the institution representing interests of his class, namely unions and associations. The political complexion and alliance of the union to which he belongs, its power as an institution vis-a-vis the organisation which employs the subordinate is also an important factor determining power balance between the superior and the subordinate.

Power and Action

Coming to the relevance of the concepts discussed above, a manager needs to make a dispassionate assessment of his own power and its bases; the power of his superiors/subordinates and its sources; and decide whether he needs to alter the present power balance, if yes, how.

Before deciding his power strategy vis-a-vis subordinates, the manager needs to be clear whether he wants compliance from them or commitment. Zaleznik (1973: 285) has described compliance as "an attitude of acceptance when a directive from an authority figure asks for a change in an individual's position, activities, or ideas. The individual complies or 'goes along' usually because he is indifferent to the scope of the directive and the changes it proposes." Compliance entails a disinterested mechanical implementation of the order as far as

feasible and mechanically stopping the work when faced with the least resistance from any quarter.

Commitment "represents a strong motivation on the part of an individual to adopt or resist the intent of a directive." If a person feels committed to a directive, then he will try his best to ensure its success and, if need be, use his ingenuity to surmount impediments. If he decides to oppose a directive than he can either do so openly, or appear to be compliant but sabotage the order quietly.

If a superior is seeking compliance from subordinates, then use of organisational authority would be appropriate. If, however, he wants to secure commitment from subordinates, then other measures such as persuasion, invoking referent power, sound human relations, involvement, consultation and participative style of management would be necessary.

Also, since a manager needs to exercise his influence not only on subordinates (in which case use of authority can help), but also on superiors and peers (where he has no formal authority) a manager needs to have command over a wide range of power strategies from which he can make appropriate choices depending upon the situation.

Kipnis and his associates (1981 : 69) have suggested a few strategies for enhancing managerial power and effectiveness. However, the choice of strategy would depend upon the hierarchical position and power bases of the influencee and upon the gravity of issues involved. Following are some of the approaches suggested by Kipnis :

1. Assertiveness : implies sticking to one's view point firmly, taking recourse to organisational rules and norms, heading for a showdown, if necessary.
2. Ingratiation : means making the influencee feel important; being friendly and humble, inflating the other person's sense of self-worth.
3. Rationality : means exercising influence on the basis of cold reason and logic. While using this strategy a manager adopts an analytical

approach, explains a particular proposal, and presents cogent arguments in support of his stand.

4. Exchange of benefits : works with superiors, colleagues and subordinates alike. This consists of doing someone a favour, going out of one's way to help the other person. Such benefits are exchanged across different levels in an organisation. Keeping a person under obligation is a power tactic used by many managers to reserve the right to exercise their influence on him in future.
5. Use of sanction : means using the organisational system of reward and punishment on subordinates, for example recommending for promotion, stopping increment, ordering transfer, etc.
6. Upward Appeal : consists of seeking the support of a senior person in the organisation to put additional pressure on the influencee. In spite of its obvious limitations, sometimes managers do resort to bypassing the boss and making an appeal to the boss's boss.

The selection of an appropriate power strategy rests upon a manager's perception of the power balance between himself and the influencee as also upon the stakes involved. Also, a manager can use a combination of strategies like ingratiation and rationality. The following tips, adapted from the guidelines presented by Huber (1981) can help managers enhance their power :

- Create the perception of power : In order to build up an image of being a powerful person manager needs to use his power resources sometimes.
- Being with the use of the least costly form of power : For example, vehicle using the reward power, a manager can begin with praise and appreciation which can be followed with a raise if the positive, productive behaviour persists.
- Relate rewards and punishments directly to behaviour. Low instrumentality of reward/

punishment to actual behaviour weakens the power of the manager.

- Select an appropriate power strategy that is likely to be most effective given the other persons position, power bases, personality predilections and the history of relationship between the two.
- Maintain power exchanges in such a way that scales are tipped in favour of the Manager. Thus it is better for a person to do legitimate favours to others rather than remain under their favour.
- Assert one's power only in these areas over which one has actual control. It can be greatly damaging for a manager to try to assert his power in an area in which others know that he has no real control.
- Use power discreetly and sparingly. Due to its short-lived impact and negative side effects, coercive preferably be used as a last resort. Instead of allowing them to deplete through over use, a manager should use his power resources in such a way that they are continuously replenished and strengthened.

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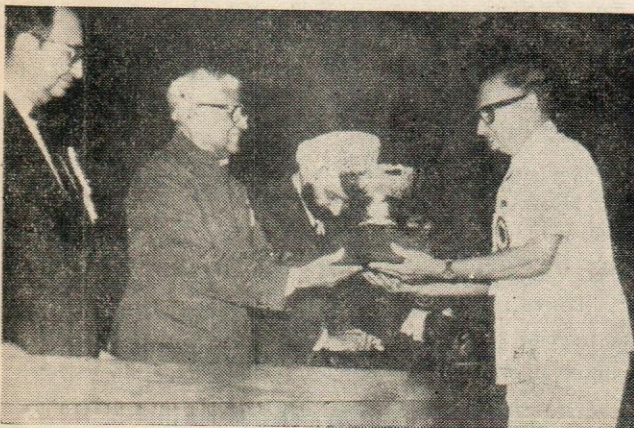
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Managing Executive Stress

DR. SATISH MAMORIA

In this paper an attempt has been made to explore causes and consequences of important problem of stress in the arena of personnel management. As stress is intimately concerned with one's psyche, it cannot be effectively arrested by extensive medication or even by adapting any popular esocentric method. We have given a few simple methods, which if taken care of, may help individuals to fight with this dragon.

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Introduction

In the history of organisational literature the executive stress gained focus with the classical work of Kahn¹ et al on "Organisational stress : Studies in Role Conflict and Ambiguity." Since then immense literature has been flooded on the said issue. Researchers like Gross (1970)² Lyons (1971),³ Selye (1974),⁴ McGrath (1976),⁵ Beehr Walsch and Tabler (1976),⁶ Beehr and Newman (1978),⁷ Student (1978),⁸ Organ

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8. Student, K.R. "Personnels Newest Challenges Helping to Cope with Stress." *The Personnel Administrator* Nov., 1978 pp. 20-24.

(1979),⁹ Kiev and Kohn (1979),¹⁰ Albrecht (1979)¹¹ have explored the possible gamut of causes and consequences of executive stress.

Stress being an interdisciplinary concept has been conceptualized in a number of disciplines namely physiology, psychology, psychiatry, physics and management in different fashions. One of the common connotation of stress (a latin jargon) means hardship, strain, adversity or affliction (Oxford English dictionary 1933). Physiologists' view stress as any stimulus that interferes with normal physiological equilibrium of an individual. Psychologists consider stress as any demand that requires coping behaviour on the part of the individual. To physicists stress means any force acting on a body to produce strain or deformation. In context of management literature stress can be conceptualized as any external unexpected force or pressure that leads to increased role load and role conflict on the part of focal person.

Hammer and Organ have defined—stress as “a set of circumstances under which an individual cannot respond adequately or instrumentally to environmental stimuli or can so respond only at the cost of excessive wear and tear on the organism—for example chronic fatigue, tension worry, physical damage, nervous breakdown or loss of self esteem”.¹²

Mere exertion of stress does not lead to any adverse consequences, as body's metabolic process on its own deploys defense mechanism to maintain homeostasis and if it is not achieved stress sets in. So long as stress remains within limits of adaptability the individual can effectively cope with it, analogous to elastic limits, if one experiences a still higher degree of stress various pathological and behavioural problems spurt up.

9. Organ, D.W. The Meaning of Stress *Business Horizon* June 1979 pp 32-40.

10. Kiev and Kohn, “Executive Stress” AMACOM New York, 1979, pp 20-24.

11. Albrecht, K., “Stress and the Manager : Making it work for you” Englewood Chtt, New Jersey, Printice Hall, June, 1979.

12. Hammer C.W. and Organ D.W., *Organizational Behaviour*, Business Publications, Dallas, Texas, 1978, p. 193.

Stress and its Consequences

Executive stress is one of the most debilitating personnel and medical problems of modern complex organizations. Dale and Urwick have given almost unbelievable record of executives serving in an efficient organisation.

1. Executive Vice President, aged fifty, had had three attacks and a stroke. He was retired on full pay and shortly afterward committed suicide.
2. Treasurer trembles each time the president talks to him and has developed a skin disease
3. Employee relations director who feels he cannot live upto the job has had a nervous breakdown, and is under constant treatment by psychiatrist.
4. Vice president marketing had had a heart attack while playing with his children after “a record game of golf”.
5. Vice president-planning, had become a manic depressive and had to be moved to another location—to a “soft job”.
6. Vice president-finance, had been fired after a disagreement with the president; he had overdrawn on his charge accounts with local firms because of the pressure his wife had been exerting on him to live beyond his means.
7. Director of purchasing suddenly dropped dead of a heart attack.
8. Regional manager suddenly dropped dead of a heart attack.¹³

Though, the above is not necessarily representative of all executive personnel, but it does indicate that stress, among executives is more common than general population.

Stress is manifestation of strain that effects physiological, psychological and physical well being of an individual. A stress ridden individual suffers from

13. Dale E. and Urwick L., *Staff in Organizations*, McGraw Hill Book Company, New York 1966, pp. 17-18.

a myriads of problems that seriously hamper his personal life and activities associated with job. Its various consequences can be classed under two broad heads. (see Table No. 1) The one behavioural and the other pathological. The behavioural consequences often play with one's psyche rendering him psychologically and emotionally handicapped to behave, think and act rationally and logically. Further an individual develops certain undesirable symptoms as apathy, over anxiousness, stubbornness, tendency to overreact etc. that make him emotionally disturbed. If these conditions prevail over long time a variety of pathological disturbances take toll of an individual rendering him mentally and physically inert to discharge his normal duties consequently he is forced to retreat from the active job life either intermittently or for prolonged period, depending upon the intensity of stress and its pathological manifestation. Thus, we may obviously conclude that both behavioural and pathological consequences of stress adversely effect the executive carrier either by dragging him out of action at crucial times or lowering his efficiency for a long time.

Table 1
Consequences of Stress

Behavioural Consequences	Pathological Consequences
Tendency to overreact	Upset stomach
High susceptibility to annoyance	Loss of appetite
Readiness to admit common faults	Peptic ulcer
High tendency to agree with others	Hypertension
Suspicion and mistrust	Cardiac trouble
Apathy	General disability
Anger and aggression	Migraine
Inability to concentrate	Anxiety attacks
Unrealistic fears	Depression
Over sensitivity	Insomnia
Alienation & Frustration	Frequent Colds
Loss of self esteem	Chronic fatigue
	Loss of libido
	Skin eruptions
	Sustained muscular tension

Etiology of Stress

Researchers on executive stress have recognized two

types of stressors namely (i) Job related stressors (ii) Off the job stressors.

Stress on a focal person at any given time is the resultant of these two stressors. As they collectively and not individually determine its frequency and intensity.

Job Related Stressors

One of the major sources of stress is job itself. An executive on an average spends eight to ten hours on the job under heavy pressure of various conflicting demands that too in an alienated and dehumanized environment. Wherein he is supposed to attain his mission inspite of heavy odds. Consequently he is forced to tax his biological limitations, which more often than not results in stress. A brief review of the researches on executive stress will suport the issue in question.

McGrath (1976)¹⁴ has identified six sources of stressful situation, (1) Task based stress (difficulty, ambiguity, load etc.) (2) Role based stress (conflict ambiguity, load etc.) (3)Stress intrinsic to the behaviour setting (eg. effects of crowding, of under manning etc.) (4) Stress arising from physical environment itself (extreme cold, hostile forces etc.) (5) Stress arising from social environment. (interpersonal disagreement, privacy, isolation etc.) (6) Stress within the personal system which focal person "brings with him" anxiety, perceptual styles, Landy and Trumbo¹⁵ classified stressor as Job insecurity, excessive competition, hazardous working conditions, task demands and long or unusual working hours Gross (1970)¹⁶ has categorized stressors under three heads on the basis of its origin (1) due to organizational careers (not losing job, career advancement, disengagement) (2) due to task (routinization of work task difficulty and (3) due to organizational structure.

In light of above researches, different type job related stressors have been identified in Table No. 2 :

14. McGrath, op. cit. p. 87.

15. Landy, F.I. and Trumbo, D.A. "Psychology at Work" Homewood III, Dorsey, 1976.

16. Gross op. cit., p. 129.

Table 2
Types of Stressors

Job related stressors	Non job related stressors
Pressure of work	Financial problems
Time pressure	Domestic hassels
Role ambiguity	Marital discord
Non-Co-operative role set	Problems with children
Lack of adequate motivation	Chronic sickness of self or or family members
Unfavourable leadership style	
Uncertainty of advancement	
Organizational politics	
Personality and value conflict	
Communication go	
Fear of boss	
Fear of charge	
Job insecurity	

It has been observed that quite often pressure of work, time pressure-role ambiguity, non-co-operative role set, exerts considerable pressure on the individual which invariably leads to stress. Organizational policies pertaining to motivation, leadership advancement, communication and change more often than breed stress. Last but not the least important is the fear of boss, organizational politics, value conflict and personality conflict that further enhance stress.

(ii) Off the job stressors

These stressors are budded off by individuals personal and family problems which have far reaching implications on one's job behaviour. Kiev and Kohn (1976)¹⁷ has identified top five of "Off the job causes" of managerial stress. (1) Financial worries (2) Problem with children (3) Physical problems (4) Marital problems (5) Change in residence. Similarly Holmes and Rahe (1968)¹⁸ have reported four important personal causes of stress (1) death of a spouse or other family members (2) divorce (3) marital seperation (4) major injury or illness.

Like organization, an individual in his family life plays a variety of conflicting roles say that of father, husband, son etc. The multi role pressure forces him to cope with different demands of role set. It is quite natural that failure is inevitable, at some step leading to stress.

The major of the job stressors include (1) financial problems (2) domestic hassels (3) marital discord (4) problem with children (5) Chronic illness of self or family members.

Not that all the executives suffer from all the above cited problems, but even a single problem is good enough to breed the other ones.

Off the job stressors being intimately concerned with ones personal and family life hence they are more difficult to manage even with counselling or extensive medication.

Stress and Job Performance

Stress can be either helpful or harmful depending on its quantum and employee's ability to cope. Like challenges certain amount of stress boost managerial efficiency, as during stressful situation, individual works to the maximum limit of his efficiency, however, as its quantum goes up, individual performance tends to decline, loses ability to cope and begins to show erratic behaviour. Finally when it reaches the breaking point the performance reaches the lower limit, because he is neither physically nor mentally fit to work.

Management of Stress

Stress has become a part of executive attire, in to-days business world. They at different hierarchical levels experience a varying degree of stress depending on their task, role and interpersonal factors. Increased stress adversely effects one's job and personal life which is quite often reflected in productivity, efficiency, job satisfaction and morale etc. besides ones physical and mental health.

Enlightened organizations have started utilizing a variety of assistance programme ranging from counsell-

17. Kiev and Kohn, op. cit., 35.

18. Holmes, T.H. and Rahe R.H., "The Social Readjustment Rating Scale" *Journal of Psychosomatic Research* Nov. 1968, pp. 213-218.

ing to psychiatric care to fight with this mushrooming personal problems of executives. Also esoteric tools like zen, yoga, transcendental meditation (T.M.) are quite in air. Besides these, technique of bio feedback is also gaining popularity. Executives at their own level by use of drugs, medication and alcohol try to combat stress.

The various methods cited above no doubt do help in the management of stress but cannot wipe it out altogether (i.e. for the time being it can be made dormant) in most of the cases it is suppressed. The so suppressed stress can spurt up at any time even on slightest provocation.

Stress as being a dominant part of one's psychology and physiology can be minimized only if executives themselves search for its causes and try to avoid all those situations that may lead to stress. To overcome stress, the best way on the part of the executives is to learn to live with stress. A few words of caution if followed can enable them to adjust.

Time Management

Effective time management is also a major killer of stress. It necessitates that you should have optimum utilization of time, which in a way calls for efficient planning of a day's work schedule. By doing so you will get rid of un-necessary strains arising out of time pressure, excessive work load, meeting emergencies etc.

Keep your temper cool

Do not loose temper, else you will shoot up your blood pressure or have cardiac trouble. So howsoever the situation may be aggravating, do not loose your patience, think rationally and logically but not emotionally. It will enable you to keep your head and heart cool.

Have a lively home life

Feel at home while at home, stop burying yourself in files while at home, spare your evenings for chit chat with your children and wife, enjoy tea with family members after day's work drudgery. This will not only enable you to kill stress, but shall also help you to have smooth sailing on domestic front.

Find Recreation time

Recreation is another tool to arrest stress. So to keep a gay mood watch T.V. or Video, listen to music, have in door games, go for an outing on holidays. It will enable you to kill monotony and make you feel fresh.

Besides these a few more suggestive stress killers, are listed below :

- Do not over exert.
- Cut down excessive smoking and drinking.
- Concentrate on your hobbies.
- Have a periodical medical check up.
- Master art of relaxing.



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Management Styles in Banking

V. ANAND RAM

In this paper an attempt is made to establish some tentative relationships between management style on the one hand and performance variables on the other and distinguish between some effective and some less effective ways of combining these dimensions. The implications of the association between management styles and performance for training and management development are briefly discussed.

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Massive branch expansion has been one of the major developmental activities of commercial banks in the post nationalisation era. As a result of growth and expansion of branch network, commercial banks were faced with the problem of finding staff which was adequately trained to take the responsibility of manning the branches that were newly being set up. The shortage of managerial talent has been very acute. In order to meet this challenge the training system in the banking industry has developed and expanded considerably in the last decade. While the training system has made a significant contribution towards developing managerial talent—shortage of managerial personnel continues to be a major problem for the banking industry.

The new role envisaged for bank branches as agents of socio economic change in the regions they serve, has altered the role of the bank agent radically. Commercial banks have redesignated the Branch Agent as Branch Manager—explicitly recognising the fact that the Branch Agent is now performing a managerial function in the changed context. As an agent of Head Office his primary task was to carry out the instructions of the Head Office. From checking books, registers and accounts, he is now responsible for managing money and people; from supervision of credit, he is now responsible for promoting socio economic development of a region. Bank managements have recognised the fact that managerial skill is a prime requisite for the branch manager and his team of officers to discharge their role effectively.

Despite the increasing prominence that branch managers have come to occupy in the banking industry, their approach to management has been something of an enigma. There have hardly been any studies which have examined the beliefs attitudes, values of branch managers in relation to the external environment. It is these beliefs, unarticulated assumptions etc. which serve as a guide post for branch managers in a decision making context.

Research Objectives

The principal agency which mediates an organization's response to its external environment is management. It is the task of management to reconcile and manipulate the various pressures on the organization and through its decisions and directives give the organisation a distinctive form. A study of management styles—the distinctive, adaptive behaviour of a managerial group in the context of the environment in which a branch functions is of vital importance to all those who are concerned with the best possible utilisation of managerial resources in the banking industry.

In this paper an attempt has been made to :

- (1) Identify some commonly utilised styles of management in bank branches
- (2) Examine the relationship between management styles and organizational performance
- (3) Draw implications of the association between two for management practises.

The Concept of Management Style

Management style is the operating set of beliefs and norms held by key decision makers in an organization. By virtue of the fact that the officers at a branch face common types of problems, opportunities and constraints, some consensus is likely to emerge on what is good and bad management practise. These beliefs when translated into action constitutes the strategy of the branch for growth and effectiveness.

The principal agency which mediates a branch's response to its external environment is the group of officers working at a branch. The Branch Managers

and his team of officers are termed as Branch Management for purposes of this paper. It is the task of Branch Management to reconcile and manipulate the pressures on the branch from the external environment. In so doing, each managerial group acquires a distinctive style. For example, a branch management faced with a competitive environment may decide to adopt a style which has a heavy emphasis on planning and participation. Alternatively, it may choose a style which is oriented to risk taking.

Management style as a subject matter of study has a variety of dimensions none of which can be discounted as being of mean consequence for the functioning of an organization. A comprehensive study of management styles, would, involve an indepth study of all aspects of a manager's job. Since such an all encompassing study would be too wide, it was decided to limit the scope of the study to the most dominant aspects of the managers behaviour in relation to the external environment. The five dimensions that have been used in this study are.

Planning

Planning reflects the extent to which work is systematically planned and scheduled. It also reflects the extent to which a branch depends on intuition, common sense and hunch as a basis for decision making in contrast to careful evaluation of project proposals on the basis of facts, figures and scientific analysis.

Risk Taking

Risk taking reflects the extent to which a branch aggressively interacts with the external environment in contrast to a cautious, conservative approach, it represents the extent to which a branch makes attempts to proactively influence the environment.

Bureaucratisation

Bureaucratisation represents the orientation of the branch to rules and procedures. It measures the extent to which branch managements are willing to deviate from rules and procedures in the interests of

task accomplishment in contrast to branches which consider rules and procedures as ends in themselves.

Coercion

Coercion represents the degree to which branch managements use force or threats in dealing with superiors or subordinates in contrast to the use of persuasion and joint problem solving.

Participation

Participation reflects the degree to which decision making is made on the basis of consensus in contrast to decision making where one individual who has the formal authority takes the decision.

Sample

Seventy branches of a leading bank in the country constituted the sample for the study. The branches are all located in Gujarat and vary in size from small to very large.

Measures

To gather information on the elements of management style, both questionnaires and interviews were used. On the basis of interviews held with senior officers a catalog of "specimens of behaviour" which represent the five elements of management style were constructed. These specimens were converted into rating scales for measuring the orientation of branch managements to each of the five elements of management style.

The development of rating scales involved the following steps :—

- (1) The systematic observation of branch records, audit reports etc. were undertaken. This coupled with the preliminary interviews with Branch Managers provided us with a rich source of data for identifying managerial actions which represent the orientation of branch managements to each of the five elements of management styles.
- (2) A pilot test was conducted on a sample of thirty five branches. An initial draft of the

questionnaire was sent to these Branches and after the responses were received back, the respondents were interviewed on a personal basis. This helped us in improving questionnaire by removing ambiguities in the phrasing of questions.

- (3) The modified version of the questionnaire was used to collect data from a larger sample of seventy branches.

The development of rating scales, as indicated above, involved measuring the orientations of branch managers and the stance they adopt towards the events in the external environment. The assessment of performance of the sample of branches studied involved objective and subjective measures. They are—

- (1) The ratio of actual to budgeted levels of business volume.
- (2) Subjective ratings of performance in comparison with other banks in the area on the dimensions of growth and profitability.
- (3) Subjective ratings on six critical aspects of a branch's performance by senior officers of the branch. The six aspects are—
 - (i) achieving targeted levels of business
 - (ii) Customer service
 - (iii) Staff relations
 - (iv) Efficiency i.e. Cost Control
 - (v) Maintenance & upkeep of premises
 - (vi) Development of business.

These three measures of performance were aggregated into an overall performance index in the light of which a branch's performance is assessed. The Appendix indicates the various items used for measuring the variables in the study.

Results

Management styles are different combinations of the five dimensions discussed earlier. Each branch's management has a unique style—that is, a unique combination of planning, risk taking, bureaucratisation, participation and coercion. However, some branches are likely

to be more similar to one another than to others. In order to identify distinct styles of management that are configurations of the five dimensions, a hierarchical cluster analysis (Ward, 1963) was performed on the data. Five styles were identified these are presented in Table—1. The means and the standard errors of the style dimensions are shown in the Table.

The professional Management Style

These are branches wherein the management is high on planning and participation. The score on bureaucratisation is just about average. The branches have somewhat low scores on risk taking and coercion. In view of the emphasis on planning and participation and aversion to coercion, we shall call this the professional style of management.

The professional style of management is characterised by heavy reliance on systematic planning of work at the branch level wherein regular schedules are prepared for visiting clients and as far as possible attempt is made to stick to these schedules. It also involves a dependence on scientific methods like break even point analysis in evaluating proposals for advances to parties. There is also a serious attempt to involve all the per-

sonnel of the branch in its activities so that it gives a sense of "we feeling" to the clerical and subordinate staff at the branch. A professional management style also involves frequent use of group decision making through committees at the branch level.

The Quasi Entrepreneurial Style

The branches in this cluster are characterized by low Scores on planning, participation and coercion. The scores on bureaucratisation is just about average and high on the dimension of risk taking. In view of the fairly heavy emphasis on risk taking, we shall call this the quasi entrepreneurial style of management.

The quasi entrepreneurial style is perhaps the result of a dynamic branch manager who commands the respect of all the employees in the branch and perhaps single handedly runs the show. The only significant characteristic is the high level of risk taking and reliance on his own intuitions and judgements about the soundness of a party with a proposal for advances. The low scores on planning and participation indicate that he prefers to respond to situations as and when they arise instead of planning ahead for contingencies. The reliance on his own intuition for decision making gets reflected

Table 1

Dimensions of Management Style : Standardised Scores
Sample : 62 Branches*

	Number of branches		Planning	Bureau- cratisation	Risk taking	Coercion	Particip- ation
Professional Management Style	21	Mean	1.06	.12	-.15	-.30	.48
		S.D. of Mean	.10	.20	.05	.17	.22
Quasi Entrepreneurial Style	9	Mean	-.61	.07	.95	-1.26	-.80
		S.D. of Mean	.10	.11	.06	.04	.17
Traditional Bureaucratic Style	21	Mean	-.73	.45	-.32	.46	.10
		S.D. of Mean	.13	.19	.12	.22	.21
Conservative Mechanistic Style	5	Mean	-.14	.33	2.05	-.67	-.41
		S.D. of Mean	.30	.27	.21	.23	.31
Entrepreneurial professional Style	6	Mean	.82	-1.11	1.70	.31	1.16
		S.D. of Mean	.25	.28	.13	.35	.35

* Eight branches could not be included in any of the five clusters (i.e. Styles) since their score on the five dimensions were unique.

in a low level of participation.

The Traditional Bureaucratic Style

In this cluster branches are characterised by low scores on planning, risk taking and participation. The scores on bureaucratisation and coercion are somewhat high. In view of the emphasis on bureaucratisation we shall call this style the traditional bureaucratic style of management.

The traditional bureaucratic style is characterised by a firm faith in the efficacy and soundness of the rules and procedures prescribed by the bank without making any exceptions. Since managers with this style perceive their task as that of surveillance, they are so much absorbed with the policing function that they consider investment of time in planning of work as a waste. They are also not likely to have faith in the use of participative decision making since the climate of policing that they create tends to get carried over to the lowest levels of the branch. The heavy emphasis on sticking to rules, procedures and precedents also does not permit them to take risks. Since, particularly in banking, taking risks involves relaxing rules and procedures once in a while when the situation warrants, the branches with a traditional bureaucratic style find it very difficult to adjust themselves to such a situation.

Conservative Mechanistic Style

In this cluster branches are characterised by fairly low scores on coercion, average scores on planning and participation and very low scores on risk taking. The branches in this cluster score moderately high on bureaucratisation. In view of the high scores on bureaucratisation and very low scores on risk taking we shall call this the conservative mechanistic style of management.

The conservative mechanistic style puts a low value on risk taking and also fairly low values on planning and coercion. The conservatism of this style is manifested in the adherence to rules and procedures. Perhaps, it is this style of management which has come in for a lot of criticism from the large majority of corporate customers as reported in the study conducted by NIBM (1970). The mechanistic mode manifests itself in the

frequent use of hierarchy for resolving conflicts between employees at the branch level.

The Entrepreneurial Professional Style

The significant aspect of this cluster is the high scores on planning, risk taking and participation. The score on bureaucratisation is very low. The score on coercion is above average. In view of the emphasis on planning, risk taking and participation we shall call this the entrepreneurial professional style.

The entrepreneurial professional style is a combination of all the desirable features that are found in the other styles of management. A combination of high degree of planning, risk taking and participation translates itself into an enlightened leadership where the interests of the client come to occupy a prominent position in the list of priorities of the branch. Any technique or method which serves this end is unhesitatingly used by the management. A low degree of bureaucratisation, perhaps, implies that the employees at the branch resolve their work related problems on their own without having the need to use the hierarchy for settling the disputes. A fairly moderate degree of coercion implies that the management does not hesitate to use force when it is in the best interests of the branch.

Management Styles and Organisational Performance

The findings reported in this segment are divided into two parts. In the first part the intercorrelations between the style and performance variables are discussed. This is followed by an examination of the relationship between management styles identified on the basis of cluster analysis and performance variables.

Table 2 indicates the relationship between style and performance variables.

The relationship between planning and relative index of performance ($r=.27$) and overall performance index ($r=.25$) is high and indicates the importance of planning for performance and also the competitive edge that organizations with a planning orientation have over their rivals. The significant correlations between planning and the two measures of performance are consistent

Table 2
Intercorrelations Between Variables
Sample : 70 Branches

	9	8	7	6	5	4	3	2
8	.16							
7	.53*	.08						
6	.53*	.01	.20					
5	.17	-.22	.01	.24*				
6	-.12	-.02	.12	-.07	.16			
5	-.01	.21	.12	.27*	-.03	.06		
2	.00	-.11	-.01	-.12	-.11	.11	-.26*	
1	.25*	-.01	.27*	.13	.37*	-.08	.09	.17

*Correlations marked with an asterik are statistically significant at the .05 level.

Key to variable list : (1) Planning
(2) Bureaucratisation
(3) Risk Taking
(4) Coercion
(5) Participation
(6) Subjective Index
(7) Relative Index
(8) Objective Index
(9) Overall Performance Index

with the findings of a number of researchers (Thune & House, 1970; Herold, Thune and House, 1972; Khandwalls, 1975) that organizations that do formal planning tend to perform better than their rivals that do not, and indeed tend to do better than their performance before they instituted formal planning.

The relationship between risk taking and two measures of performance subjective index ($r=.27$) and objective index ($r=.21$) is high. Participation is strongly related to subjective rating ($r=.24$) while its relationship is negative with the objective index of performance ($r=.22$).

It is very essential to exercise caution in making interpretations from correlations especially when the data is cross sectional in nature. It has been demonstrated that conclusions about causality drawn on the basis of correlations can be erroneous (Lowin & Craig, 1968; Ferrie & Lim, 1969). Hence, interpretations have

been made only where there is corroboration with the findings of earlier researchers.

The relationship between management styles and the various measure of performance are indicated in Table 3.

It is clear from above that the entrepreneurial professional style dominates all the others on the objective index. It also ranks second on the objective index. On the objective index, the conservative mechanistic style and the traditional bureaucratic style do much better and rank higher than the quasi entrepreneurial style. The quasi entrepreneurial style is worst off on the objective index of performance and the degree of variability is very low. It is interesting to note that the degree of variability on all the three measures of performance is very low.

The professional style of management comes off very well on the index of relative performance. The high planning orientation and participation that go along with this style seems to give these branches a definite competitive edge over their rivals. The entrepreneurial professional style, the traditional bureaucratic style, the quasi entrepreneurial style and the conservative mechanistic style follow in that order on the index of relative performance.

The professional management style dominates all the rest, on the subjective index of performance. It is closely followed by the entrepreneurial professional style. The quasi entrepreneurial and traditional bureaucratic styles follow in that order with the conservative mechanistic style worst off on the subjective index. It follows from the above discussion that the entrepreneurial professional and the professional management styles seem to be the better of the five styles when all the four indicators of performance are taken into account.

Conclusions

The findings discussed above do indicate that there is definitely a right and a wrong way to manage branches at least as far as performance is concerned, albiet, in the limited sense in which it has been conceived here. However, a large number of factors like

Table 3
 Management Styles and Branch Performance : Standardised Scores
 Sample : "Branches"

	N		Subjective Index	Branches Relative Index	Objective Index	Overall Index		
						High	Medium	Low
Professional Management Style	21	Mean	.19	.31	.18	11	5	5
		S.E. of Mean	.24	.17	.21			
Quasi Enterpreneurial Style	9	Mean	.00	-.20	-.57	3	3	3
		S.E. of Mean	.00	.11	.08			
Traditional Bureaucratic Style	21	Mean	-.01	-.19	-.07	4	5	12
		S.E. of Mean	.17	.18	.24			
Conservative Mechanistic Style	5	Mean	-1.22	-.50	-.01	—	2	3
		S.E. of Mean	.58	.37	.13			
Enterpreneurial Professional Style	6	Mean	.18	-.04	.57	3	2	1
		S.E. of Mean	.37	.51	.31			

*Eight branches could not be included in any of the five clusters (i.e. Styles) since their score on the five dimensions were unique.

properties of the external environment do influence the performance of a branch and management style happens to be one of the important factors.

The professional management style and the entrepreneurial professional style seem to be more effective than the other styles in case of the sample of branches studied here. It is quite likely that different management styles might be equally effective under different circumstances (Khandwalla, 1977). Managers are increasingly being called upon to function in a dynamic and changing environment. There is therefore a need for them to have flexibility and adopt a style which is suited to the exigencies of the situation.

The significance of branch managers having a consciously worked out and explicitly formulated managerial strategy cannot be over emphasized. The development of a management style requires that branch managers have to go through an intellectual exercise when they would be required to examine their own values, premises and behavioural patterns. The development of such a management style would provide guidelines to the branch managers and help weaknesses. This would also obviate the need for branch managers

to respond to the daily changes in the environment like a Chameleon.

The task of developing managerial orientations which are in tune with the demands of the environment is the task of training and management development departments. A differential approach to training which takes into account the demands of the environment is an essential requirement, for the Banking Industry which faces a very diverse environment by virtue of its geographical spread.

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APPENDIX

The scales used for measuring the variables are as follows :

Planning : The following scales have been used to measure the planning and technocratic orientation :

- | | | |
|---|---------------|---|
| 1. The allocation of work in this branch involves ;
Matching availability of staff with requirements
of work only on a day to day basis. | 1 2 3 4 5 6 7 | Advance planning of the work allocation
schedule |
| 2. The work in this branch progress from week to week
according to work schedule drawn up in advance. | 1 2 3 4 5 6 7 | We generally avoid working on the basis of
plans and schedules and prefer to respond to
difficulties as and when they arise. |
| 3. In our branch
We normally prepare at the beginning of the month
schedule of visits to be made to our depositors
and borrowers. | 1 2 3 4 5 6 7 | We do not normally prepare schedules at the
beginning of the month and prefer to respond
to difficulties as and when they arises. |
| 4. In evaluating proposals for financing small scale industry's long term finance and working capital requirements
We depend almost wholly on the technical soundness
of the project, breakeven point analysis, evaluation
of the borrower's marketing strategy and generally
the projects financial viability. | 1 2 3 4 5 6 7 | We depend almost wholly on the borrower's
reputation in the community and the informal
enquiries we make about his credit worthiness. |

T The scores on items (2), (3) and (4) are reversed. The score on planning varies from a minimum of 4 to a maximum of 28. A high score indicates a high and a low score, low planning orientation,

Risk Taking : The following scales measure the risk taking orientation of the branch management.

- | | | |
|--|---------------|---|
| 1. While making advances to parties :
We prefer to rely on precedents and past practices
to keep risks as low as possible. | 1 2 3 4 5 6 7 | We prefer to disregard past practices in order
to go after new business. |
| 2. With regard to competitors in our area of operations, such as branches of other banks, post offices, etc.
We strongly prefer to avoid competing with them for
business | 1 2 3 4 5 6 7 | We strongly prefer to compete with them for
business. |
| 3. It is far better to seek out potential customers and
actively canvass new business—that way we get
more growth | 1 2 3 4 5 6 7 | It is far better to let the customers take the
first initiative in seeking out our Branch—
that way our risks are lower |
| 4. The publicity material for advertising the various schemes and services offered by the branch.
Is generally distributed only to customers who
visit us at the branch premises | 1 2 3 4 5 6 7 | Is generally distributed in schools, market
places and other important community
centres |

5. In our branch

We generally do not give credit for outstation cheques until we have received the payment advise from the paying branches.

1 2 3 4 5 6 7

We give credit for outstation cheques without waiting for the payment advise in the case of valued customers.

The score on item (3) is reversed. The score on risk taking varies from a minimum of 5 to a maximum of 35. A high score implies high risk taking and a low score, low risk taking.

Bureaucratisation : The following scales have been used to measure the bureaucratisation dimension.

1. In our branch

There is a strong emphasis on strictly following the formally laid down rules and procedures.

1 2 3 4 5 6 7

Getting targets and tasks accomplished even if formal procedures need to be disregarded.

2. In our branch

The clerical employees tend to resolve their work-related problems on their own

1 2 3 4 5 6 7

Go with their disputes to a common superior for resolving them.

3. Large amount of paper work and time-consuming procedures prescribed by Head Office for use in the branch adversely affect our effectiveness

Very true

1 2 3 4 5 6 7

Not true at all

The score on item 2 is reversed. The score on bureaucratisation varies from a minimum of 3 to a maximum of 21. A high score on bureaucratisation implies a mechanistic style and a low score an organic style

Coercion : The following scales measures the coercive orientation :

1. The Branch Manager's philosophy in dealing with the employees at our branch is "If you cannot make them think as you do make them do as you think" i.e., use force when persuasion fails.

Not at all characteristic of the Branch Manager

1 2 3 4 5 6 7

Very characteristic of the Branch Manager.

2. The Branch Manager believes very strongly in arriving at a mutually satisfactory agreement with the employees of the branch through persuasion and discussion. He never issues orders without due consultation with the employees.

1 2 3 4 5 6 7

Is a strick disciplinarian and uses fully his formal powers to ensure that his orders are obeyed. Does not ordinarily consult employees

3. In dealing with the representatives of employees' union at the branch

The Branch Manager believes in making friendly accommodation with them

1 2 3 4 5 6 7

The Branch Manager believes in being very tough and Strict with them.

The scores on coercion varies from a minimum of 3 to a maximum of 21. A high score indicates a coercive orientation and a low score, non-coercive orientation.

Participation : The following scales measure the degree of participation :

1. Please indicate the extent to which each of the following is used or done at your branch :

(a) The Branch Manager consults supervisory staff in framing annual budgets

Not done at all

1 2 3 4 5 6 7

Done as a matter of course

(b) The participation at the committee meetings in the branch show :

Great deal of enthusiasm

1 2 3 4 5 6 7

No enthusiasm at all

The score on item 1(a) is reversed. The score on participation varies from a minimum of 2 to a maximum of 14. A high score on participation implies a participative approach and a low score a non-participative approach to decision-making.

Performance Variables

Objective Index : The performance ratio is the objective measure of performance. It is the ratio of targets achieved to targets budgeted.

Relative Index : The scales used to measure relative Index are :

1. In relation to branches of other banks in the local area, (A) how rapid is your growth of business? (B) how profitable are your operations.

(a) Our growth rate is very much lower than that of other banks in the area	1 2 3 4 5 6 7	Our growth rate is very much lower than that of other banks in the area
(b) Our profitability is very much higher than that of other banks in the area	1 2 3 4 5 6 7	Our profitability is very much lower than that of other banks in the area

The score of item (b) is reversed. The score on relative performance varies from 1 to 14. A high score implies high performance and a low score low performance on this dimension.

Subjective Index : The scales for a measuring subjective index are as follows :

1. On the basis of your experience and information, how well does your branch do in comparison with other branches of your bank of comparable size, location and potential of the area served on each of the following :

(a) Achieving targeted levels of business Branch's performance relatively poor	1 2 3 4 5 6 7	High, well above average
(b) Efficiency, i.e. control over costs Branch's performance relatively poor	1 2 3 4 5 6 7	High, well above average
(c) Customer satisfaction Branch's performance relatively poor	1 2 3 4 5 6 7	High, well above average
(d) Staff relations Branch's performance relatively poor	1 2 3 4 5 6 7	High, well above average
(e) Development of business Branch's performance relatively poor	1 2 3 4 5 5 7	High, well above average
(f) Maintenance and upkeep of promises Branch's performance relatively poor	1 2 3 4 5 6 7	High, well above average

The score on subjective index ranges from 6 to 42. A high score implies high performance and a low score, low performance.

Overall Performance Index

The three measures of performance discussed earlier were aggregated into a performance index. The manner in which this is done is as follows :

All the scores on the three performance measures are converted into standardised scores. In each of the three measures the following thumb rule is applied to form the index since it was found that all the three measures of performance conform to a normal distribution :

1. Standard scores whose values were less than $-.43$ were given a score of one.
2. Branches with standardised scores in the range of $-.43$ to $+.43$ were given a score of 2.
3. Branches with standardised scores greater than $+.43$ were given a value of 3.

For each branch, the aggregate of these converted scores represent the index of performance. It was found that the index of performance conformed closely to a normal distribution curve.

Performance in a Nationalised Bank

HRISHIKES BHATTACHARYYA

The paper emphasises that declining productivity is not entirely the fault of the employees, nor is it entirely the fault of external interferences; it lies squarely at the feet of management, for not taking the initiative to take remedial action. It is unfortunate that everybody understands that improving productivity depends upon better planning, streamlined procedures, better communication, development of human resources and improved decision making but few are willing to tackle the job. Productivity seems to be like weather, many people are talking about it but few are doing anything. It is time that some serious thoughts are given to it.

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Introduction

This paper is primarily aimed at the top management of Commercial Banks, researchers and those interested in the productivity of the banking industry in general. We have purposefully avoided sophisticated statistical analysis and presented a gist of our findings in a manner which is generally understandable.

As a prelude to the study of organizational climate of a nationalized bank, a study of contemporary literature on the subject was made, which is, however, not reported in this summary presentation for obvious reasons. There are multiple and often conflicting theories whose relevance in India, particularly in banking industry is doubtful. The work, therefore, proceeded with a simple postulate that organizational climate established by the top management influences the perception of organization by the employees and consequently the productivity. From here a basic hypothesis was made that *if employees have a positive feeling towards the organization, productivity will increase*. Later, six sub-hypotheses were made to check whether there really exists a positive feeling towards the organization.

The study was concentrated in one nationalized bank only which is, however, fairly representative of all the banks which were nationalized in 1969.

Time and other administrative constraints did not permit us to conduct the survey covering all emplo-

yees of the organization. A sample, however, could have solved the problem of volume but as no such survey had previously been undertaken in the Bank and only a modest endeavour was made by N.I.B.M. in one other Bank, it was felt that we do not have much *a priori* knowledge to fix population parameters with confidence for scientifically drawing a sample. Moreover, a quick calculation had shown that nearly 85% of the branch managers have come from ranks only. It was postulated that the intensity of the effect of organizational variables on their attitudes remained same or increased as they moved up the ladder. Taken together, they represent the entire population of employees in the Bank. It was also felt that since branch managers are responsible for productivity and represent the Bank at the operational level their actions at the micro level fall within the general framework of organizational actions at the macro level, and their perceptions of organization get permeated to other employees at the branch through their actions, formal and informal behaviour, leading to the general perception of the organization by all employees. From these postulates all Branch Managers of the Bank had been taking as population units.

Methodology

The study did not proceed with any preconceived idea of organizational variables affecting performance. At the initial stage any reference to the available research work done in other organizations on the same line was carefully avoided lest they influence the researcher. This was done because most of the research work published so far and available to the researcher were done on organizations of different internal and external environment which are mostly not found in India. In many cases the culture of the society was different from ours, hence interpretation of results obtained could be substantially different in our cultural setting. Although the researcher tried his best to proceed with a clean slate he does not claim absolute perfection because he is also subject to the influence of his education, experience, external and internal environment.

As it was decided to proceed from the scratch and no *a priori* knowledge was presumed, the researcher held informal talks with managers of branches in

Calcutta, other parts of West Bengal, Tripura and Bombay. A friendly informal rapport was built-up with the Managers. Most of the informal talks were held in branch environment, at the Staff College of the Bank and at Divisional Offices. Although the Managers were drawn to the talks about their working situation vis-a-vis the organization no leading questions were asked. The Managers were not given any idea about the purpose of the talk. The talks were unstructured and as it was informal no time limit was prescribed. In some cases talks were held with groups of Managers as and when the researcher met them in groups. Notes of the discussion were not taken during the talks but almost immediately afterwards. Statements made by them about various aspects of the organization were noted from the immediate memory of the researcher. No endeavour was made to interpret these statements at this stage. Altogether, statements of 42 Managers were taken.

These statements were then translated into English language without affecting, as far as possible, the inner connotation. At this stage reference to various questionnaires used by other researchers in this field, particularly in India, was made and wherever some statements were coming closer to already used and published questionnaire, the language was modified to conform to published usages but at the same time care was taken to see that the original message was not lost.

The Questionnaire

It was found that some statements were getting repeated and a general pattern was emerging. A frequency table was accordingly drawn up and statements showing frequency of ten and more were tabulated for drawing up the questionnaire. Accordingly, thirty-six statements were finally selected. At this stage some of the positive form of the statements were changed to a negative form to ensure built-in checks.

Deciding Sub-Hypothesis

From an analysis of various statements given by the Managers the following sub-hypothesis were made for final testing with the population of Managers :

1. This organization is not performance oriented.

2. This organization is Exploitive Authoritative.
3. This organization is bureaucratic.
4. Delegation of authority at branch level is good.
5. Team spirit at branch level and between Branch and Divisional Office is good.
6. Training system of the Bank is not purpose oriented.

No further sub-division of organizational dimensions have been made at this stage.

A seventh parameter was also added to know the overall attitude of managers towards their present employment. A six point measurement scale was laid at the bottom of the final questionnaire while in all other cases a three point scale was used. The questionnaire so developed was put to test for their clarity etc. to a group of twenty-four managers who came to the staff college for training. Suitable amendments in the language of the statements were then made with due regard to the opinions expressed by the group and the results obtained. A questionnaire was then finally drawn up and printed. It was sent to Managers under cover of a personal letter of the Executive Director. The respondents were requested not to sign anywhere in the questionnaire to facilitate quick response. The concluding paragraphs of the covering letter of the Executive Director are quoted below :

"It may be mentioned that your response to the questionnaire will be treated as strictly confidential. As a matter of fact you need not even sign the completed questionnaire. Under the circumstances it should be possible for you to express your views freely and frankly. Your active cooperation in the matter will make the study fruitful and objective.

I would request you to send the completed Questionnaire within a week from now."

At the time when the questionnaire was finally served, the Bank had 1030 branches in India but the questionnaire could be served to 815 branches. Some branches were left out as the researcher could not obtain the latest personnel position of these branches. Questionnaires sent to 126 metropolitan branches were

coded for purpose of separate study and comparison with the aggregate results.

Results

Response to the questionnaire was very satisfactory. As on the date the final tally was made 680 responses were received which is about 83%.

Number of responses seems to be satisfactory to test our hypotheses. Result of the survey under each such hypothesis is given below—the score of metropolitan branches is given in bracket :

A			
HYPOTHESES		% OF SCORE	
(1)	This organization is not performance oriented	63	(60)
(2)	This organization is Exploitive Authoritative	72	(70)
(3)	This organization is bureaucratic	73	(75)
(4)	Delegation of authority at the branch level is good	52	(53)
(5)	Team spirit at the branch level and between branch and Divisional Office is good	72	(71)
(6)	Training system in the Bank is not purpose oriented	58	(50)
B Managers' attitude towards their present employment		77	(77) Positive

Table 1

It may be seen from the table given above that scores for metropolitan branches do not differ appreciably from the score of the total population. Variation is within the range of 1 to 3 percentage points excepting the hypothesis No. 6 where the variance is 8 percentage points. Employment attitude score is exactly the same in both the cases.

Discussion

The study is diagnostic in nature. No solution is suggested at this stage but some interpretation of the results seems to be in order.

Our main hypothesis was that if managers have a positive feeling towards the organization productivity will increase. Although, at this stage no correlation matrices have been drawn it is obvious that continuous fall in the performance of the Bank as a whole is the result of the highly negative feeling of branch managers on whose ultimate actions the growth of the Bank is dependent.

Performance Orientation

The big majority of the managers feel that the organization is not performance oriented. Performance orientation is negatively affected mainly if there is no—

- (i) realistic performance appraisal;
- (ii) recognition and rewards for achievement ;
- (iii) flexible organizational style ;
- (iv) self-development opportunity etc.

Responses to some of the individual statements given below will highlight the perception of managers in this respect :

Statements	% of Score in favour
Pull & push are more important in our Bank than competence and efficiency in job	61
Good work is really recognised here	46
Groupism is prevalent in our Bank and it is important to be in right group otherwise you are doomed	72
There are no 'favourites' in our Bank. Everyone is treated alike and has the same opportunity to go ahead	26
Management believes in rewards and encouragement than using threat	36
In our Bank those who work less are happy	71

Table 2

From the score of the above statements and the score under hypothesis No.1 it appears that the organization is not performance oriented as perceived by the managers. The obvious conclusion that emanates from this observation is that when managers perceive their organization this way, impoverished style of leadership emerges where managers are no longer interested in productivity but let thing go the way it likes.

Exploitive Authoritative & Bureaucratic Leadership

The high score in support of hypothesis No. 2 and 3 support the view point. The two hypotheses are supportive and complementary to hypothesis No. 1. Highly exploitive authoritative organization supported by highly bureaucratic system of management as perceived by the managers make the latter feel like a cog in a big wheel. Managers feel themselves reduced to the level of Head Clerk from whom all initiative is taken away. Bureaucracy focuses on activity and not on results. The managers have been trapped in activity.

When routinised activities are placed high and rewards and punishments are dependent on it, managers no longer remain managers but are forced to be immersed in the heaps of papers in his desk. He is a much happier person if he is able to send statements within the dead line than when he brings the branch to profit, because for the violation of the former edict, he is liable to punishment while attainment of the latter would not give him any reward. The present day Managers' working situation may be compared with the Chief Medical Officer of Railways who has long forgotten what medicine is and for years has not been able to visit an operation theatre because his desk work is always too much for him. Scores obtained in the following few statements will indicate this dismal state of affairs :

It may be remarked that Pareto's rule by which 80% of employees' time is usually spent on a few key activities that account for major results of the organization is inapplicable in the Bank, where it is other way round. While the highly authoritarian leadership demands a high level of performance mismatched with the individual goals of the managers the bureaucracy allows the objective to be drifted away and provide for

Statement	% of Score in favour
It is necessary in our Bank to be polite under all circumstances to stay out of trouble	81
The organization does not concern itself with the personal problems of employees	70
I am often overworked	70
Excessive rules, administrative details and red-tape make it difficult for implementation of original ideas	70
Head Office or Divisional Office is only concerned with completion of tasks and attainments of targets	80
If you make a mistake you get punished	70
Decision on a proposal is delayed because too many justifications and queries are made	79

Table 3

excuses well within the bureaucratic framework. The two taken together brings forth a negative effect on ultimate performance. The prime concern of the managers of the Bank at present is to avoid punishment rather than the growth of the Bank. It may be pertinent to mention here that the researcher's note book is full of impressions gathered from a number of managers who would be happy if the Bank goes down : Although this particular attitude has not been verified from a detailed study of a much larger sample it would not be too much stretching of imagination to say that this masochistic attitude is developing at all operating levels. This is the culminating result of the "Win-lose" game which is being played in the organization for long where ultimately, both parties lose to the detriment of organizational growth.

Organizations Within Organization

In this Bank two institutions are operating with their distinct goals. The psychological distance between these two institutions is increasing at a geometric rate. The two institutions are the institution of managers and the institution of top management. The goal of the

former is to avoid punishment and maintain an impoverished style while the goal of the latter is to "get the job done" in an authoritarian but bureaucratic way. None of these goals come nearer to the real organizational goal of maintaining sustained growth. These are in fact, sub-goals which get predominance over organizational goal. As a result, activity increased while productivity falls.

A third institution—the institution of Divisional Managers is half-way in the camp of managers with more or less same objectives. These two institutions along with the institution of workmen staff have formed a dovecoat of their own with a highly resistant shell around it to protect themselves against the penetration of top management.

Inside this dovecoat the team spirit is very high as will be evidenced from the high score obtained under this dimension (72%). Scores for the following individual statements will highlight the conclusion :—

Statement	% of score in favour
A friendly atmosphere prevails among the people in the branch	85
I get all supports from members of staff for development of branch's business	77
A friendly atmosphere prevails between controlling office and the branch	67
This branch is a good place to work	74

Table 4

This high score on "Team Spirit" may apparently appear to be paradoxical in an organization which is not performance oriented. But in view of the foregoing analyses this "Team Spirit" has to be taken with a pinch of salt. This is the strategic manifestation of organization within organization where one is always trying to protect oneself from the other. A Question may arise as, at what and whose cost this "Team Spirit" is maintained. Is it a real team spirit which increases

productivity or it is the "happiness index" maintained at so high a level by sheer "permissiveness" at the operational levels? The high scores favouring hypotheses No. 2 and 3 which have forced the front line managers to form their own dovecoat point to the latter conclusion.

Delegation

It will be observed from Table-1 that total score under this head is divided almost equally between those who agree with the hypothesis and those who disagree. While it is a pointer to the fact that during this decade more* authority has been delegated to manage the phenomenal expansion of the Bank, the other half of the score points out that there is much more to be done to match the desired level. Howsoever extent the authority has been delegated, it is not adding to the productivity to any substantial degree because of the perception of the managers that "if you make a mistake you get punished". One of the criteria of effective delegation is that the delegates must be allowed to commit mistakes and learn from them. If instead, they are punished the authority so delegated will never be exercised. The existing bureaucracy also frustrates any initiative and as a result, the game of 'passing the buck' (68%) is played with vengeance. While delegating authority it is often forgotten that mistakes are the cheapest form of learning if these are handled objectively without endangering the interest of the Bank and the managers' own position. In his discussion with the managers the researcher has found that they are apathetic towards making advances, particularly to priority sectors, where apparent risks are high. He has also found out certain instances where discretionary powers vested in the managers have never been exercised for more than two years and ironically enough, they take pride in not exercising their powers in one pretext or other. "Making advances means inviting additional troubles". "If you make advances you don't sleep in the night; don't make advances and have a good sleep in the night"; "Nobody will save you if your advances go bad"; "If you strongly recommend a credit proposal or press for its sanction, they say you are making money";—these are some of the statements made by the managers during the course of informal talks the researcher had with them. These statements

reveal that the purpose of delegation is getting defeated as the managers are being alienated more and more from the mainstream of organizational objectives. It has also occurred to the mind of the researcher as he discussed the matter with the managers that powers have been delegated in many cases to the hands of persons who are yet to become competent to exercise them. This phenomenon coupled with the negative motivation of punishment have given rise to fear psychosis which is spoiling the positive effect of delegation. This fear can be allayed partly by proper training to which dimension we now turn to see how the managers feel about training.

Training

The hypothesis under this head was that "Training system in the Bank is not purpose oriented. General score favouring the hypothesis is 58. In case of metropolitan branches it has come down by eight percentage points which shows that impact of training amongst metropolitan branch managers is better as compared to other branches. It will be better if responses to the three statements relating to training and one statement relating to placement policy are considered :

Table 5

Statement	% of score in favour
In our Bank we are systematically exposed to training programme for further development	53
We do not have much scope to make good use of knowledge acquired in a training programme	59
Our desire to be trained in a particular area is taken into consideration when we are sent for training.	36
Our placement to a post is decided on the basis of our knowledge & skills for a job	35

It will be observed that training necessity of an individual manager is not fulfilled in majority of the cases and because of wrong placement policy, know-

ledge acquired in a training programme cannot be applied fruitfully. As the impact of training is not felt by majority of the managers it remains a wasteful exercise to a considerable degree.

Attitude Towards Present Employment

The employment attitude score of the managers is highly positive (77). This may once again appear to be paradoxical because it was found to be negatively correlated to productivity. Moreover, the score was obtained at a time when the growth parameters of the Bank were substantially on the decline. It may be that the managers, having already spent some years with the Bank do not have many alternatives elsewhere at the same pay and hence, have resented themselves in favour of his present job situation in an impoverished way. This compulsion to stay if prevalent for a long time (as is common in India) gives rise to a system where it becomes a way of life. The organization gets a tacit obedience to its goals which, however, are never adopted. Bureaucracy helps maintain this situation. People start "liking their present job" every time they compare their own with the alternatives available. This is a comparative love and not love by merit. There is no identification with the organization.

If the job attitude score of the managers has been negative the hypothesis about high team spirit at branch level would not have been proved. In the "dovecoat" a friendly atmosphere prevails. People live in permis-

siveness and have adapted themselves to this atmosphere. They "love" each other and as this is possible because of their present job they love the job as well! Compulsion has brought them closer but moved them away from the organization.

Concluding Remarks

As mentioned earlier, this was primarily a diagnostic or fact finding study. This survey had thrown up valuable information for taking remedial steps. Incidentally, it had also generated an expectation in the minds of the managers that something positive would be done. The overwhelming response to the questionnaire and frank opinion (tested for validity) expressed by the managers, proved this fact. For the first time, this survey provided a safe opportunity to the managers to "get what is bothering them, off their chest". Problem with this kind of study is that if no remedial steps are taken after the study, a feeling of frustration engulfs the respondents. Any researcher in this field should guard against this. If it is felt that the management would not take any remedial measures, he should not undertake the research at all.

The study has indicated certain areas where improvement is necessary. The magnitude of the problem is great and it will not be solved overnight. It requires sustained and serious efforts and full commitments by the top management. The process should be continuous.

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Successful Entrepreneurship— A Study

DR. T. SUBBI REDDY
MRS. N. SOBHA REDDY

In this paper the authors make an attempt to identify some socio-economic factors associated with the success of small entrepreneurs. The study analyses the entrepreneurial performance in the light of the factors like age, education, family background, major portion of life spent by the respondents, size of total investment, type of ownership and previous experience of the respondents.

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Many attempts have been to identify the various characteristics associated with entrepreneurial success in recent times. Some of them have described entrepreneurial characteristics on the basis of empirical evidence, others have used planned observation, and so on. Entrepreneurial characteristics associated with the success level, however, do not seem to be universal. Cultural and other local factors appear to be important. In the present study an attempt is made to gather and analyse some data on an empirical basis in order to find out the most commonly responsible factors associated with success in small entrepreneurship as referred to by Gokaran (1973), Hornaday and Abond (1971), Subramaniam (1971), Choudary (1980) and Choudary and Reddy (1981). For the purpose of study small industrial units established in Kurnool district, recognised as an industrially backward area, are selected.

The sole objective of the study is :

—to find out the extent to which success in small entrepreneurship is associated with the following factors :

- (1) Age
- (2) Education
- (3) Family background
- (4) Major portion of life spent by the respondents
- (5) Size of total investment
- (6) Type of ownership and
- (7) Previous experience.

Classification of Success

Success, in this context is defined as the success of the enterprise, high rate of net income/profit earned by the unit and the best utilisation of the installed capacity. For the purpose of this study, the success of entrepreneurs is categorised into four types—low success, moderately low success, moderately high success and high success—depending upon the net income or profit earned by each unit or upon the average utilised capacity of the machinery.

Low Success : An entrepreneur who earns a net profit/income of less than Rs. 500 per month without machinery or utilises less than 25 per cent installed capacity of the machinery per month or on an average can be considered unsuccessful, is classified as low success group and referred to as 'L' in the tables.

Moderately Low Success : An entrepreneur without machinery who earns a net profit/income of Rs. 500 or above but below Rs. 1000 per month or who utilises 25 per cent or more but less than 50 per cent installed capacity of the machinery per month, or on an average can be considered as not so successful is classified under this group and referred to as 'ML' in the tables.

Moderately High Success : An entrepreneur without machinery who earns a net profit/income of Rs. 1000 or above but less than Rs. 1500 per month, or who utilises 50 per cent or more but less than 75 per cent installed capacity of the machinery per month, or on an average can be considered as moderately successful entrepreneurs is classified under this group and referred to as 'MH' in the tables.

High Success : An entrepreneur without machinery who earns a net profit/income of Rs. 1500 or more per month, or who utilises 75 per cent or more of the installed capacity of machinery per month, or on an average can be considered as highly successful and is classified under this group and is referred to as 'H' in the tables.

Sources of Data

The data was collected from 105 small industrial units registered with the District Industries Centre,

Kurnool. The total number of industries in the small sector are categorised as 1. chemical 2. mineral 3. metal 4. forest 5. agriculture 6. general engineering and 7. miscellaneous based on their industrial activity. From each industry 15 units were selected based on the random sampling technique. The desired information was gathered through personal interviews with the entrepreneurs and with the help of a structured questionnaire.

Analysis of Data

The analysis was made on the basis of the study of the total population by using percentages. The findings based on the information received have been further verified by applying the non-parametric statistical method called chi-square.

Age and Success Level

The number and percentage of respondents in different age groups and the computation of chi-square in terms of their success levels are shown in table 1.

The data shows that 20 per cent and 45 per cent of the respondents in below 30 years age group are associated with low success and moderately low success respectively. 40 per cent of the respondents with above 50 years age group are associated with moderately high success and high success. 51.52 per cent of the 30-40 years age group, 45.46 per cent of the 40-50 years age group respondents are associated with high success. Here it is clear that younger age group i.e., below 30 years age group respondents are associated with low success and higher age groups respondents with high success.

With 9 Degrees of Freedom (DF) a chi-square of 16.919 at 5 per cent level and 21.666 at one per cent level is required for significance. At 5 per cent level the calculated value is greater than the tabulated value. So there is a convincing reason to believe that there is relationship between age group and success level. However the calculated value of chi-square is less than the tabulated level at one per cent level of significance, where the null hypothesis is accepted i.e., there is no relationship between age group and success level.

Table 1
Number and Percentage of Respondents in Different Age Groups and Computation of Chi-Square for the Data in Terms of their Success Level

Success Level	Age Group				Total
	30 years & below	Between 30 & 40 years	Between 40 & 50 years	Above 50 years	
L	8 (4.95)** (20.00)*	4 (4.09) (12.12)	— (2.72)	1 (1.24) (10.00)	13 (12.38)
ML	18 (11.81) (45.00)	5 (9.74) (15.15)	7 (6.50) (31.82)	1 (2.95) (10.00)	31 (29.52)
MH	2 (6.86) (5.00)	7 (5.66) (21.21)	5 (3.77) (22.73)	4 (1.71) (40.00)	18 (17.14)
H	12 (16.38) (30.00)	17 (13.51) (51.52)	10 (9.01) (45.46)	4 (4.10) (40.00)	43 (40.95)
Total	40 (100.00)	33 (100.00)	22 (100.00)	10 (100.00)	105 (100.00)

Source : Field Survey.

Note : *Figures in parentheses are percentages to column totals.

**Figures in parentheses are the expected frequencies of the respective cells.

At 9 DF $X^2 = 20.948 >$ Table (X^2) value at 5 per cent level : 16.919

$X^2 = 20.948 <$ Table (X^2) value at 1 per cent level : 21.666

Education and Success Level

The data relating to the number and percentage of respondents with different levels of education and computation of chi-square in terms of their success level is given in table 2.

The table depicts that 20.83 per cent of the primary education group is in low success. 42.86 per cent of the college education group is associated with moderately low success. 23.26 per cent of the secondary education group is in moderately high success. 41.86 per cent of the secondary education group and 70 per cent of the technical education group are associated with high success. Here it is noticed that secondary education and technical education groups are in a sizeable number in moderately high success and high success levels respectively.

It is also proved by the chi-square analysis as the calculated chi-square value is less than the table value both at 5 per cent and one per cent level. The results

obtained earlier in this connection are accepted. That means there is no association between the levels of education and success.

Family Background and Success level

The data relating to the number and percentage of respondents' family background and the computation of the chi-square for the data in terms of their success level are shown in table 3.

The agriculture and business background groups constituting 13.89 and 13.46 per cent respectively are associated with low success. 34.62 per cent of the business background group and 25 per cent of the agriculture and service background groups are associated with moderately low success. 40 per cent of the industry background group and 25 per cent of the service background group were associated with moderately high success. The respondents representing 44.44, 41.67, 40.00 and 38.46 per cent of the agriculture, service, industry and business background groups

Table 2
Number and Percentage of respondents with different levels of Education and Computation of Chi-square in Terms of their success level

Success Level	Level of Education				Total
	Primary	Secondary	College	Technical	
L	5 (2.97)** (20.83)*	5 (5.32) (11.63)	3 (3.47) (10.71)	— (1.24)	13 (12.38)
ML	7 (7.09) (29.17)	10 (12.69) (23.26)	12 (8.27) (42.86)	2 (2.95) (20.00)	31 (29.52)
MH	4 (4.11) (16.67)	10 (7.37) (23.26)	3 (4.80) (10.71)	1 (1.71) (10.00)	18 (17.14)
H	8 (9.83) (33.33)	18 (17.61) (41.86)	10 (11.47) (35.71)	7 (4.10) (70.00)	43 (40.95)
Total	24 (100.00)	43 (100.00)	28 (100.00)	10 (100.00)	105 (100.00)

Source : Field Survey.

Note : *Figures in parentheses are the percentages to column totals.

**Figures in parentheses are the expected frequencies of the respective cells.

At 9 DF $X^2 = 9.770 < \text{Table } (X^2) \text{ value at } 5\% \text{ level : } 16.919$

and at 1% level : 21.666

Table 3

Number and percentage of respondents family background and Computation of Chi-square for the data in terms of their success level

Success Level	Family Background				Total
	Agriculture	Business	Industry	Service	
L	5 (4.46)** (13.89)*	7 (6.44) (13.46)	— (0.62)	1 (1.49) (8.33)	13 (12.38)
ML	9 (10.63) (25.00)	18 (15.35) (34.62)	1 (1.48) (20.00)	3 (3.54) (25.00)	31 (29.52)
MH	6 (6.17) (16.67)	7 (8.91) (13.46)	2 (0.86) (40.00)	3 (2.06) (25.00)	18 (17.14)
H	16 (14.74) (44.44)	20 (21.30) (38.46)	2 (2.05) (40.00)	5 (4.91) (41.67)	43 (40.95)
Total	36 (100.00)	52 (100.00)	5 (100.00)	12 (100.00)	105 (100.00)

Source : Field Survey.

Note : *Figures in parentheses are percentages to column totals.

**Figures in parentheses are the expected frequencies of the respective cells.

At 9 DF $X^2 = 4.385 < \text{Table } (X^2) \text{ value at } 5\% \text{ level : } 16.919$

and at 1% level : 21.666

respectively are associated with high success. It shows all the four groups are on the same footing.

As the chi-square value is less than the table value at 5 per cent and one per cent level, it is accepted that the family background of the respondents had no association with their success levels.

Major Portion of Life Spent by the Respondents and their Success Level.

The respondents were divided into three groups on the basis of their major portion of life spent in village or town or city. The number and percentage of these groups and the computation of chi-square are shown in table 4.

20 per cent of the village background group are in low success, 32.91 per cent of the town background group are in moderately low success whereas none of the city background group is either in low success or in moderately low success level. The city background group constituting 20 per cent are in moderately high success level. 80 per cent of the city, 42.86 per cent of the village and 37.97 per cent of the town background groups are associated with high success. Thus the table reveals that there is no association between the major portion of life spent by the respondents and their success level as the major number of respondents in all the three groups are in high success level.

It is also evident by analysing with the chi-square test as the chi-square is less than the table values at 5 per cent and one per cent level, no relationship between the major portion of life spent by the respondents and success level is to be accepted.

Size of Total Investment and Success Level

Number and percentage of the respondents on the basis of the size of total investment and computation of chi-square for the data in terms of their success level are shown in table 5.

Data shows that below Rs. 1 lakh investment group is associated with low success and moderately high success constituting 20.45 per cent in each case. 47.73 per cent of the below Rs. 1 lakh investment group is

associated with moderately low success. The Rs. 10 lakh and above, 5 to 10 lakh and 1 to 5 lakh groups are associated with high success constituting 83.33, 75.00 and 55.81 per cent respectively. Here it is clear that the higher investment groups are in high success.

As the chi-square value is greater than the table value at 5 per cent and one per cent level, it is proved that the level of success is associated with size of total investment.

Type of Ownership and Success Level

Number and percentage of respondents on the basis of type of ownership and computation of chi-square for the data in terms of their success level are shown in table 6.

The table 6 indicates that 16.39 and 42.62 per cent of the proprietary concerns are in low and in moderately low success levels respectively. 19.05 per cent of the partnership concerns are in moderately high success level. Cent per cent of the company Ltd., concerns and 61.90 per cent of the partnership concerns are in high success level. From the above analysis it is clear that the partnership and company Ltd. concerns are associated with high success whereas proprietary concerns are associated with low success.

It is also proved that calculated chi-square value is greater than the table value at 5 per cent and one per cent level.

Previous Experience and Success Level

In terms of previous experience of the respondents their success levels are analysed. Number and percentage of respondents on the basis of previous experience and computation of chi-square in terms of their success level are shown in table 7.

The data depicts that 25 per cent of the service background respondents are in low success, 50 per cent of the respondents have previous experience in other than business, industry and service groups are in moderately low success and 32 per cent of the respondents with experience in business are in moderately high success. Those who have previous experience in

Table 4
Number and percentage of Respondents Major Portion of Life Spent and Computation of Chi-Square for the
Data in terms of their success level

Success Level	Major portion of life spent			
	Village	Town	City	Total
L	4 (2.60)** (19.05)*	9 (9.78) (11.39)	— (0.62)	13 (12.38)
ML	5 (6.20) (23.81)	26 (23.32) (32.91)	— (1.48)	31 (29.52)
MH	3 (3.60) (14.29)	14 (13.54) (17.72)	1 (0.86) (20.00)	18 (17.14)
H	9 (8.60) (42.86)	30 (32.35) (37.97)	4 (2.5) (80.00)	43 (40.95)
Total	21 (100.00)	79 (100.00)	5 (100.00)	105 (100.00)

Source : Field Survey.

Note : *Figures in parentheses are the percentages to column totals.

**Figures in parentheses are the expected frequencies of the respective cells.

At 6 DF $X^2 = 5.800 < \text{Table } (X^2) \text{ value at } 5\% \text{ level : } 12.592$

and at 1% level : 16.812

Table 5
Number and percentage of Respondents Size of total Investment and Computation of Chi-Square for
the Data in terms of their success level

Success Level	Size of total investment				Total
	Upto Rs. 1 lakh	Rs. 1 to 5 lakh	Rs. 5 to 10 lakh	Rs. 10 lakh & above	
L	9 (5.45)** (20.45)*	3 (5.32) (6.98)	1 (1.49) (8.33)	— (0.74)	13 (12.38)
ML	21 (12.99) (47.73)	10 (12.69) (23.26)	— (3.54)	— (1.77)	31 (29.52)
MH	9 (7.54) (20.45)	6 (7.37) (13.95)	2 (2.06) (16.67)	1 (1.03) (16.67)	18 (17.14)
H	5 (18.01) (11.36)	24 (17.60) (55.81)	9 (4.91) (75.00)	5 (2.46) (83.33)	43 (40.95)
Total	44 (100.00)	43 (100.00)	12 (100.00)	6 (100.00)	105 (100.00)

Source : Field Survey.

Note : *Figures in parentheses are the percentages to column totals.

**Figures in parentheses are the expected frequencies of the respective cells.

At 9 DF $X^2 = 33.340 > \text{Table } (X^2) \text{ value at } 5\% \text{ level : } 16.919$

and at 1% level : 21.666

Table 6
Number and percentage of Respondents' Type of ownership and Computation of Chi-Square for the Data in terms of their success level

Success Level	Type of Ownership			
	Proprietary	Partnership	Company Ltd.	Total
L	10 (7.55)** (16.39)*	3 (5.20) (7.14)	— (0.25)	13 (12.38)
ML	26 (18.01) (42.62)	5 (12.40) (11.90)	— (0.59)	31 (29.52)
MH	10 (10.46) (16.39)	8 (7.20) (19.05)	— (0.34)	18 (17.14)
H	15 (24.98) (24.59)	26 (17.20) (16.90)	2 (0.82) (100.00)	43 (40.95)
Total	61 (100.00)	42 (100.00)	2 (100.00)	105 (100.00)

Source : Field Survey.

Note : *Figures in parentheses are the percentages to column totals.

**Figures in parentheses are the expected frequencies of the respective cells.

At 6 DF $X^2 = 21.163 >$ Table (X^2) value at 5% level : 12.592

and at 1% level : 16.812

Table 7
Number and percentage of Respondents Previous Experience and Computation of Chi-square for the Data in terms of their success level

Success Level	Previous experience					Total
	Business	Industry	Service	Others	No experience	
L	2 (3.09)† (8.00)*	4 (4.46) (11.11)	1 (0.50) (25.00)	— (0.74)	6 (4.21) (17.65)	13 (12.38)
ML	2 (7.38) (36.00)	9 (10.63) (25.00)	— (1.18)	3 (1.77) (50.00)	10 (10.04) (29.41)	31 (29.52)
MH	8 (4.29) (32.00)	7 (6.17) (19.44)	— (0.69)	1 (1.03) (16.67)	2 (5.83) (5.88)	18 (17.14)
H	6 (10.24) (24.00)	16 (14.74) (44.44)	3 (1.64) (75.00)	2 (2.46) (33.33)	16 (13.92) (47.06)	43 (40.95)
Total	25 (100.00)	36 (100.00)	4 (100.00)	6 (100.00)	34 (100.00)	105 (100.00)

Source : Field Survey.

Note : *Figures in parentheses are the percentages to column totals.

†Figures in parentheses are the expected frequencies of respective cells.

At 12 DF $X^2 = 14.989 <$ Table (X^2) value at 5% level ; 21.026

and at 1% level : 26.217

service group, no previous experience in any group and experience in industry group constituting 75.00, 47.06 and 44.44 per cent respectively are associated with high success. This shows that there is no association between the respondents previous experience and success level as no previous experience group is also in high success level.

This is also proved that with 12 DF the chi-square is less than the table value at 5 per cent and one per cent level indicating the acceptance of above analysis.

Conclusions

The respondents' education, family background, major portion of life spent and previous experience etc., have no significance or association in terms of their success level. The data did not support the view that the entrepreneurs having a higher level of education can only succeed in running their enterprises. The majority of the successful limits in our sample are owned by the entrepreneurs with formal education. The data also did not support the belief that the sons of the industrialists and businessmen are more successful in running their units. It was also found that the sons of the agriculturists and servicemen are more successful in running

their units. Likewise the entrepreneurs having previous experience and the entrepreneurs having no previous experience and the entrepreneurs who had spent major portion of life in village or town or city have no influence in terms of their success.

The respondents in higher age group are more successful than those in younger age group i.e., below 30 years in running their units. Many of the proprietary concerns are in low success as compared to partnership and company Ltd. concerns.

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	Service	Industry	Business	Total
11	(11.8)	(11.8)	(11.8)	(11.8)
12	(10.0)	(10.0)	(10.0)	(10.0)
13	(13.2)	(13.2)	(13.2)	(13.2)
14	(11.1)	(11.1)	(11.1)	(11.1)
15	(11.1)	(11.1)	(11.1)	(11.1)
16	(11.1)	(11.1)	(11.1)	(11.1)
17	(11.1)	(11.1)	(11.1)	(11.1)
18	(11.1)	(11.1)	(11.1)	(11.1)
19	(11.1)	(11.1)	(11.1)	(11.1)
20	(11.1)	(11.1)	(11.1)	(11.1)
21	(11.1)	(11.1)	(11.1)	(11.1)
22	(11.1)	(11.1)	(11.1)	(11.1)
23	(11.1)	(11.1)	(11.1)	(11.1)
24	(11.1)	(11.1)	(11.1)	(11.1)
25	(11.1)	(11.1)	(11.1)	(11.1)
26	(11.1)	(11.1)	(11.1)	(11.1)
27	(11.1)	(11.1)	(11.1)	(11.1)
28	(11.1)	(11.1)	(11.1)	(11.1)
29	(11.1)	(11.1)	(11.1)	(11.1)
30	(11.1)	(11.1)	(11.1)	(11.1)
31	(11.1)	(11.1)	(11.1)	(11.1)
32	(11.1)	(11.1)	(11.1)	(11.1)
33	(11.1)	(11.1)	(11.1)	(11.1)
34	(11.1)	(11.1)	(11.1)	(11.1)
35	(11.1)	(11.1)	(11.1)	(11.1)
36	(11.1)	(11.1)	(11.1)	(11.1)
37	(11.1)	(11.1)	(11.1)	(11.1)
38	(11.1)	(11.1)	(11.1)	(11.1)
39	(11.1)	(11.1)	(11.1)	(11.1)
40	(11.1)	(11.1)	(11.1)	(11.1)
41	(11.1)	(11.1)	(11.1)	(11.1)
42	(11.1)	(11.1)	(11.1)	(11.1)
43	(11.1)	(11.1)	(11.1)	(11.1)
44	(11.1)	(11.1)	(11.1)	(11.1)
45	(11.1)	(11.1)	(11.1)	(11.1)
46	(11.1)	(11.1)	(11.1)	(11.1)
47	(11.1)	(11.1)	(11.1)	(11.1)
48	(11.1)	(11.1)	(11.1)	(11.1)
49	(11.1)	(11.1)	(11.1)	(11.1)
50	(11.1)	(11.1)	(11.1)	(11.1)
51	(11.1)	(11.1)	(11.1)	(11.1)
52	(11.1)	(11.1)	(11.1)	(11.1)
53	(11.1)	(11.1)	(11.1)	(11.1)
54	(11.1)	(11.1)	(11.1)	(11.1)
55	(11.1)	(11.1)	(11.1)	(11.1)
56	(11.1)	(11.1)	(11.1)	(11.1)
57	(11.1)	(11.1)	(11.1)	(11.1)
58	(11.1)	(11.1)	(11.1)	(11.1)
59	(11.1)	(11.1)	(11.1)	(11.1)
60	(11.1)	(11.1)	(11.1)	(11.1)
61	(11.1)	(11.1)	(11.1)	(11.1)
62	(11.1)	(11.1)	(11.1)	(11.1)
63	(11.1)	(11.1)	(11.1)	(11.1)
64	(11.1)	(11.1)	(11.1)	(11.1)
65	(11.1)	(11.1)	(11.1)	(11.1)
66	(11.1)	(11.1)	(11.1)	(11.1)
67	(11.1)	(11.1)	(11.1)	(11.1)
68	(11.1)	(11.1)	(11.1)	(11.1)
69	(11.1)	(11.1)	(11.1)	(11.1)
70	(11.1)	(11.1)	(11.1)	(11.1)
71	(11.1)	(11.1)	(11.1)	(11.1)
72	(11.1)	(11.1)	(11.1)	(11.1)
73	(11.1)	(11.1)	(11.1)	(11.1)
74	(11.1)	(11.1)	(11.1)	(11.1)
75	(11.1)	(11.1)	(11.1)	(11.1)
76	(11.1)	(11.1)	(11.1)	(11.1)
77	(11.1)	(11.1)	(11.1)	(11.1)
78	(11.1)	(11.1)	(11.1)	(11.1)
79	(11.1)	(11.1)	(11.1)	(11.1)
80	(11.1)	(11.1)	(11.1)	(11.1)
81	(11.1)	(11.1)	(11.1)	(11.1)
82	(11.1)	(11.1)	(11.1)	(11.1)
83	(11.1)	(11.1)	(11.1)	(11.1)
84	(11.1)	(11.1)	(11.1)	(11.1)
85	(11.1)	(11.1)	(11.1)	(11.1)
86	(11.1)	(11.1)	(11.1)	(11.1)
87	(11.1)	(11.1)	(11.1)	(11.1)
88	(11.1)	(11.1)	(11.1)	(11.1)
89	(11.1)	(11.1)	(11.1)	(11.1)
90	(11.1)	(11.1)	(11.1)	(11.1)
91	(11.1)	(11.1)	(11.1)	(11.1)
92	(11.1)	(11.1)	(11.1)	(11.1)
93	(11.1)	(11.1)	(11.1)	(11.1)
94	(11.1)	(11.1)	(11.1)	(11.1)
95	(11.1)	(11.1)	(11.1)	(11.1)
96	(11.1)	(11.1)	(11.1)	(11.1)
97	(11.1)	(11.1)	(11.1)	(11.1)
98	(11.1)	(11.1)	(11.1)	(11.1)
99	(11.1)	(11.1)	(11.1)	(11.1)
100	(11.1)	(11.1)	(11.1)	(11.1)

Trust Levels and Production

DR. R. S. DWIVEDI

The paper focusses on the question : 'Is there any significant relationship between trust and distrust measures and levels of production in Indian industrial organization(s) ? The findings of the study have linkages with the existing knowledge and Indian culture. There are several implications of the study for management and future researchers.

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Introduction

The basic theme of Likert's (1961, 1967) management systems seems to be differing attitudes of trust and confidence. While system I (Exploitative Authoritative Style) is characterised by a lack of confidence and trust, system 4 (Participative Group Style) involves complete trust and confidence. System 1 led to high productivity initially because of pressure tactics; however, it caused low productivity, high rates of absence and turnover and low earnings in the long run. On the other hand, system 4 has been associated with effective organisational performance both in terms of productivity and satisfaction.

Davis (1972) on the basis of his experience with team building, claims that if the level of trust in a workteam is improved by, say, 5 per cent, the level of productivity in the team tends to rise considerably more. With the improvement in the level of trust, fewer games are played and energy is not wasted in group meetings with a hidden agenda involving personal issues; rather, the energy is mobilised towards getting the project moving. McGregor (1967) claims that the effective performance of a managerial team is a function of mutual trust and open communication between all the participants including the leader.

There seems to be further adequate evidence to infer that trust forms a prerequisite to group effectiveness and accomplishment. Friedlander (1968), in his longitudinal study, analysed the extent to which initial group trust is predictive of several types of accomp-

ishment at a later stage. His analysis showed that workgroups in which members had high trust in one another prior to the laboratory training manifested greater amount of group effectiveness and had more worthwhile meetings after laboratory training. On the other hand, the groups in which members had competition with one another before the training, were found to be less effective and had less worthwhile meetings after training. He inferred that trust acted as a catalyst in combination with laboratory training to strengthen group competence but did not act in this manner in groups which had not participated in training. Another inference was that intra-group trust, before the training, was the characteristic which best predicted or accounted for post training group effectiveness and worthwhile meetings. Moreover, trust has also been found to be associated with group loyalty. Likert (1961) assessed the relationship of group loyalty with the subordinates' average level of confidence and trust in superior. He found that subordinates in high group loyalty cluster had significantly more confidence and trust in their superiors than did those in the lower loyalty clusters.

The above survey of relevant research literature indicates that trust leads to effective performance while distrust causes ineffective performance at organisational and group levels of analysis. However, these relationships hold true in particular cultural and organisational settings and cannot be, therefore, generalised to other cultural and organisational settings including even India that possesses a culture based on trust without testing them empirically. Accordingly, the present study was designed to study the following problem in Indian organisational settings :

Problem

Is there any significant relationship between trust and distrust measures and levels of production in Indian industrial organisation(s) ?

The study sought to answer the above general question and purported to determine the relationships between trust and distrust as measured by Dwivedi's Trust-Distrust Industrial Scale (DTDIS) and levels of organisational and group production in industrial organisation(s) in India.

The original purpose of the study was to demonstrate the significance of increasing trust and decreasing distrust in accomplishing improved productivity as a basis to provide evidence for the immense possibilities of Management by Trust (MBT) System prior to its intervention in industrial enterprises.

The following specific questions form the basis of the present study :

- (i) Do industrial organisations having varying levels of trust and distrust have varying levels of production ?
- (ii) To what extent trust and distrust measures are related to levels of production in different departments of an industrial enterprise ?
- (iii) Do the extents of relationship between trust and distrust measures and levels of production change by removing the common effect of certain background factors influencing the two variables ?

Trust and Distrust Measures

Dwivedi's Trust-Distrust Industrial Scale (DIDIS) was designed to measure trust and distrust at three levels of analysis : individual, group and organisational. Individual trust (or distrust) embodies trust (or distrust) in self and peers, trust (or distrust) in superior and trust (or distrust) in subordinates. Trust (or distrust) in self and peers involves perceptions of assured reliance (or unreliance), credibility (or discredibility), benevolence (or malevolence), confident expectations (or loss of confident expectations) and allied traits in self and peers. Trust (or distrust) in superior involves perceptions of freedom to do things (or restriction to do things) with a sense of confidence (or loss of confidence in superior, consistency (or inconsistency) in superior's behaviour, supporting (or threatening) actions of superior, etc. Trust (or distrust) in subordinates involves perceptions of subordinate's availability (or non-availability), loyalty (or disloyalty), predictability (or unpredictability) and accessibility (or inaccessibility). Group (divisional or departmental or workteam) level trust (or distrust) refers to member's perception of intra-group consensus (or competitiveness), cooperation (or destructive conflict) etc. Organisational trust (or

distrust) involves participants' perceptions of opportunity to take risk and experiment (or restriction on risk taking and experimentation, i.e., stability and conformity), inter-departmental/inter-divisional/union-management cooperation (or destructive conflict), etc.

DTDIS is a 5-point summated scale (low 1, 2, 3, 4, 5, high) consisting of 40 items for unionised organisations (38 items for non-unionised organisations) and except group distrust, has satisfactory reliability, validity and internal consistency of items.

Production Measures

The mean production was worked out on the basis of total departmental production records available in rupees for preceding 2 years and 9 months for company 'A'; in company 'B' total production was available for the entire plant which was averaged for preceding 3 years to work out mean organisational production. In both the companies, average production was computed by dividing total amount of production by number of employees in department/plant.

Intervening Measures

The relationships between trust-distrust measures and levels of production are likely to be reduced or intensified in interaction with several antecedents or attributes influencing them. Some of these measures are used in the analysis to eliminate their interactive effects from the above relationships. These measures include experience, age, pay, education and children of the respondents. Except education, measures of intervening attributes are used in their raw forms. Education is quantified by assigning 1, 2, 3, 4, and 5 points to literate, below matric, matric, graduate and post-graduate educational levels, respectively.

Method of Study

The Organisations Studied: The study was conducted in two plants of leading companies situated in two prominent industrial belts in India. Company 'A' established with foreign collaboration in the late 60s, is considered to be one of the best printing presses in Asia. The end products manufactured by the company include job printing, books, phototype set films and

repropulls printed on papers and other materials. Company 'B' relates to one of the biggest business houses in the country. The study was undertaken at its coating plant, established in early seventies; it manufactured speciality paper including art paper, chrome paper, art card, black centred art card, etc., used for high quality printing. In both plants, the researcher was invited to introduce his newly evolved "Management by Trust" (MBT) system to accomplish effective performance. At the time of study, company 'A' was de-unionised while company 'B' was unionised by Hind Mazdoor Sabha. The detailed methodology of the study is given below :

Samples: In company 'A', the sample of the study included both supervisory and non-supervisory personnel. The sample of non-supervisory personnel was selected by proportionate stratified random sampling method. Since a 25 per cent sample is likely to give adequate precision, a sample of $n=155$ employees out of $N=620$ (regular employees forming the population) was selected from 5 strata (departments) of the company. The supervisory personnel selected for the study included 22 executives whose functions involved immediate supervision of employees. In company 'B', the respondents included both supervisory and non-supervisory personnel selected by proportionate stratified random sampling method. At the request of the top management, a 33.3% sample ($n=60$) including 40 blue collar workers, 10 white collar workers and 10 supervisory personnel was selected from its three strata forming a population of ($N=180$) personnel at plant level. The background characteristics of the respondents for the two plants are shown in table-1. As Table-1 shows, the respondents in the two samples have varied levels of education, experience, age, salary, marital status, social background and number of children.

Collection of Data: The data were collected in June 1979 in company 'A' and in June 1980 in company 'B'. The respondents in the two plants were informed about the study before hand with a request to talk to the interviewer whenever required by him. The interview took place in the guest houses of the two plants. The interviewer gave a preliminary talk on the purpose of the interview with full assurance that information given by the respondent would be used strictly for accomplish-

Table 1
Background Characteristics of Respondents in the Two Companies

Company & nature of respondents	Education		Experience (in years)		Age (in Yrs)		Monthly salary (in Rs)		Children		Marital Status		Social background	
	Below Matric	Matric & above	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Married	Bachelor	Rural	Urban
<i>Company 'A'</i>														
Non-supervisory personnel (n=155)	48	107	7.08	.5-35	30.17	19-58	491	267-1145	1.1	nil-7	86	69	96	59
Supervisory Personnel (n=22)	1	21	17.33	9-36	38	29-65	1850	1200-3900	2.2	1-4	17	5	10	12
<i>Company 'B'</i>														
Blue Collar workers (n=40)	23	17	5.3	1.5-10	27.3	21-26	348	210-660	1.7	nil-4	29	11	35	5
White collar workers (n=10)	—	10	6.9	1.5-9.8	29.9	25-33	473	340-700	1.1	nil-3	7	3	6	4
Supervisory Personnel (n=10)	1	9	13.8	2.5-32	35.1	24-51	1498	720-2580	1.8	nil-4	9	1	6	4

ing professional objectives. The schedule was filled by the interviewer strictly in accordance with procedure frequently used with structured method in measuring trust and distrust among the respondents. Data on production were collected from accounts department while those on background characteristics of the respondents from their personal files in personnel department.

Techniques of Data Analysis: Technique of data analysis include computation of coefficients of correlation by ratio method between trust and distrust and production measures. The common interactive influence of background characteristics—experience, age, pay, education and children, was removed from the magnitude of relationships between trust-distrust measures and levels of production by computing partial correlation coefficients. Significance of coefficients of correlation was determined with the help of a Table (Garrett, 1961).

The Results of the study

The results of data analysis in the study are given in Table-2 to 5 and indicated graphically in Figures 1 and 2.

Organisational Production: Table 2 presents mean levels of trust and distrust and those of production, respectively in the two plants. A perusal of the Table 2 provides a crude comparison between levels of trust and distrust and production in these plants. Plant 'A' had slightly higher mean composite trust (3.47) than plant 'B' (3.20), thus, the former had 8% higher composite trust than the later. Plant 'A' had slightly lower mean composite distrust (1.59) than plant 'B' (1.71); thus, the former had 13% lower composite distrust than the latter. Except group distrust, plant 'A' had slightly lower levels of other distrust measures and slightly higher levels of all trust measures than plant 'B'. These variations in trust and distrust measures between the two plants led

Table 2

Mean levels of trust and distrust measures and levels of production in the two plants

	Plant 'A'	Plant 'B'
<i>Trust-Distrust Measures</i>		
Composite trust	3.47	3.20
Composite distrust	1.59	1.71
Individual trust	3.51	3.46
Individual distrust	1.46	1.63
Group trust	3.44	3.23
Group distrust	1.79	1.73
Organisational trust	3.47	2.98
Organisational distrust	1.53	1.98
<i>Levels of Production</i>	Rs. 47330	Rs. 42900

to corresponding variations in production. Plant 'A' had higher level of production (Rs.47.330) than plant 'B' (Rs. 42,900); thus, the former had approximately 10% higher production than the latter. Fig. 1 shows graphically these variations in trust and distrust measures and levels of production.

Group Production : Table 3 provides mean levels of trust and distrust measures while Table 4 shown mean levels of production in different departments of company 'A'. A perusal of these tables reveals variations in average departmental production along with variations in trust and distrust levels in different departments. A more precise analysis of relationship between trust and distrust measures and levels of production was determined by computing coefficient of correlation by ratio method using departmental data. Table 5 summarises

Table 3

Levels of Average Production in Different Departments of Company 'A'

	Process & plate making	Composing	Printing	Binding & jobbing
Levels of production (in Rs.)	60,400	33,000	64,000	31,900

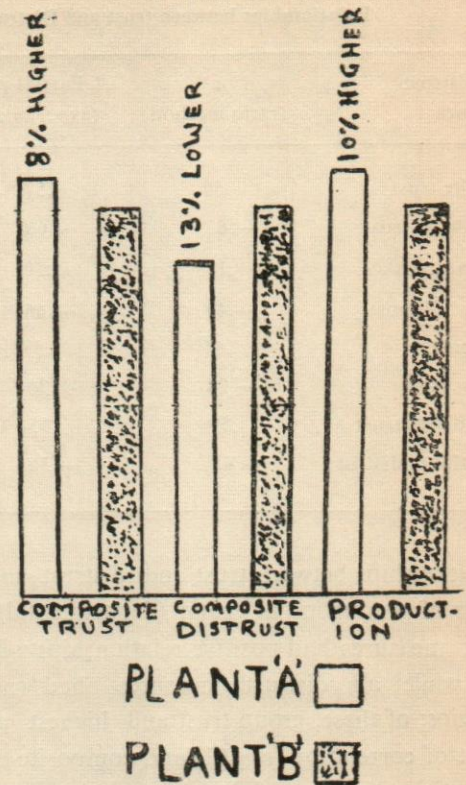


Fig. 1 Variations (in percentage) in trust and distrust measures and organisational production

Table 4
Levels of Composite, Individual, group and Organisational trust and Distrust in different departments of Company 'A'

Trust-Distrust Measures	Administration (n=46)	Process & Plate Making (n=23)	Composing (n=20)	Printing (n=33)	Binding & Jobbing (n=23)
Composite Trust	3.62	3.58	3.33	3.44	3.37
Composite Distrust	1.44	1.61	1.74	1.54	1.65
Individual Trust	3.63	3.71	3.46	3.31	3.38
Individual Distrust	1.32	1.37	1.46	1.47	1.67
Group Trust	3.72	3.35	3.08	3.56	3.29
Group Distrust	1.52	1.90	1.95	1.80	1.79
Organisational trust	3.56	3.45	3.18	3.69	3.41
Organisational Distrust	1.48	1.55	1.80	1.35	1.48

Table 5
Relationships between trust and Distrust Measures and levels of production in Company 'A' (n=4)

Trust-Distrust Measures	r (ratio method)	Partial r_1 (experience)	Partial r_2 (Age)	Partial r_3 (pay)	Partial r_4 (education)	Partial r_5 (children)
Composite trust	.59	.57	.53	.46	.60	.60
Composite distrust	-.63	-.60	-.32	-.63	-.65	-.54
Individual trust	.17	.29	.42	-.03	.28	.44
Individual distrust	-.49	-.65	-.53	-.16	-.64	-.63
Group trust	.61	.57	.29	.63	.63	.52
Group distrust	-.24	-.20	.19	-.47	-.18	.05
Organisational trust	.59	.55	.25	.51	.61	.49
Organisational distrust	-.45	-.36	-.07	-.59	-.47	-.28

these relationships between trust and distrust measures and levels of production at group (departmental) level. All trust measures had positive relationships with production while all distrust measures had negative relationships; of these, group trust and highest positive coefficient of correlation ($r = .61$) and composite distrust had highest negative coefficient of correlation ($r = -.63$) with production. When the common interactive effect of age was removed, the magnitudes of relationships of group trust and composite distrust with production were substantially reduced to .29 and $-.32$, respectively. The removal of common effect of 'children' from the relationship between individual trust and production increased the magnitude of their relationships from .17 to .44. None of the relationships between trust and distrust measures and levels of production could reach statistical level of significance. These relationships have been shown graphically in Fig.2.

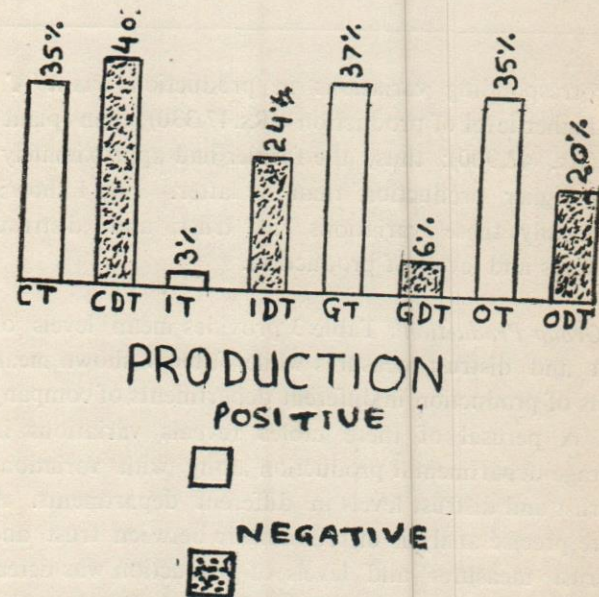


Fig. 2 Relationship (% variances) between trust and distrust measures and group production

Interpretation and Discussion

Functional contribution of Trust and Distrust to Production : As the above analysis shows, except group distrust, trust measures are positively associated with production and distrust measures are negatively associated with it at organisational level of analysis; group distrust measure being less reliable cannot be relied upon. Although comparison of production in the two plants is crude in view of difficulties in ascertaining that the two settings were similar in respects of factors

determining production other than trust and distrust measures, there does not exist evidence that they are widely divergent and thus, altogether uncomparable; both plants use latest technology in their fields; although plant 'B' has lower levels of salary than plant 'A', there does not exist marked difference when cost of living in the two industrial belts is considered; indeed, pay is as much a source of grievance in plant 'A' as in plant 'B'.

At departmental level, there is adequate basis to

infer positive relationships of trust measures with production and negative relationships of distrust measures with it. In this context, it would be more meaningful to think in terms of the square of correlation coefficient instead of correlation coefficient itself. Accordingly, group trust had the highest positive contribution (37%) to production while composite distrust caused the highest restraints (40%) in production. However, as the coefficients of correlation were not statistically significant, the stability of these relationships is dubious.

'Age' and 'children' changed the extent of contributions of trust and distrust measures to production by influencing the functional relationships between the two sets of variables. Age had reduced the negative contributions of organisational distrust to production from 20% to .05% and of composite distrust to production from 40% to 10%; it had reduced the positive contributions of group trust to production from 37% to 8%. At group level, age is positively related to production ($r = .62$) and negatively related to organisational distrust ($-.66$) and composite distrust ($-.74$) and positively related to group trust (.74). It seems that at least composite and organisational distrust exerted negative impact upon production in interaction with age. If the interactive common effect of age is removed from the magnitude of relationships between trust and distrust and production, the functional relationships proved to be spurious; trust and distrust measures became too weak to influence production. Likewise, 'children' increased the positive contribution of individual trust to production from 3% to 19%. At group level, 'children' is positively correlated with production (.38) and negative related to individual trust ($-.50$). Thus, individual trust exerted more positive impact upon production if the interaction with 'children' is controlled; there is higher positive relationship between individual trust and group production when the effect of differences in 'children' is eliminated.

Linkage With Existing Knowledge: The varying amounts of positive and negative contributions of trust and distrust measures to production can be interpreted in the light of recent behavioural science studies. It seems that trust improves organisational and group

productivity by improving organisational processes specifically motivation in particular and decision-making, communication and control in general, resolving conflicts and integrating goals and distrust hampers performance by adversely affecting these processes, causing destructive conflicts and disintegrating goals. Likert's (1961, 1967) analysis shows that trust and confidence act as motivational force while distrust as demotivator. System 1 and System 2 based on distrust cause subservient attitudes towards superiors and wide-spread hostility towards subordinates and peers, while system 3 and system 4 based on increasing level of trust give rise to cooperation and favourable attitudes throughout the organisation. Likewise, Tannenbaum and Davis (1969) provide evidence that in a trusting climate people are motivated "from the inside out" and are potentially self-directed, while in a distrusting climate people are motivated "from the outside in" and are responsive only to outside pressures. Moreover, Blake and Mouton's (1964) team-based style considers mutual trust, support and respect as the most effective motivational device; people are committed to work as a team or as individuals where there is mutual trust, support and respect. Trust seems to optimise decision making communication and control processes while distrust appears to hamper them. In a trusting climate, quality of decision improves considerably because of free exchange of information and conscientious accuracy in transmission of information while in a distrustful climate, quality of decision goes down in view of careful rationing and deliberate distortion of information. In a trusting climate subordinates are involved in decision-making while in a distrusting climate they are deprived of participation. There exists huge body of literature showing the utmost significance of trust in improving communication and adverse effects of distrust in hampering it. Haney (1967) indicates that trusting relationships and effective communication are interdependent. Lillico (1972) in his analysis shows that there occur double distortion in interpersonal communication in a distrustful climate by citing a case study of an electronics company. Similarly, other studies reveal that in the absence of mutual trust, communication intensifies prevailing differences and minimises consensus of opinion (Mellinger, 1956), that "group confidence" leads to open communication (Ziller, 1958) and that interpersonal trust between

superior and subordinate managers enhances accuracy of communication (Read, 1962). Trust is likely to optimise control process in organisational settings. In fact, traditional systems of control are based on distrust while behavioural approach to control stresses the principle of self-control. If the superior cannot trust his subordinates, he tends to over control them. As Jennings (1971) points out, there will be less need for control when there is opportunity to invest trust. Greater the amount of trust of superior in subordinate, the more they are likely to work according to their own choices leading to increased creativity. Indeed, in a trusting climate as Argyris (1957) would like to assert, there will be enhanced possibilities for psychological success of people and decreased need for tight control. Obviously, effective decision-making, communication and control processes accomplished through trust are likely to improve production, morale and merit ratings and decrease absenteeism, tardiness and turnover while distrust hampers these performance measures by impoverishing decision-making, communication and control systems in organisational settings.

In addition to improving organisational processes, trust facilitates resolution of conflicts at individual, group and organisational levels while distrust causes destructive conflicts along with hampering organisational processes as discussed above. There exists sound theoretical basis for such interpretations. Likert and Likert (1976) provide system 4 interaction-influence network stressing supportive behaviour on the part of leaders involving a basic trust and faith in people. The leaders are required to deal with every-one especially with whom they differ in terms of this system rather than in an ego-deflating manner. This approach substitutes "win-win" problem solving for the "win-lose" approach. Likewise, Walton and Mckersie (1965) confirm the conclusion that a supportive and trusting climate facilitates joint problem solving while the defensive and distrusting atmosphere hampers this process. The supportive atmosphere is marked by encouragement and freedom to act spontaneously without fear of sanctions, while the defensive climate gives rise to the perception of threat and punishment. Moreover, Walton's (1966) integrative approach based on trust and confidence is considered to be the most effective system of management of conflicts constructively while distributive approach based on distrusting attitudes is

viewed to be the least effective one.

Last but not the least, trust facilitates integration of individual, group and organisational goals while distrust causes disintegration of these goals. Argyris (1964) on the basis of his analysis confirms that the level of trust and respect between management and employees is a significant factor in integration of individual and organisational goals. In a climate marked by high level of trust, the individuals are likely to enhance their opportunity for psychological success and may be more inclined to perceive the legitimate needs of the organisation. On the other hand, in a distrusting climate, the individuals may derive success partly by breaking different rules in the enterprise to get away with it. Indeed, application of his "mix-model" based on trust and confidence integrates individual and organisational goals by effective mobilisation of psychological energy at work while adherence with traditional techniques based on distrust diverts psychological energy from the attainment of organisational goals in view of apathetic attitudes, short-sighted behavioural patterns, dissatisfaction of higher level needs and allied defensive behaviour. Likewise, Mc Gregor's (1960) integration principle (theory Y) based on trust and confidence stresses the creation of condition in which individuals achieve their own goals best by directing their effort towards the success of enterprise. On the other hand, application of traditional principle (theory X) based on distrust leads to disintegration of goals in view of undesirable behavioural consequences such as passivity, hostility, reluctance to accept responsibility as a result of deprivation of higher level needs. Thus, by integrating goals trust facilitates attainment of production goals, while distrust hampers it by causing disintegration of goals.

Linkage with Culture : Positive contribution of trust and negative contribution of distrust to production can also be interpreted from the cultural standpoint. Indian culture is largely based on trust. It seems that being deeprooted in culture, trust energises individuals to greater efforts while distrust being culturally devalued, thwarts their actions. Moreover, in Indian culture, trust is considered as a prerequisite to effective attainment of "objectives" in different settings while distrust is viewed as an hindrance in their attainment causing

divergence. This is evidenced in Indian philosophy and mythology embodied in *Vedas*, *Upanishads*, *Puranas* and subsequent religious, philosophical and literary works based on them. These sources of cultural values stress numerous norms and values related to trust and confidence and prescribe norms and values to abandon distrust in day-to-day behaviour. Since his (or her) infancy, every individual is constantly exposed to numerous measures to enrich himself (or herself) with trust and get rid of distrust. Because of constant exposures to trustful attitudes and positive reinforcement of trusting behaviour and negative reinforcement of distrusting behaviour, a typical Indian is perhaps conditioned to trust. Indeed, he (or she) lives in an environment full of "*Shradha*" and "*Vishwas*" (used synonymously for trust); he (or she) attempts to perform his (or her) every role in social settings trustfully and keeping himself (or herself) away from behaviour causing distrust in others and himself (or herself). Whether a typical Indian is a son or a daughter, a husband or a wife, a father or a mother, a brother or a sister, a teacher or a taught, a host or a guest, an employer or an employee, a superior or a subordinate, etc. he (or she) is likely to abide by trust-based norms and keep himself (or herself) away from distrustful activities. Explicitly, this has been the major cause of historic effective performance of the above roles; of course, in recent years there may occur deviations from the above typical Indian values among people who have become more materialistic in their value systems causing ineffective performance of roles. Notwithstanding these perversions, trust and confidence seems to pervade a large part of the Indian population including industrial organisations. Therefore, it is not unexpected that trust supported by deep-rooted culture increases production, and that distrust disapproved by prevailing cultural norms results in decreased production in organisational settings.

Implications : In the light of positive association of trust measures and negative association of distrust measures with production as determined in the present study and supported by plethora of behavioural science research and values and norms embodied in vast Indian culture, the following implications can be pointed out for management and future researches :

(i) To accomplish improved productivity in organisational settings, management may increase input of trust and reduce input of distrust by redesigning organisational structure and processes that stress trust and distress distrust, increasing reliance on behaviourally advanced trust-based systems and decreasing reliance on traditional distrust-based approach to resolve conflicts and intensifying applications of integration principle and allied behavioural measures enriched by trust and diminishing adherence with theory X and allied traditional measures dominated by distrust to attain integration of goals; this new behavioural approach to management, designated as Management by Trust (MBT), is to be followed continuously with increasing efforts without any slackness of forces for accomplishing effective performance; it seems to possess immense possibilities for managing people in modern organisations to make their optimal application for the betterment of the individual, the organisation and the society.

(ii) The present study is limited to simple fact of association of trust and distrust with production measure; therefore, future researchers may study the relationships of trust and distrust with varied types of performance factors embracing not only concrete organisational goals but also intangible performance factors relating to the maintenance of the internal system and the adaptation of the organisation to the environment at decreasing rates of human and material costs; the future researchers may study the relationships of trust and distrust with performance factors in interaction with numerous factors contributing to employees' performance such as physical conditions, ability, social conditions and individuals' needs and other measures such as technological development, job layout and methods; the future researchers may also determine causal relationships between variables either by undertaking experimental studies or exerting more controls by adequate planning and analysis in non-experimental studies; there exist possibilities for studying the relationships across culture in varied organisational settings.

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Motivation and Perception of Organisational Climate

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The present study attempts to examine the effect of employee's n-Achievement on their perception of organizational climate. For the study a sample of 150 Bank employees was selected. The results of the investigation indicate that the employees motivated with differential strength by the n-Achievement significantly differed from each other with regard to their perception of most of the dimensions of organizational climate. The investigation yields that the employees highly motivated by the n-Achievement, in comparison to low motivated ones, perceived most of the components of their job life to be comparatively more adequate, desirable and encouraging.

No trend has been more dynamic in industrial psychology during the past two decades than the growth of interest in organizations. Organizations are social units deliberately constructed and reconstructed to seek specific goals, and in turn fulfilling a greater variety of social and personal needs. These organizations are attributed with certain physical and socio-psychological characteristics which influence its members and differentiate one organization to other ones. These characteristics prepare a climate in the organization. Litwin and Stringer (1968) describe the Organizational Climate as a set of measurable properties of the work environment, perceived directly or indirectly by the people who live and work in this environment. In their model the concept of organizational climate was used as an intervening variable mediating between organizational factors and motivation tendencies. According to their point of view the perceived Organizational Climate arouses motivation causing emergence of behaviour which results in various consequences for the organization such as satisfaction, productivity or performance.

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When a psychologist assumes that individual behaves in or towards organization on the basis of their global perception he also assumes that a correlate of behaviour in organization is individual's attributes. This assumption dictates a micro approach to predicting behaviour involving such data as individual's abilities, needs and values. Among several personal variables

employees' need-structure is more likely to significantly influence their perception of Organizational Climate. Motivation influences the concepts we use in dealing with the world of physical reality. A very few attempts (Litwin & Stringer, 1968; Tagurri & Litwin, 1968; White, 1972) have been made to explore the effect of employees' motivation on their perception of Organizational Climate. The present study proposes to examine the effect of employees' level of work motivation, generated by the n-achievement, on their perception of various constituents of the climate of their work-organization.

Methodology

Sample : For the study a sample of 150 employees were randomly selected from a Regional Office of the State Bank of India. The selected employees belonged to Planning, Management and Agricultural departments of the Organization. They were all graduates or above. To maintain homogeneity in the sample the range of employees' age, length of service and salary was tried to be kept minimum possible.

Measures : Two sub-scales of the Employees' Motivation Schedule (Srivastava, 1981) was employed to assess (1) Achievement-A : Improvement of Competence and self. (2) Achievement-B : High production, competition, and goal-achievement. The two sub scales comprise of 10 items each. The reliability index (split half) of the sub scales are .65 and .57, respectively.

The Organizational Climate Questionnaire : (Litwin and Stringer 1968) was used to ascertain employees' perception of various dimensions of Organizational Climate. The questionnaire consists of 50 items, with four response-alternative, relating to following nine aspects of work environment : work-structure, responsibility (autonomy), reward, risk, warmth, support, standard of performance, openness to conflicts, and identity with organization. The index of reliability of the nine subscales were found to be .49, .32, .67, .12, .76, .76, .37, .21, .79, respectively.

Procedure

The two psychometric devices were simultaneously

administered to the selected Ss. Thereafter, the Ss were classified into high and low motivation groups on the basis P_{50} of the distribution of achievement motivation scores. Further, the two motivation groups were compared with each other with regard to their scores on nine subscales of the Organizational Climate Questionnaire.

Results

The results emerged out of the statistical treatment of the obtained data are recorded in the following tables :

Discussion

The analyses of the obtained data yield that the employees indicating to have stronger needs for improving their self and competence, and for maintaining a high production level and achieving the ultimate goals perceive their work to be comparatively more structured. They perceive more opportunities of taking risks, responsibilities and autonomy and opportunities of rewards in their job. These employees, in comparison to the low motivated ones, also perceive the standards of performance in the organization to be higher and identify themselves more with their organization. But the high and low motivation groups of the employees do not significantly differ from each other with regard to their perception of warmth, support and trust, and openness to conflict prevailing in their work environment (Tables 1 and 2).

The obtained coefficients indicate that employees' n-achievement and their perception of most of the components of organizational climate, which have been differentially perceived by high and low motivation groups, positively correlate (Table 3). In other words the employees who maintain high level of motivation also perceive various components of job life in more positive form, and vice-versa.

The obtained results enable us to conclude that employees' level of n-achievement extends differential effect on their perception of most of the job variables constituting the organizational climate. The employees identified as highly motivated ones perceive most of

Table 1

Comparison of high and low Achievement Motivation (competence and self improvement) groups with regard to their perception of organization climate

Components of Organizational Climate	Perceived Organizational Climate Score				
	High Motivation Grp. (N=83)		Low Motivation Grp. (N=67)		t
	Mean	S.D.	Mean	S.D.	
Structure of work.	24.38	6.25	19.12	6.05	3.68†
Responsibility. (Autonomy)	20.47	5.65	17.15	5.11	2.68†
Rewards.	18.36	5.14	15.25	4.98	2.66†
Risk.	15.83	5.87	11.24	5.03	2.85†
Warmth.	14.16	4.93	12.63	4.79	1.27
Support & Trust.	15.11	5.93	13.29	4.97	1.14
Standard of Performance.	18.19	5.39	13.73	4.04	4.09†
Openness to Conflicts	10.04	3.84	8.95	3.07	1.36
Identity with Organ.	12.17	4.05	9.26	4.18	3.03†

†p < .01

Table 2

Comparison of high and low achievement motivation (need for high production and goal achievement) groups with regard to their perception of organizational climate

Components of Organizational Climate	Perceived Organization Climate Score				
	High Motivation Grp. (n=78)		Low Motivation Grp. (n=72)		t
	Mean	S.D.	Mean	S.D.	
Structure of work	23.88	6.79	20.26	5.42	2.57†
Responsibility (Autonomy)	19.09	5.69	14.38	5.11	3.68‡
Rewards	17.85	5.21	14.37	4.91	2.97‡
Risk	16.36	4.60	11.39	4.09	4.97‡
Warmth	14.71	4.71	12.35	3.64	.42
Support & Trust	13.06	3.57	11.84	4.02	1.40
Standard of Performance	16.26	4.17	14.51	4.21	2.61‡
Openness to Conflict	11.09	3.98	9.76	3.75	1.53
Identity with org.	12.45	3.29	9.62	3.88	3.29‡

‡P < .01; †p < .05

Table 3

Coefficient of correlation between Achievement Motivation-A and B and perceived Organizational Climate Scores

Components of Org. climate	Motivation	r	Motivation	r
Structure of work Responsibility (Autonomy)	Achievement	.29‡	Achievement	.34‡
		.34‡		.31‡
Rewards	Motivation-	.28‡	Motivation-	.27‡
Risk	A	.21†	B	.25‡
Warmth		.09		.09
Support & Trust		.14		.13
Standard of Performance		.36‡		.37‡
Openness to Conflicts		.12		.11
Identity with organization		.31‡		.36‡

‡p < .01; †p < .05

the constituents of their organizational climate to be comparatively more desirable, encouraging and satisfying their intrinsic needs. Such an observation may be interpreted in the context of presumed optimism, enthusiasm, self confidence and positive job attitudes of highly motivated employees. The present findings may also be explained with reference to the recognized principle that "perception is self enhancing". It has also been established that the individuals instigated by some needs are likely to perceive the objects of their environment as to be satisfying their needs or providing a means to its satisfaction. With reference to these postulations it can be argued that the highly motivated employees perceive and interpret their organizational climate to be more desirable and extending more opportunities as well as approaches to achieve their goals. It may also be argued that the highly motivated employees who tend to experience comparatively more job satisfaction and get highly involved in their jobs are more likely to perceive their organizational climate as to be more favourable and facilitating. Employees' such apperception of their organizational climate inturn enhances their 'job' as well as 'personal'

satisfaction (Elsalmi & Commings, 1968; Hall & Khalil, 1968; Schnieder, 1973; Water & Nick, 1979; Schnieder & Robert, 1975; Christopher, 1975, Muchinsky, 1977).

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A Study of Indian Bureaucracy

DR. RAM PRAKASH

Though the performance of Indian bureaucracy over the last 30 years has been impressive, yet the nation has not been able to get the best out of its economic development efforts. According to the author there are four major aspects which people in government have not been able to manage well and these adversely affect the efficiency and productivity. Training has an important role in managing these four aspects of change for development, efficiency and effectiveness.

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Indian bureaucracy has been under severe criticism in recent years for its administrative inefficiency and corruption. The rigid complex system of rules and procedures and long chain of command, have earned for it a dubious distinction. Case studies show more time is spent in transmission of files from one seat to another as compared to the time spent for taking a decision. Civil servants in their adherence to rules are said to assume the role of human paper weight. Files often do not move without "speed money". The roots of corruption are said to be embedded in the inability of civil servants to resist transfer pressure for hidden designs of the designs of the political executives. On the other hand temptations for civil servants to connive with political representatives are enormous. In that case they not only get their share of grease money, but also entry into the charmed circle of friends of political rulers.

Interesting fictions and anecdotal evidence portraying oppressed executives are narrated now and then in columns of the daily papers and figure in the Parliament debates and outside. Cases are also not wanting where sincere, honest and upright civil servants have successfully resisted these pressures for upholding techno-economic merits of the administrative decision. A good account of fifty case studies of senior civil servants has been given in the book—"Administrators in a Mixed Polity" by J. K. Ray. His division of administrators among the four categories of—"pro motor", "resister", "accomodator" and "detractor" might be questioned because administrators rarely

behave consistently according to any one of the four types. His behaviour pattern varies from one situation to another. He can at best be described as situationist. In any case from such sketches it is difficult to establish the respective dominance in Indian bureaucracy of the two groups of civil servants—resisters and compromisers. A conclusion is often drawn from these anecdotal evidence that Indian bureaucracy has slipped into sullen lethargy. It is demoralised and bogged down to 'red tape' a 'paper work'. 'Job satisfaction, morale and motivation to accept challenges in the context of govt. administration are phrases of text book significance. A dispassionate examination of the working of Indian bureaucracy will reveal that social scientists often blow these incidents to a level of undue importance.

Composition of Bureaucracy

The anecdotal evidence gives perceptions of "the elephant by the blindmen". These are useful for identifying the areas for improvement, but not for forming an opinion about an institution of the size and complexity of Indian bureaucracy. The central, state and local government employ nearly 13 million people in various economic activities. They constitute about 50 per cent of the total employment in organized sector which is the backbone of our economy. The organization of 13 million is manned by persons of diverse mental make up. There are administrators recruited from open competition to man the top civil service positions. They belong to the category, may be called for want of better expression, "BRIGHT A BIT". They are the ones who are moulded as innovative managers. On the other extreme there are persons recruited under the postulate "Government is the employer of last resort". Those who cannot be employed elsewhere must be engaged by the government. They belong to the category "GOOD A BIT"—again for want of better term. They are the people who occupy the role of routine managers. By and large according to impressionistic estimates, 95 % of government executives are routine managers. Some stray incidents of inefficiency, corruption and victimisation are natural in the hurly burly of total operations. Despite these demoralising incidents one gathers considerable evidence about the vitality of this organization.

Evidence of Vitality

A good index of the health and vitality of the administrative machinery is its performance under changing circumstances. The process of change and management of change are true indices of organizational effectiveness. Change is the eternal law of nature. A growing organization is always in the state of continuing change yet it never reaches a state of total stability. Once an organization reaches total stability, it tends to stagnate and decline. History has many examples of it in the realm of culture, religion, empires, dynasties and business. Change, in fact, is a necessary sign of growth and progress. Absence of change is a sign of internal decay. Yet change for its own sake will be futile. It becomes meaningful only when it has a purpose. Well managed change is the secret of growth and vitality in any organisation. That is precisely the reason that process of change and management of change have recently become important topics for discussion in all management development programmes.

Process of Change

Over the last few decades a number of factors have played an important role in changing the working, direction, composition, characteristics and method of work of this big organisation. From its dominating role of maintaining "law and order" in colonial era, it has assumed a major role for economic development of our country. Future of our country has been identified to lie in economic development. The touch stone of public interest for decision making in government is economic welfare of the people at large. It also serves as an important yardstick to measure the success of overall performance of government machinery. Apart from its role in economic development it was called upon to serve as an important reservoir of managerial skills for creation and management of complex public sector enterprises.

Performance

The success of overall performance of this organisation is seen from the facts of its ability to transform a stagnant and decadent economy into a modernised one. In the 50 years of pre-independence era we had an

estimated trend growth rate of 1.2% per annum miserably lower than the rate of growth of population. In the post independence period of the last 30 years we have achieved an over-all annual growth rate of about 3.6 per cent. It has played a dominating role in achieving an impressive diversification of industrial capacity and self sufficiency in consumer goods and food grains. Country has achieved a record level of production of food grains of 133 million tonnes. Over and above, these achievements, effectiveness of this big organisation is seen from the facts that it has confronted and overcome enormous problems and difficulties. On the whole it has been able to give the country a stable administration envied by many neighbouring countries.

A brief account of the government performance gives evidence of spirited and healthy organization. Obviously a decadent political systems, subversive authority of public servants, and demoralised agency would not have been able to achieve all that.

Management of Change

Analysis of the process and management of change reveal a number of ingredients which are responsible for development of Indian bureaucracy and are indicative of its vitality. It is a universal fact that change is a response to external and internal stimuli. In the context of government organization most important external stimuli which have assisted in its development are public opinion sustained over a time, and technological advancements. The democratic political structure has helped in creation of not only public aspirations, but also challenging situations for the bureaucracy of the nature where its very survival continues to be at stake. The internal stimuli which have helped most in its growth are desire and vitality of its people to grow. Studies reveal that organisational response to change is usually determined by its top brass. The sensitivity and vitality of the top layer is a key factor in changing organizations. It is the vital few innovative managers who set the pace of growth. How their vitality and sensitivity have been managed, is a unique feature of development of this organization. The following eight factors have helped in preserving the ability of management to seek and to sense change :

- (i) *Security of Service* : It is an ingredient whose positive impact is not adequately realised. Insecurity over sustained period is not conducive to best performance of any organization.
- (ii) *Admixture of Young and Old* : As one nears the age of normal retirement human instinct tends to make one more conservative and less adventurous. At the same time, it is necessary for the organisation to preserve the spirit of change through innovation. Balance is reached through admixture of young and old at top and senior levels. People in their 40s with enough experience and future horizon, alongwith elder colleagues provide balance of mature judgement. The dead hand of people who hang on top smother the initiative of young.
- (iii) *The Normal Age of Retirement* : is the third factor in preserving the sense of change. Non-retiring top executives are the worst impediments to organisational progress through change.
- (iv) *The Renewal of Managerial Skills* : through meetings, participation in courses, and seminars in India and abroad greatly helps in the process of managing change in government organization. Such exposures of top to the middle administrators sharpen skills and stimulate thinking about unconventional ways of dealing with problems. There are, of course, cases when some persons are seen repeatedly in the seminars, but they are exceptions. They are benefitted least and do not become wiser.
- (v) *Strong Research and Development Wings* of government are other important instruments of change. Planning Commission as R & D organization of government, despite its much misunderstood role, has served as an effective antenna as a catalytic agent for development and growth.
- (vi) *Opportunity to Grow* : There are a very few organizations other than the government where people could aspire to rise to the top from humble position. This tradition has sustained the development of the government organization.

- (vii) *Meritocracy*: Another integral part of development administration is its emphasis on meritocracy after certain stage of career. Merit-cum-seniority in promotion is the watch word after the position of Joint Secretary and for placement in key Ministries. At this stage, "sheep" are separated from "goats".
- (viii) *Narrowing of Income Differentials* in different levels of hierarchy has helped in attracting talented and professional people. By virtue of narrow income differentials they could have the confidence to talk to their bosses on equal levels which is conducive to development and growth.

Scope for Improvement

Existence of these ingredients give ample evidence that Indian bureaucracy has vitality and skills to manage economy of our size and complexity for development and growth. Lest one should have the impression that people in government have successfully managed all aspects of change for development, it may be mentioned that there are aspects where best ways to manage are yet to be learnt. Some of such major aspects are referred below :

(i) *Attitude of Technocrats Versus Generalists—*

There is a marked difference between the attitudes of technocrats and generalists in government. Technocrats seem to be more professionals and more task and result oriented. Generalists on the other hand are more oriented to people and rule. Both have well developed sense of social justice. For economic betterment of the country there is a need to develop loyalty and team spirit between technocrats and generalists. This is a change people in government are facing for which the best way of managing is yet to be evolved.

- (ii) *Political Executives and Administrators*: Our country has 4388 legislators (788 MPs and nearly 3600 MLAs) and 13 million civil servants. Press has often referred to interference by political executives in the day to day working of administration. Govt. executives are

reported to be under pressure of public representatives to take decisions irrespective of techno-economic justifications and established procedures. This adversely affects efficiency of administration. Well intentioned politicians are oriented to their concern of public acceptability by their interest groups, while bureaucrats like to take their decisions keeping in view wider implications and set practices. A political executive with his short tenure is impatient and his "hurry-up driver" is at work to do a lot for his constituency or country. He finds "dead woods" in administration. Their exact number is not known. In America they are estimated to be about 25% of total employment. Apart from the cases of arbitrary transfers which are undoubtedly bad for morale & integrity of civil servants, political executives use this weapon to deal with 'dead wood'. Studies made by social scientists prove there is positive correlation between efficiency and immigration. The same appears to hold good in case of transfers. However, there is a need to have proper understanding. The best way of managing political bosses is yet to be developed.

- (iii) *Entrepreneurship Skill*: Harassing procedures of post audit, inquiries by committees and clash of interests between executives and political group in power, often kill the spirit of entrepreneurship. It is one of the major weaknesses of professional administrators. For faster rate of economic development the style of management has to become more innovative and risk-taking than in the past. People in government have to learn to manage this change by identifying & recruiting the entrepreneurs, and promoting them within the organisation.

Development Instruments

In the management of change with particular reference to the above mentioned three problems, training and seminars have an important role to play. Adequate headway is yet to be made in developing training programmes which could modify the conventional behaviour pattern of political executives and civil servants and which could ensure effective applica-

tion of modern tools and techniques of management. Periodic "Appreciation Courses" on problems of topical interest for political executives with men of achievements as resource personnel have bright prospects to succeed. Project based training techniques for technocrats and generalists can go a long way for developing team spirit and understanding for common goal. Quite often efficiency in government administration is compared with that of private organizations, but adequate efforts are not made to improve the quality and quantity of management discipline inputs in training programmes for civil servants. Management orientation in public administration is the key for more effective utilisation of government machinery. Sharing of experiences by other countries through Conference in Indian context is another method whose potentialities are to be fully explored.

Conclusion

The big government organization of 13 million has developed and managed change through its various structural features. It is capable of retaining its vitality and sensitivity for progress through change. The stray

incidents of misuse of power by political executives under the guise of public interest adversely affect the morale of individual civil servants, but these are manageable so long as the system provides a remedy for rectification of the same (of course, without questioning the need to evolve simplified procedures where possible). The overall performance of government organization bear evidence for non existence of any moral crisis at organizational level. It is further supplemented by the larger number of people offering to serve in government at different levels. Government as an organisation has to continually seek change with stability and balance and with due concern of people at all levels. In that process of change, training seminars and conferences have important roles to play. It is yet to learn the best ways of managing change for bringing in harmony the diversities in the attitudes of technocrats, generalists and political executives and to identify and promote entrepreneurship. Survival of Indian bureaucracy depends on its ability to preserve its vitality and sensitivity to the process of change and to manage change for progress and development with stability and balance. It is undoubtedly difficult for administrators to work under present circumstances, but it is far more interesting than it ever was.

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Technological Change and Labour Displacement—A Study of Textile Industry

K. SELVANATHAN

This paper emphasises that Textiles being a labour intensive industry, adoption of advanced technology which is not appropriate to our conditions, should be discouraged. Employment generation being the national objective, only appropriate technology should be adopted which is output augmenting as well as employment generating. The paper suggests that the managements should accord top priority in the utilization of the existing machines and while upgrading the technology, they should as far as possible prefer renovation rather than replacement of the existing machines.

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Introduction

The introduction of new technology in an industry depends much on the purpose, the environment and the attitude of the management, as well as the workers. Most of the managements especially of the private, feel that they should adopt new technology, to remain competitive in the market. This, of course, is a necessity in a highly competitive industry with high rate of technological obsolescence. However such an urge for rapid adoption in labour intensive industries, like Textile, Jute etc., has created more problems. Often, the adoption has resulted in resistance from labour due to labour displacement. A general appraisal of the industrial relations by the labour ministry has revealed that more than 50% of the strikes and 25% of the lockouts have been due to two reasons, remuneration and retrenchment.

However, the managements feel that displacement of labour, at least, to a limited extent is inevitable when an industry adopts new technology, whereas the workers point out, that, under the guise of technological change the managements are trying to reduce the labour required. In a country like ours, employment generation should be the main objective. It is equally important also to stress that the long term survival of any enterprise will depend upon constant upgradation of technology. Hence there appears a conflict of interests. The conflict can be minimised if

the managements adopt appropriate technology which is output augmenting as well as employment generating.

In this paper an attempt is made to analyse the extent of technological change and consequent labour displacement in the cotton textile mills. The mill sector is taken for the study since the problem of labour displacement has attracted the attention at the national level.

The Textile Scenario

The textile industry provides direct employment to nearly 20% of the total industrial labour and accounts for 20% of the total industrial production. The industry has three sub-sectors namely, mill sector, powerloom sector and handloom sector. There are nearly 805 textile mills in the country out of which 65% are spinning mills and the rest are weaving mills. The overall weaving capacity is shared by the mill sector with 2.1 lakh looms, powerlooms with 6 lakh looms and handlooms with 3.02 million looms. The share of production of cloth by the mills, especially cotton cloth has dwindled from 78.6% in 1951 to 30.1% in 1982. This was due to heavy competition from the powerlooms, besides the internal problems of their own. The mill sector after experiencing a good performance in the fifties and sixties, has entered a grim phase in the early seventies, characterised by the fall in the growth of output and closure of a number of mills.

Technological Condition

The level of technology of the India Cotton Textile mills when compared to that of the developed countries can be described as "intermediate". Technologywise, the mills can be grouped as newly established mills with advanced technology, the old mills with upgraded technology and the old mills with obsolete technology. Of these, the last group consists of many mills.

A recent study by the Textile Commissioner, shows that nearly 58% of the total machinery in the cotton textile industry needs to be replaced. A macrolevel estimation reveals that as much as 63% of the spindles and 82% of the looms are more than 15 years old, with

technological obsolescence. The findings of the textile commissioner may provoke us to think as to whether the technological condition has worsened to such an extent. However, the study by Ahmedabad Textile Research Association about the techno-economical appropriateness of the existing technology in textile industry to Indian conditions, points out that the so-called technology gap does not really exist; rather an economic gap exists.¹

The Rate of Technological Change

Regarding the spinning mills, the technological development took place in the areas, 1. larger packages, 2. higher drafts and 3. increased speeds with a view to mainly increase the rate and volume of production. A notable feature is that the stages of production has remained the same. The mills preferred renovation of the existing machines to replacement. Of late, the textile technologists feel that since the possibility of renovation or incorporation of the new technology in the existing machines in spinning has reached the saturation point, the managements would hereafterwards desire to go in for advanced technology, which can dispense certain stages of production. A few mills have already adopted the latest technology namely, open end spinning. The overall effect of this adoption would lead to a drastic reduction in the number of workers required.

In the weaving sector, technological change has occurred from non-automatic to semi-automatic looms, with a view to increase the speed as well as volume of production. Since the loomage in the mill sector has been frozen by the Government, the healthy mills, preferred replacements of non-automatic to automatic looms. The marginal mills adopted the less advanced technology to renovate the existing machines. Renovation was carried out in post weaving departments. Of late, even the marginal mills are seriously considering to replace the ordinary looms with automatic looms. A few advanced mills have already gone for airjet and waterjet looms.

1. Machinery modernization : Is there a "Technology Gap ?" ATIRA, Technological Digest, December 1982, pp. 29.

It has been observed by Textile Research Associations that rate of technological change in textile industry, as a whole, has been very slow. The primary reason attributed for the slow change, is the sluggish rate of growth of demand for cloth. Moreover, the nature of competition between the mills was not technology based, rather cost based. However, an individual millwise analysis would reveal that there exists a variety of technological differentiation among the mills. A group of mills which produce high value fabrics like synthetic cloth to cater the urban consumers, have gone for adoption of advance technology. A few mills like Vimal, Bombay Dyeing, etc., have advanced technology comparable to international standards. Currently, even the marginal mills are in favour of adoption of new technology. Hence on the whole, in textile industry, there exists an urge for adoption of new technology.

The Problem of Labour Displacement

The increase in the number of mills who have adopted latest technology like open end spinning and shuttleless looms in weaving has created a fear of retrenchment in the minds of the workers. The fear has been aggravated by what has happened during the Bombay mills strike. Nearly a dozen mills have adopted large scale modernization, without the knowledge of the striking workers, retrenched many workers and recruited new workers, virtually for half of the wage paid to the old workers.

The overall, employment growth rate has been less than 0.7% per annum. Though the average daily employed in the mills has increased from 7.15 lakhs in 1951 to 8.81 lakhs in 1981 registering an increase of 23.2%, it has come down to 7.3 lakhs in 1982. Correspondingly there was an increase in the number of spinning mills to the extent of 288%. The data indicates that there is a definite fall in the rate of employment generation in the mill sector.

In the spinning sector as is brought by research studies, if open end spinning technology is adopted, there will be large scale retrenchment. As is revealed by the Table, on the average this system would employ only about 30% of those engaged in the existing technology.

Number of operatives (workers) for production
(Equivalent of 25000 spindles)

Product-Yarn Count	Ring spinning Technology (operatives required)	Open end technology (operatives required)
6 _s	430	120
10 _s	344	90
20 _s	198	63
30 _s	145	43

Source: Resume of Papers, 22nd Technological Conference, ATIRA, Page 14.

But from the cost aspect this system is in no way better than the existing system, besides involving heavy investment. However, this system is best suited if the objective of adoption is to reduce drastically the workers required. This technology is an example to show that if advanced technology is adopted, it would lead to a drastic displacement of labour.

Renovation or Replacement

If the adoption of new technology is for renovating the existing machines, the problem of displacement will not be severe. The excess labour could be absorbed due to the increase in work load or through expansion of the overall capacity. So far, the unions at the mill level negotiated with the management for increased wage to take up extra work that was due to increased rate and volume of production. A few mills followed voluntary retrenchment scheme, which is a costly measure for the marginal mills to go in for.

If the technology adoption is through replacement, it would lead to heavy displacement of labour. For example, in the weaving department, if the non-automatic looms are replaced by automatic looms it would lead to greater reduction in the labour required. Hence, it should be noted that replacement would displace more labour than renovation.

The Reality

So far, under normal circumstances, due to the strong opposition, the managements could not retrench workers. Of late, due to the continued crisis in the textile industry, the workers are losing the grip. This would urge the managements to seek ways and means to retrench the workers. This is what is happening in Ahmedabad Textile mills. The need of the hour is that efforts must be taken to minimise the possibility of labour retrenchment.

The Solution

It is not the intention of the author to say that adoption of new technology is always bad. In fact a continuous upgradation of technology is a must for survival. However, the point to be stressed is that as far as possible the managements should not adopt advanced technology only with a view to retrench the workers. Instead they should prefer appropriate technology. We may call it as intermediate technology. In fact, as per the research studies adoption of advanced technology like automatic looms without a change in product-mix will be uneconomical to our socio-economic conditions. What could be saved by way of reduction in labour cost, would be offset by the heavy initial investment cost. According to the calculations of South India Textile Research Association, a capital investment of upto Rs. 1.3 lakhs in the spinning mills would be worthwhile if such an investment helps to reduce one worker per shift assuming that the wage per worker is 10000 per year.²

Further, it has been observed by the Indian textile experts who visited ITMA 1983 fair at Milan that an indiscriminate adoption of advanced technology will not be appropriate to our socio-economic conditions. They have pointed out that developed countries who went with rapid speed of automation are now feeling the pinch. An advanced technology has become a high cost technology also.

Experts are of the view that lack of large scale

modernization is not the primary constraint for the growth of the textile industry, rather the problem is managerial. Studies by Ahmedabad Textile Research Association bring out that there exists a wide gap between the actual productivity and the achievable productivity even to the extent of 30% in many mills.³ Hence the managements must accord top priority in increasing the utilisation of the existing machinery rather than going in for large scale modernization.

The workers also have a responsibility to shoulder. They should accept the fact that technology upgradation is a necessary condition for the survival in a competitive industry. Whenever managements introduce new technology, they should not put up a blunt resistance. Instead, they should welcome new technology which will not displace workers on a large scale. It has been predicted that since the workers have learnt a bitter lesson in the Bombay Textile strike, they will not put up such a blunt resistance in the future.

The Government has a major role in solving the problem of labour displacement in Textile Industry. It has to discourage those mills which indiscriminately go in for advanced technology with a view to reduce the labour content. The Government can direct the financial institutions to conduct technical audits to decide the appropriateness of the new technology whenever the mills seek financial assistance from them.

Conclusion

In view of the increasing labour cost, in future, the mills will prefer new technology. The managements will be constrained to go in for advanced technology since it would involve heavy capital outlay, but if such high cost is economically justifiable, then advanced technology will find acceptance in India. The problem of labour displacement can be postponed for some more years if the managements accord top priority for utilising the existing machines to increase the productivity level.

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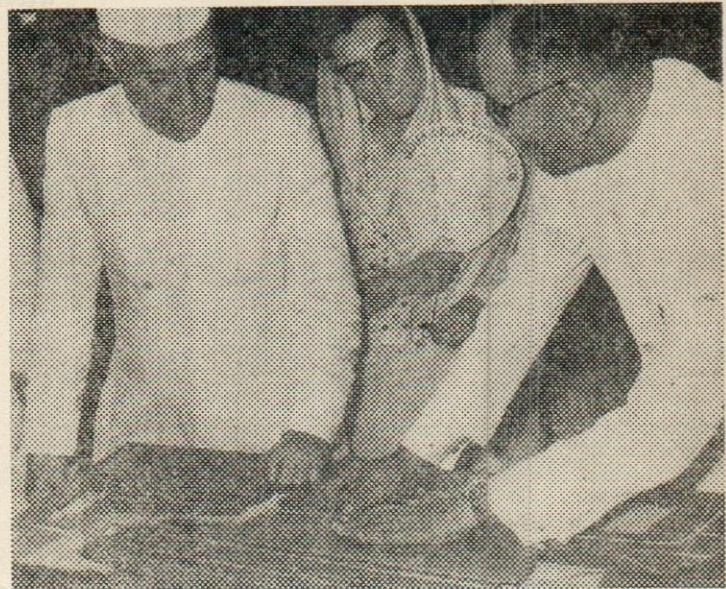
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Products	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
	(Last year of V Plan)	VI Plan				(April to Oct, 1984)
Lignite (Lakh Tonnes)	28.97	48.01	58.76	64.01	66.35	41.2
Power Generation Gross (MU)	2,370	3,175	3,391	3,633	3,909	2,369
Power Exported (MU)	1,768	2,454	2,686	3,073	3,027	1,816
Urea (Tonnes)	1,04,908	1,34,334	98,940	1,01,211	1,24,447	63,470
Coke (Tonnes)	42,946	1,19,411	1,88,419	1,72,111	1,73,603	1,15,146

Performance	1979-80	1980-81	1981-82	1982-83	1983-84	
	(Last year of V Plan)	VI Plan				
Profit Rs. in crores	0.50	17.06	37.92	47.44	62.97	
Internal Generation of funds Rs. in crores	14.85	30.54	56.65	76.47	85.54	
Capacity Utilisation (%)	44.60	Mine-I	73.90	90.40	98.50	102.10
		Thermal Power Station-I	69.40	92.90	99.30	112.20
Load Factor in Thermal Power Station-I (%)	44.95	60.40	64.51	72.91	74.17	

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Practical Inventory Control Models

B. BHOWMIK
S. C. JAIN

Inventory control function has assumed great significance in recent times due to credit squeeze and many other factors. This is more so in material intensive industries where the material accounts for more than 50% of the total cost of production. The article deals with development implementation of practical inventory control models which have been successfully used in paper mills.

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Introduction

Inventory means a stock of some kind of physical commodity having economic value. Thus, the term 'Inventory' includes stocks of raw materials, finished and semi-finished products, spare parts etc. The inventory is required to be maintained to meet the future demand. Whenever an item is needed, material management should be able to provide it economically. Hence, the inventory theory deals with the determination of optimum policy for procuring stock of materials to meet future demand. It attempts to strike a balance between the opposing costs involved in inventory problems.

Why Inventory Control

It is of common experience that the cost of all inputs are increasing every day. To keep the product competitive in the market, and at the same time make reasonable profit, the management of manufacturing organisation are left with a few options. Cost reduction is one of them. Since the material accounts for about 50% of the total cost of production in paper industry, serious attention has to be paid to this aspect of business management. It can be shown that a mere 5% reduction in material cost can increase the profitability by 25%. Inventory carrying cost is a part and parcel of material cost which is quite substantial. Scientific inventory control system can reduce the same.

In paper industry, a large varieties of materials,

are required. An integrated pulp and paper mill of 100 TPD capacity will be holding about 15000 items. Some of them are used in bulk, others in small quantities. Some are seasonal, others are not. A few are tailor made, many are available off the shelf. There are still a few items which are imported, others are indigenous. In addition, uncertainty of demand and supply, frequent price changes, obsolescence and substitution, and high cost associated with loss of production for want of material necessitate the use of systematic methods and scientific techniques to manage the inventory. The capital tied-up in inventory does not add value to the product but cost. Hence it should be reduced. Moreover, with the credit squeeze imposed by financial institutions, the industries are forced to release the working capital from the excess inventory through scientific inventory control system.

Relevant Costs

A number of cost factors are associated with any inventory problem. These factors are to be identified before any analytical solution is attempted. Though the majority of the inventory problems have similar costs, different inventory problems may have different types of cost which should be considered. Of course, many a time some of the cost factors are so insignificant that they may be neglected for practical purposes. Even, the accuracy of cost estimates does not affect the solution of the problem appreciably. Some of the major costs associated with the inventory problems are discussed below :

Procurement Cost

This cost is basically the cost of procuring an item. It does not include the cost of the item itself. It is recognised that procurement cost, which is an overhead cost varies from item to item and from organisation to organisation. It also varies with the size of the order and type of item such as imported items, indigenous items, etc. But for practical study, it is reasonable to consider single procurement cost as far as possible. When a large number of items are considered, the variations in procurement cost from item to item tends to cancel out and leaves the solution unaffected.

Inventory Carrying Cost

This includes the costs of a number of components

viz., cost of the capital tied up in inventory, storage cost, deterioration cost, insurance cost, etc. Though the inventory carrying cost varies from item to item, it is advisable to assume a uniform carrying cost as a percentage of the unit cost of the item.

Stock-out Cost

This is the cost associated with an item not being available when required. Depending on the criticality of the item, the stock-out may even lead to loss of production. Some time it may even lead to deterioration in quality of the product or may effect the plant and equipments. Due to stock-out, sometime the management is forced to make urgent purchases which are generally costly. Under all these circumstances, it is very difficult to estimate the stock-out cost for an item. As it is extremely difficult to assess the stock-out cost in many practical situations, it is desirable to assume an acceptable risk of stock-out or a desired service level as a factor against over stocking.

The other type of cost which has relevance in inventory control is the 'systemic cost'. It takes care of variation in the cost involved in data-processing, implementation and follow-up of various models used. It also takes care of the potential savings which might result from the amalgamation of orders for several items. Though there is no suitable mathematical formulation to include the systemic cost, practicing analysts consider it while designing and implementing inventory control models.

Models

Inventory models are the representation of inventory problems in graphical or analogous form for solution. Such solutions refer to determination of decision variables by considering the various aspects of the problem simultaneously. In inventory problems, the decision variables are economic ordering quantity, safety stock, re-order level. In any industry there will be a large number of items most of which are different in nature and hence requiring individual treatment from inventory control point of view. But this is extremely costly and time consuming. On the other hand, use of single inventory model for all items is

easier and less time consuming but does not satisfy the different nature of items. Hence, a compromise is to be struck. Three models have been used in this study.

Model-I

In practical situations, neither the lead time nor the consumption is deterministic. It is also recognised that it is much more economical to allow a limited number of short stock-outs with less stock holding than absolute protection against stock-out with very high inventory.

Assuming that the lead times and consumption during lead time are normally distributed, Choudhury (1) proposed a model with a risk of stock-out in 'r' years is as follows :

$$OQ = \sqrt{\frac{2 C_p D}{C_i I} + (k_m - k_a) \frac{Dr}{24}}$$

$$SS = \frac{rn-2}{48} (k_m - k_a)$$

$$ROL = k_a + SS$$

where OQ = Economic Ordering Quantity

SS = Safety Stock

ROL = Re-Order level

D = Anticipated Annual Demand (Units)

C_p = Procurement Cost (Rs. per order)

C_i = Unit Price of item (Rs.)

I = Annual Inventory Carrying Cost (as percent of item cost)

r = Permissible risk of run-out, i.e., number of years in which one risk of run-out is permitted.

n = Number of Orders per year.

k_m = Normal maximum consumption during normal maximum lead time.

k_a = Average consumption during average lead time.

In this model, it is assumed that the replenishment rate is infinite, i.e., bulk supply takes place.

Model-II

For some items, it is observed that the material is not supplied at a time. Whatever quantity is ordered or contracted, material is despatched at a more or less regular rate. This leads to a production-inventory model as shown in Fig. I on page 74.

Assuming normal distribution for lead times and consumption during lead times, Model-I is modified as shown below :

$$OQ = \sqrt{\frac{D (2 C_p + \frac{C_i r}{24} k_m - k_a)}{C_i I \left(1 - \frac{da}{R}\right)}}$$

$$SS = \frac{rn-2}{48} (k_m - k_a)$$

$$ROL = k_a + SS$$

where da = Daily average consumption

R = Replenishment rate:

Others have the same notations as given in Model-I.

The above two models belong to perpetual reviewing system where stocks are continuously reviewed. As soon as the total stock (which includes both the physical stock and the quantity in transit) level reaches Re-Order Level (ROL), procurement action is taken for a fixed quantity equal to OQ.

In cases where the lead time is larger than the cyclic period (decided by the number of orders per year), replenishment action is taken at the cyclic period until the total stock level is raised to ROL. Hence, it is practically a mixed system where both perpetual reviewing and periodic reviewing systems are adopted. The model with lead time larger than cyclic period is shown in Fig. 2 wherein it can be seen that due to the presence of some quantities always in transit, the ROL is often more than the maximum physical stock (= SS+OQ). Depending on the variation in consumption and lead time, the physical stock may go above or below the ROL. The consecutive ordering points O₁, O₂, O₃, along with the supply S₁ and S₂ are also shown.

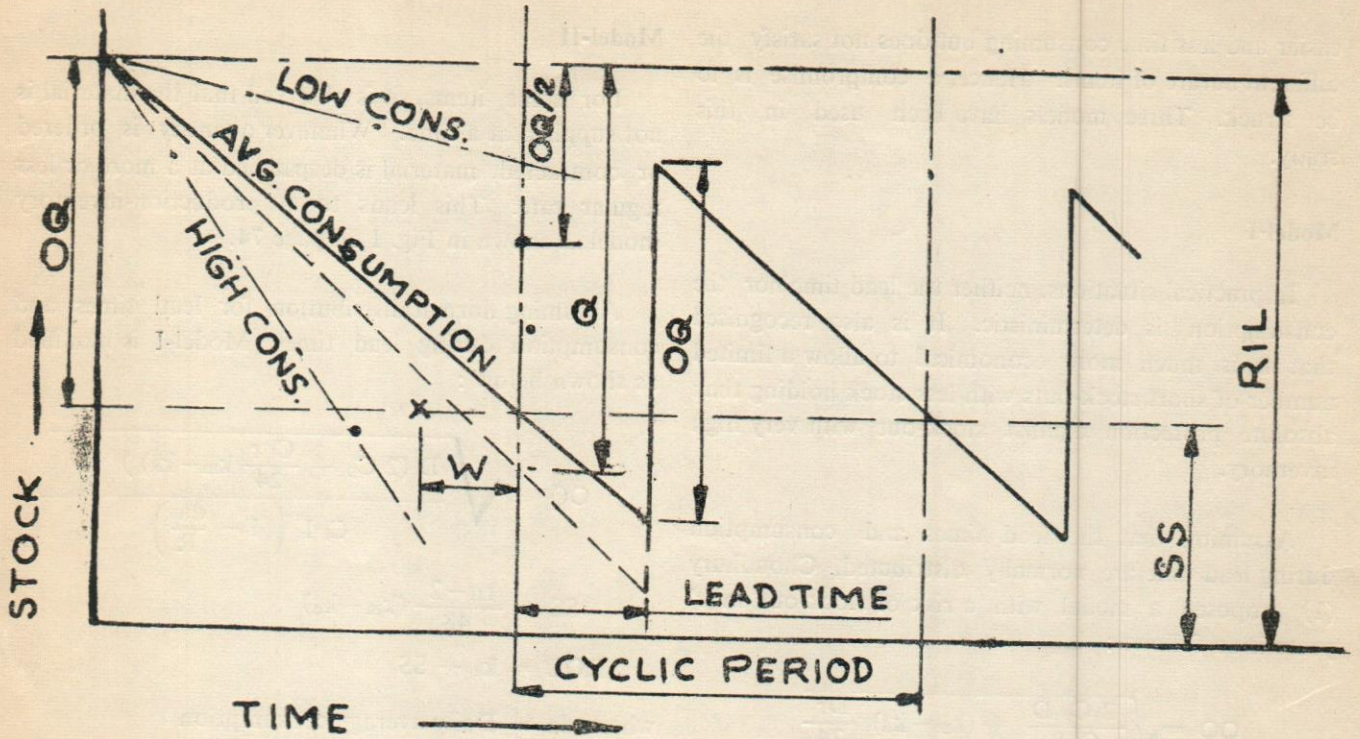


Fig. 1

Considering the systemic cost, these models are recommended for A-B Class of items only. **Model-III**

For C-Class of items, enough information are not generally recorded. Moreover, as they are numerous in number, it is much time consuming to analyse their demand or lead time distribution for inventory control purpose. Karl Pearson has developed a well known system to represent practical probability distribution on provided the first four moments about the mean are known. The more moments we know, the more we know about the distribution. If we do not know at least the first two moments, -mean and variance of distribution, we cannot do anything with our present state of knowledge. If these two are known, then Camp and Midall inequality can be used for continuous unimodal distribution. But in most practical cases, it is time consuming to examine whether the distribution is unimodal or not.

It is well-known that there may be an infinite number of probability distributions with the same average and variance. Hence no optimal inventory policy can be made with any specific distribution of

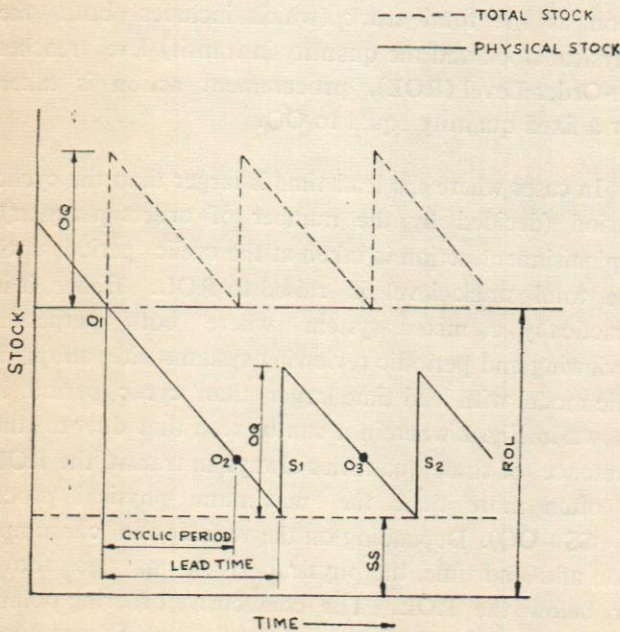


Fig. 2

known average and variance only. Also owing to a large number of items in C-class having different possible distributions, it is required to have a probability statement which will be true for every specific probability distribution having the same average and variance. The answer is given by Techebycheff. The Techebycheff's inequality states that for any probability distribution whatsoever there is a simple relationship expressing the probability that the given variable will differ from its mean by some multiple of its standard deviation. Expressed mathematically :

$$P (| Y - \bar{Z} | \geq KS) \leq \frac{1}{K^2} \text{ for } K > 0$$

- where $| Y - \bar{Z} |$ = Absolute value of difference
- S = Standard deviation
- \bar{Z} = Mean
- K = A factor determined on the basis of acceptable risk of service level.

Though both demand and lead times are probabilistic, the demand has been assumed to be constant for the purpose of analysis in this model and distribution-free analysis (Tchebycheff's inequality) is applied for lead time distribution.

Safety stock may thus be calculated as—

$$SS = d_a T_m \quad \text{when } T_m \leq (T_a + KS) \text{ or}$$

$$= d_a Y \quad \text{when } T_m > (T_a + KS)$$

- where $Y = T_a + KS$
- T_a = Average lead time
- T_m = Maximum lead time

It has been observed that many of the lead times distributions for C-class items approaches Poisson's distribution. However, assuming Poisson's distribution for lead times, standard deviation is taken as the square root of average lead time. The factor K is taken as 5 which gives 98% protection against stock-out due to higher lead time.

The economic ordering quantity (OQ) is calculated by using Wilson's formula—

$$OQ = \sqrt{\frac{2 C_p D}{C_i I}}$$

Replenished Inventory Level (RIL) is defined as a level which is desired to be replenished every time an order is placed. This is calculated as—

$$RIL = SS + OQ$$

The model is graphically represented in Fig. 3

According to this model, stock is reviewed at the end of each cycle and procurement action is taken for the quantity determined by—

$$OQ = RIL - \text{Stock}$$

If the demand is uniform as predicted, then the stock at the time of cyclic review will be equal to SS. But, in practice, there will be some variation in the demand from time to time and cycle to cycle. To take care of such variations, two limits have been fixed. One sets the limit of higher consumption by 25% and the other to lower consumption by 50%. The limit of higher consumption is termed as warning Period 'W'.

If the consumption is slightly higher (within the set limit) then the anticipated average, the procurement action will be taken only at the end of cyclic period for the Balance Quantity where—

$$\text{Balance Quantity (Q)} = RIL - \text{Stock}$$

Hence, it is a periodic reviewing system with fixed cycle and varying ordering quantity.

But if the consumption is appreciably higher (above the set limit) to reach the recommended level (SS) earlier to the warning period 'W' the replenishment action will be taken for the Ordering Quantity (OQ) without waiting for the cyclic period to come.

Items having different number of orders per year will have different 'W'. The values of 'W' for different 'n' are given below :

No. of Orders per Year (n)	Warning Period 'W' (Weeks)
4	1½
3	2
2	3
1	6
½	12

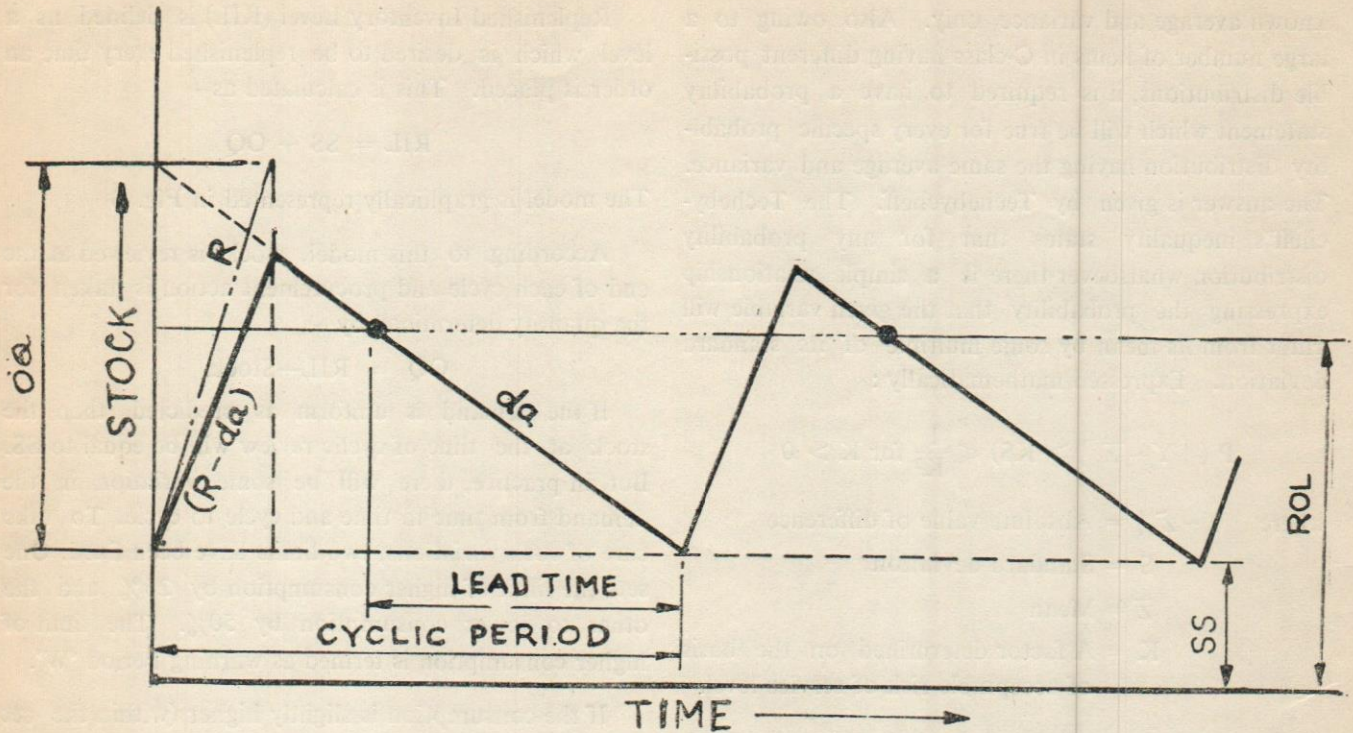


Fig. 3

Similarly, if the consumption during the cycle is less than half of the Ordering Quantity (OQ), the procurement action will not be initiated until the next cyclic period or the recommended level (SS) is reached. But if the consumption is slightly less (within the set limit) then the anticipated average, procurement action is taken for the Balance Quantity. By this, the variation in consumption is also taken care of to a large extent though this has increased the risk of run-out. But it is very convenient to work out and implement.

From the above, it may be noticed that it is also a combination of perpetual reviewing and periodic reviewing system.

Results

The above inventory control models have been tested and implemented in two big paper mills for all A—B class and major groups of C—class items. The fibrous raw materials have not been included in the study for special reasons. The necessary systems have been designed for introduction of scientific inventory control models. The system has been basically a

manual one with provision for computerization in future.

The effectiveness of inventory management is generally assessed by the 'inventory turn-over' ratio or its reciprocal i. e. inventory/consumption ratio in different years. The lower is the inventory/consumption ratio, the better is the inventory control. The quantum of inventory reduction can then easily be found out. The results of implementation of inventory control system have been spectacular as can be seen from Table-1.

Table I

Mill	Inventory/Consumption (%)					Reduction of Inventory (%)
	Year of Implementation					
	1st	2nd	3rd	4th	5th	
Mill-A	55.20	48.61	41.96	39.35	33.32	39.59
Mill-B	51.48	35.12				31.78

From the table, it is observed that the inventory/consumption ratio (reciprocal of inventory turn over ratio) has continuously decreased from 55.20% to 33.32% for Mill-A within a span of five years. This is equivalent to a reduction of inventory by 39.59% on the fifth year compared to the inventory holding on the first year of implementation. Similarly, the inventory/consumption ratio has decreased from 51.48% to 35.12% for Mill-B within a span of two years which is equivalent to a reduction in inventory by 31.78%.

It may be mentioned here that the inventory control system has been introduced for the groups of items one after the other for Mill-A, where as it has been introduced for Mill-B almost simultaneously. With continuous follow-up and introduction of EDP, the inventory would decrease further.

Other benefits of introduction of inventory control system have been the improved availability, less work load, smooth and crisis free functioning, lower consumption etc.

Conclusion

Inventory management is a part of the overall management system. Hence, its effectiveness depends to a large extent on the working of the total management system. Various sub-systems of the organisation have to be matched with the inventory control system for desired result. Also, the inventory control system

should be designed taking into account the peculiarities of different sub-systems of the organisation.

Though the models have been successfully implemented, further refinements are necessary. Such modifications and new developments should be done to take care of the peculiarities of the situations in different organisations. Moreover, the model for the same item also needs review and refinement with the passage of time for best result. Hence, 'reviewing' is the watch-word in inventory management.

Acknowledgement

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New Patterns in Employment

DR. LEONCE BEKEMANS

The recognition of the complexity of the causes of unemployment is important, for it influences the kind of solutions and policy measures suggested. Historically, the market economies of the West have relied on the management of aggregate demand to regulate economic activity and thus the level of employment. However, the increasing importance of structural elements in unemployment has led to attention being focussed on alternative solutions. This paper focusses on the same.

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The causes of unemployment have been continuously debated ever since the mid-1970s. Most commentators now recognise both cyclical and structural causes of unemployment. Moreover, discussion is no longer confined to economic issues but includes also changing social values.

There are many alternative solutions which have already been attempted by EEC-countries. These include attempts to reduce the size of the competitive labour force (e. g. early retirement schemes, prolonging compulsory education), attempts to increase work sharing (e. g. changes in the organisation of working time, part-time work, etc.) and job creation programmes.¹

Apart from these general policies to combat unemployment, a number of measures have also been directed to specific groups of workers particularly badly affected by unemployment, such as the young, the unskilled and minority groups. Some of these measures overlap with those directed towards the general workforce, but others aim to improve the competitiveness of disadvantaged groups in the labour market. These measures include vocational training, retraining, work experience programmes.

By job creation can be meant virtually any attempt, whether by private or public sponsors, to increase the

1. Balkenbol, B., Direct Job Creation in Industrial Countries, in *International Labour Review*, Vol. 120, No. 4, 1981.

In the scheme's present form, the Labour Administration promotes measures through subsidies and loans to public and private bodies to create additional jobs, as well as subsidising the wage costs of older workers. While the subsidy generally amounts to between 60% and 80% of earnings, 100% may be paid for projects of particular importance to the labour market.

The administrative structure is highly decentralised. The local labour office mediates between the needs of the labour market and the project sponsors in the different areas. The scheme originally concentrated upon output but is now more concerned with participants.

France

The scheme for the creation of socially useful employment (*Creation d'Emploi d'Utilite Collective*) introduced in 1979 can be classified as a job creation measure. The aim is to satisfy community needs through local self-help organisations. It is an experimental scheme in which small groups provide 'new' goods and services (e.g. forestry projects, educational/cultural activities, small-scale crafts, community work, environmental protection and research, etc.). These organisations receive a rather low government wage subsidy per unemployed person, with one year being the maximum period of employment. Young unemployed people are the main beneficiaries.

A more ambitious programme (*Le Programm d'aide a la creation d'emplois d'initiative locale*) was set up in 1981. Its objective is to create permanent employment in new local activities and services with an emphasis on social innovation. State subsidies amounting to FF 36.000 for each full-time job created are given for one year. This financial support is not renewable. Certain private organisations (associations, cooperatives...) as well as a number of public organisations (regional and local authorities...) benefit from this programme. In 1982 the programme created more than 10.000 jobs, mainly in the socio-cultural sector.

Greece

The creation of employment opportunities in Greece is an essential component of the overall governmental

programme directed towards change. Direct job creation measures are as follows :

In 1982 a programme was launched to create 15.000 new jobs for people under 25 and 5.000 new jobs for people aged 25-29. Sponsors are subsidised for up to 6 months; they receive from 20% to 40% of the wage rate of an unskilled worker. The programme is administered by the manpower organisation (OAED).

Under the same law a programme was set up to create jobs for 10.000 unemployed building workers. This programme, also administered by the OAED, enables communities and municipalities to obtain between 20% and 40 % of the wages of unskilled building workers for a period of up to 6 months.

Ireland

In Ireland there are a number of programmes containing elements of job creation. The picture is complex, due to changes in government, as well as the variety of government departments and special committees.

The *Environmental Improvement Scheme* is run by the Department of the Environment. It was set up in 1977 to stimulate youth employment by enabling local authorities to set up projects of or recreational environmental value. These projects vary in length from five weeks to three months and require unskilled manual labour. During their temporary employment the participants are treated as local authority employees.

The *Temporary Grants Scheme for Youth Unemployment* was launched in 1977 and operated by the Department of Education. It is intended to provide young people who have not previously worked, or who have had unsatisfactory work experience, with an opportunity to experience the responsibilities and benefits available to them in permanent jobs. The sponsors are sport, youth and community organisations. Projects tend to involve the renovation or extension of club facilities, such as youth clubs, sports halls and community centres or playing fields. Legally the participants are employees of the sponsoring organisation. They are paid at local trade union rates.

The *Employment Incentive Scheme* (EIS) has been regularly extended since its introduction in 1977. The latest improvements in the EIS came into effect at the end of March 1982. The aim of this scheme is to generate employment by paying wage subsidies or premiums to employers who give permanent full-time jobs to experienced workers who are unemployed or to young persons with no previous work experience. The scheme applies to the manufacturing industry, building and construction, agriculture and fishing, hotels, catering and certain service industries. Each unemployed adult recruited must have been on the unemployment register for at least four weeks preceding appointment, while each young person under 25 with no work experience must be registered with the National Manpower Service. Experienced workers receive £30 per week, while young people with no experience receive £20.

The *Youth Employment Agency* was established in 1982 to integrate and extend existing youth employment measures. Some 40,000 young people unemployed for at least six months qualify for places on existing or alternative youth employment or training schemes. The agency is designed to ensure that no young person is left without some form of training or work after completing their education. The agency is also meant to develop programmes for potential young entrepreneurs and assist voluntary social and community organisations.

Italy

In Italy, the instrument of labour market policy which has elements of job creation was introduced in 1977 (Law 285: *Measures for Youth Employment*). There are two types of programmes seeking to provide socially relevant services and activities: *Fixed-Term Contracts with Public Institutions*. Young unemployed people aged 15-29 on a special placement list can enter fixed-term contracts with public institutions. Socially-useful projects range from restoration work to reforestation, from child-care to helping old people, from teaching to library and museum work. Sponsors (state ministries or their agencies, regional and communal authorities) carry full responsibility for the programme and receive in return a subsidy from the Treasury.

Cooperatives Aiming at the Provision of Socially Valuable Goods and Services Unemployed people on the special placement list can form or join a cooperative providing socially valuable goods and services. Examples of such activities are: protection and maintenance of culturally valuable buildings, forestry, soil conservation, surveying uncultivated land, updating property registers, provision of tourist facilities etc. These youth cooperatives receive a grant of Lire 50,000 monthly per participant for a maximum of one year. Most of these cooperatives enter into a contract with some public institution to perform a specific task.

Luxembourg

Luxembourg has two schemes which can be classified as job creation schemes: The *Extraordinary Works of General Interest* scheme was introduced in 1975. The main aim of this scheme is the productive employment of people in danger of becoming unemployed due to a temporary sectoral crisis. It is thus clearly meant to deal with short-term cyclical unemployment. Contracts to carry out these works are concluded between the government and the firm in question.

The *Department of Temporary Helpers* scheme was introduced in 1978. The purpose is to facilitate the entry of young people (registered unemployed under 25) into the normal labour market. Under this programme, young unemployed people can be directed to work of public, social or cultural interest. Government, communal authorities and other non-profit organisations, are responsible both for originating and implementing these projects.

The Netherlands

In the Netherlands there are a number of labour market policy measures which can be classified as job creation measures:

Temporary Jobs Scheme (Tijdelijke Arbeidsplaatsen regeling, 1977). This is aimed specifically at unemployed people, who are difficult to place, but who are able to perform normal work. The work in this scheme is meant to improve the employability of the unemployed. Temporary jobs can be provided by government departments and subsidised institutions

social and labour market measures. To what extent are the schemes linked to educational and occupational needs?

General questions should also be asked about the influence of job creation programmes on the attitudes of participants. The main emphasis in labour market policy seems now to be to ensure employability of the labour force through work experience. The social consequences of job creation schemes should therefore be analysed.

4. *Job creation—an assessment*

So much has already been said and re-said about the present unemployment crisis and the possible policy measures, such as job creation schemes, to alleviate and solve existing problems. There seems to be a lack of common understanding between scientists and decision-makers concerning the future patterns of work and society. On the one hand, decision-makers are under mounting pressure to come up with policy proposals which include ready-made, short-term solutions. On the other hand, politicians are increasingly dependent on experts who tend to be interested in progress being made above all in their own areas of specialisation.

It is my opinion that the traditional instruments and arguments are no longer appropriate in a society in which new values are emerging. When considering future developments we must thus look not only for new paths, i.e. new answers to old questions, but also for new goals, i.e. new answers to new questions. What is true for society as a whole is certainly relevant for employment patterns. In the following paragraphs I indicate possible avenues for change in job creation schemes. These have some relevance to the realisation of future work patterns.

The main underlying consideration is related to the conceptual framework in which work in general and job creation in particular is defined. I said in the beginning of the paper that the original aims of job creation schemes were to provide temporary employment to unemployed people, to increase the employability of the participants and to produce socially valuable goals or services. Present schemes often

diverge from these original aims.

In the mid-1970s temporary measures were introduced to deal with the problem that was believed to be temporary but which has clearly turned out to be something else. Although temporary measures will still have to play a role in labour market policies, a distinction must be made between the short-term and long-term nature of the measures. We are faced with a situation which requires a new policy-mix to bridge the gap between unemployment and job creation. Job creation should therefore be seen as a labour market tool which must be part of a comprehensive economic and social policy and an instrument providing some flexibility for restructuring employment patterns in preparation for the future.

This whole discussion about the role of job creation is linked to the very definition of work. Our society values human beings according to their paid work. This relationship is now changing. Will income still be related to work in the future? Some people within our society are seeking an alternative lifestyle whose perception of both work and income differ from that of their contemporaries and of previous generations. Traditional values are under threat and employment is only one manifestation of this.

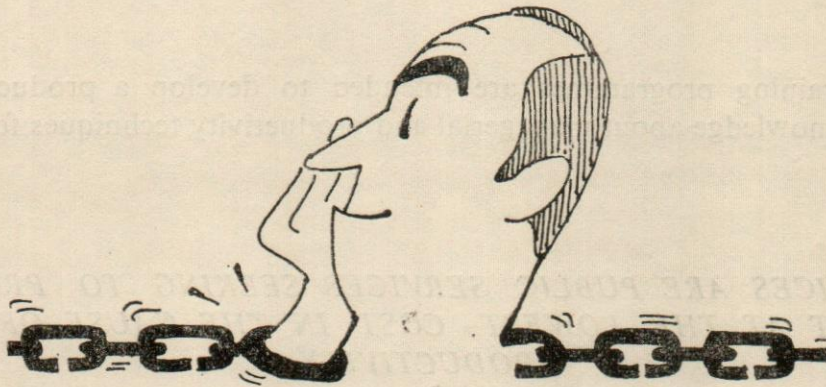
New values and new needs are emerging, and the traditional structure is not properly equipped to respond to the changes. We face a crisis in our institution and policy instruments. Thus the tools available have to be changed. Our task is then to try to determine, or at least imagine, the emerging roles for which job creation programmes should be preparing people. More precisely job creation schemes can contribute to solving long-term unemployment by meeting the unfulfilled needs in our society.

Because of the emergence of new needs, solutions should not be sought only through the existing market economy nor through the public sector. There is a whole area of social utility to be developed in which useful work can be organised. Full employment as it is traditionally defined will not return in the foreseeable future. We should therefore look into the more long-term responses which various countries evolved in response to their specific economic

situations, rather than opting only for short-term solutions.

In short, there are three levels at which the value of job creation programmes should be considered : the macro-economic level which analyses the constraints and possibilities of job creation, the specific level, seeing job creation simply as a means of putting the un-

employed to work, and the more general level situating job creation in the wider sphere of changing patterns in employment. These patterns are influenced by the new aspects of demand such as the quality of life, increased interaction between East and West Europe and Third World development. It is along these lines that the role of job creation schemes should be interpreted.



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Managing Productivity Improvement

B. S. CHETTY

The welfare of individual organisations and even of national economies is regarded as a dependent on their comparative productivity. This makes us to strive for higher productivity in all the spheres of our efforts. The main purpose of this article is to identify the major elements involved in any productivity improvement program and how to manage them.

B.S. Chetty is Management Consultant, Administrative Staff College of India, Bella Vista, Hyderabad-500 475.

The productivity advance is the main source of raising real compensation of labour and the level of standard of living. It can be an effective anti-inflationary measure, but, it can provide a cushion to increasing wage rates and the prices of other inputs. The upward trend in productivity increases the competitive edge of indigenous products in international markets, higher profits at the individual company level, and resulting in overall increase in the GNP of countries.

The productivity concept has its roots in 'productivity function'. The volume of output of any organisation depends on the quantities of labour and other inputs employed in production, and on the productive utilisation of these inputs. Simply stated, the problem is how to use the available resources to the utmost and to the best advantage.

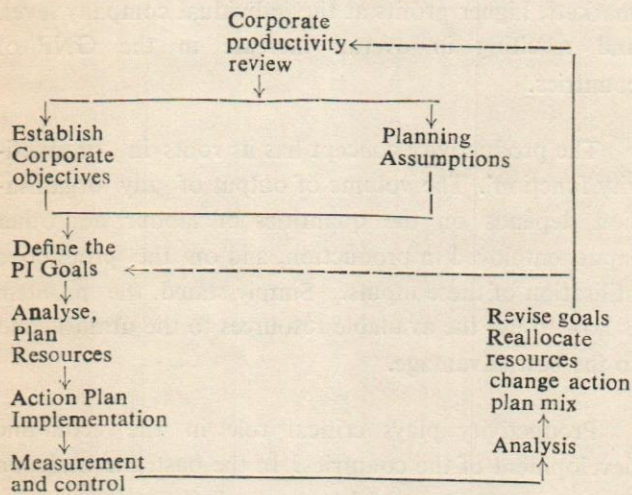
Productivity plays critical role in the economic development of the countries. In the past, the tradition was to patronise the decentralised economy (cottage, tiny industries) and discourage better methods of production, lest they lead to increase in unemployment. Agreed, given the background of India, nothing should be done that causes more unemployment but practicing the old inefficient methods would keep the economy at a standstill.

Consequent to rising prices, unemployment, and international competition, productivity advance has become a major objective at the organisation as well as at national levels. Many companies have initiated

productivity improvement (PI) programs to increase the productive utilisation of their resources. The basic elements involved in the productivity improvement program are :

- Support of top management
- Role of Labour
- Organisational arrangements
- Productivity measurement
- Evaluation and continuation

Our consulting experience has produced convincing evidence to show that the subject should not be planning for productivity improvement but management of productivity improvement. The number one task of managing a productivity improvement is to structure the appropriate involvement of the right personnel to perform the right tasks in an agreed upon sequence. The flow chart below shows the process involved in managing productivity improvement in any organisation.



Support of Top Management :—The commitment on the part of top management is the key to introduce a productivity improvement program. The employees involved would show more interest in implementing the program effectively if they are convinced of the intentions of the top management. It is possible to make the program a success only after the Engineers and the workers at the operational level agree to the program.

The support of the top management can be express-

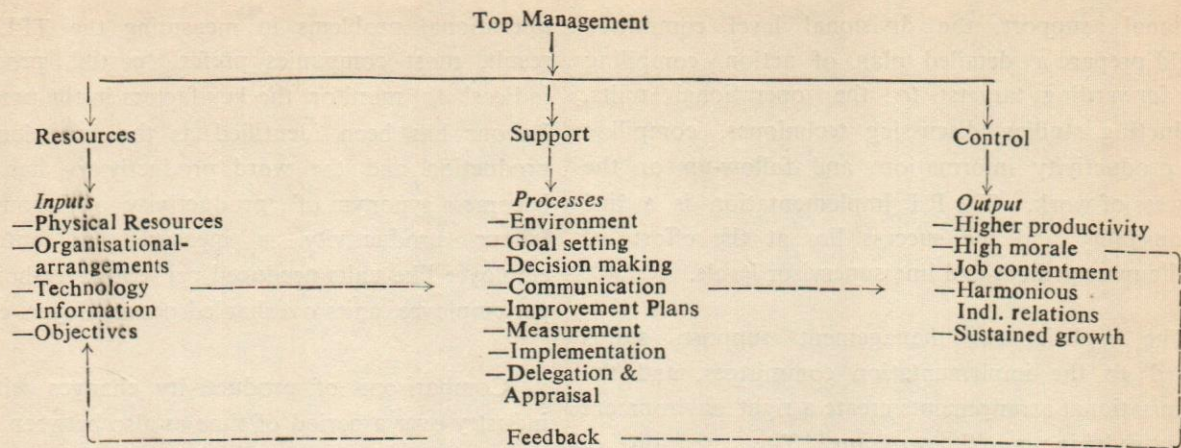
ed in so many ways. This includes issue of policy statements in support of introducing a program, providing organisational arrangements, making productivity factors included in the short-term plant of the company, regular monitoring of results and sustained support for the program. The top management should finalise, in consultation with the operations level management, the productivity goals, detailed PI programs and information feedback.

The role of the top management in productivity improvement is shown diagrammatically on page 91.

Role of Labour :—The influential factors, such as working conditions, corporate labour policies and industrial environment are generally overlooked in evaluating the role of labour in productivity improvement. Bringing in the participation of labour has several advantages. The managers and engineers should accept that good suggestions do come from the labour and to sustain this, the top management should initiate steps for the long-term welfare of company's employees.

Wherever possible, discussion in free atmosphere have to be conducted between the various wings involved in PI Program and also between the management and labour to create mutual trust and co-operation towards effective implementation. The PI program is often seen as another trick being employed by the management to persuade employees for higher production. The organisation has to review the existing lines of communication to dispel any rumours; opening more channels of communication would help the management and labour to understand the problems, such as job security, sharing of benefits, and growth opportunities.

Introducing productivity concepts in the minds of employees through training courses would enable the employees to work more efficiently, reducing working tensions and result in increase of output with the same or less inputs. The commitment of labour can be achieved through committees at different levels of the organisation, selected by workers and managements, and the committees can be entrusted with the advising responsibility for scheduling, implementing, and guiding the program.



The practice of soliciting suggestions from the workers is common in our industries. The company should create an environment for the workers by using the existing channels of communication to come forward voluntarily with suggestions on productivity improvement. Added to these, the workers can identify the operational problems at shop-floor level and suggest remedial measures to solve them at budding stage itself. A monetary reward system and also commendations for the successful employee suggestions have to be introduced to achieve the active participation of employees. Although money is not the only stimulation, it does provide a yardstick of compensation or achievement. The value of the reward should vary on the significance of suggestions and savings the company can make in the longrun. Some companies feel that an average of one suggestion per year is a good level of participation.

A practice that is gaining prominence in the country is rotating the work force so that workers get trained to handle several jobs. This system of operation is an effective method to increase the productivity rate and also helpful to our industries where high absenteeism is very common. Unfortunately, most of the unions oppose this type of practice of multi-skill development and many employees strongly resent this method even with near guarantee of life-long employment. Nevertheless, the prospects of such a practice for improving the productivity are clear.

The productivity programs should be brought in within the framework of collective bargaining agree-

ments between the management and workers. This effort recognises the concerns of employees about the implications of PI programs, and make them to see this as another effort to increase the company's financial standing, growth rate of the company, and lower prices for the consumers.

Organisational Arrangements :— The next important stage in any productivity improvement program, once the top management support is explicitly stated and the favourable climate is created in the organisation, is to consider an organisational arrangement to manage the program. The selection of an organisational support solely depends upon the size, type, and nature of the organisation, its operating parameters, spread of operations, and the culture. The status accorded to the implementation team by the top management reflects the degree of involvement for implementation. It is observed that the most effective method is to handover the responsibility to someone who is go-between top management and the workers for implementing the program effectively.

The organisational requirement for the program would consist of : one productivity co-ordinator, one committee at each of corporate, divisional, and operational levels. The divisional and operational level committee should include representatives from sales, production, and services departments, and also Labour Unions. Whereas the corporate level committee should formulate the productivity goals, refine PI programs, monitor and evaluate the program effectiveness and provide the orga-

nisational support, the divisional level committee should prepare a detailed plan of action, compiling and forwarding targets to the operational units, conducting studies, discussing techniques, compiling the productivity information, and follow-up on the progress of work. The P I implementation is a line responsibility and the success lies at the effort of middle management and line supervisor levels.

The explicit top management support, status accord to the implementation committees, and the organisational arrangements create a right environment for introducing a PI program. The creation of favourable climate is the key element to an effective effort. By bringing the productivity improvement activity into total management process, the responsibility will be shared by everyone—management and workers alike.

The awareness among all the levels of employees can be created through systematic training and appreciation programmes. The educational programmes on productivity should include topics like concepts, techniques, implementation, evaluation, and the contribution to the organisational growth. Appreciation program of few days duration has to be conducted for the senior and middle level managers, and supervisors constitute pivotal segment of PI implementation force and have to be trained on tailor-made productivity programs, these personnel are in a position to educate, arouse interest in and create climate towards fostering higher productivity.

Productivity Measurement :— The generation of information is the key element in any program and it provides an opportunity for the company to measure the utilisation of its limited resources. In simple terms, the productivity may be defined as the ratio between the production of a given commodity and the corresponding input factors, both measured by volume. The input factors include labour, capital, material, power, etc, and one or more factors may be considered for the purpose of evaluation.

By using all the inputs in measurement, the emphasis will be on all the factors of production and this type of measurement is known as 'total productivity index, (TPI). There are some conceptual and

operational problems in measuring the TPI. As a result, most companies prefer 'partial productivity indices' to monitor the key factors in the production. Labour has been identified as the key element in production and the word productivity has almost become a synonym of 'productivity of labour'. The labour productivity is measured as output per employee like units produced per employee-hour, sales per employee, units overhauled per employee, etc.

Comparisons of productivity changes within an industry over a period of time as also between two or more industries reveal various aspects regarding technical, financial, and managerial factors of the companies. Finally, at the divisional or plant level, such studies indicate the 'managerial effectiveness' in the individual division or plant under the same management. The National Productivity Council, recognising the need of conducting such studies on productivity trends in major industries of the country, has undertaken a project to study on a continuing basis and published its findings (Refer to NPC Publications). Every organisation must evolve its productivity measures depending upon the nature and complexity of its business. Irrespective of the method used, the productivity must be measured if it has to be improved.

The key to the success of a PI program lies in setting realistic, achievable goals within the framework of the organisational constraints and culture. Too high or too low goals can have negative effects on performance. The incorporation of productivity goals in the overall planning system of the company is a must. It is possible to integrate the organisation's objectives with productivity goals as done in the case of MBO. By doing this, the balance of company's objectives that are concerned with productivity and individual's needs can be achieved. Some of the goals are : reducing the overtime bill, optimising the fuel consumption, avoiding rework and reducing the rejection rate.

Once the company identifies its productivity goals, the next step is to develop suitable PI programs. A wide variety of techniques are available for applying and widening the scope for improving productivity.

Some of the techniques which can be applied in varying degrees are : work simplification, incentive schemes, day-to-day scheduling, upgunning of equipment, value engineering, O & M, Job redesign and enlargement, productivity circles, autonomous work groups zero based budgeting. To achieve the desired result, no single technique will be applied but a combination has to be employed to meet the needs of the organisation. Since several difficulties arise in the development of precise measures, benchmark standards can be developed which are simple, easy to explain and can be administered in the present set up.

Evaluation and Continuation :— The success of any program depends on the implementation efforts. The efforts have to be supported by commitment to provide resources as required and a detailed plan of action. During the implementation stage, delays can occur due to lack of guidance, resistance from operational levels, and some parts of the program may not be appreciated. The successful implementation program includes commitment on the part of top management to provide the resources and continuous support, trust and co-operation at all levels of the organisation and periodical follow-up of the program.

If the top management could depend upon flawless execution of plans by a perfectly balanced organisation, there would be no need for control. But plans and operations rarely remain on course and control is needed to follow-up efforts. Periodical reviews of the program should be presented in the form of reports. These reports have the advantage of providing a permanent record, giving detail on the actual performance with the productivity goals, subject to periodic review by the top management and committees.

The primary purpose of evaluation is to identify the areas of bottlenecks in achieving the standards of performance. If the constraints are not within the control of the organisation, the productivity plans may be altered, the techniques employed can be changed, and the productivity goals have to be redefined. It is important to note that evaluation is the action that

closes the loop in the productivity improvement cycle.

By taking the necessary steps to ensure the participation of employee at all levels, the continuous involvement has to be pursued in PI programs. Any number of PI programs do not produce meaningful results without mutual trust and co-operation between management and labour. Let us hope that the parties involved create an atmosphere of understanding to raise the level of productivity in organisations with full determination and simultaneous efforts to advance industrial harmony and growth in our country.

In conclusion, it must be emphasised that installation of PI program is not the end of the activity but a beginning of a long-way to go in utilising the opportunities presented with the enormous technological progress all around us.

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EXECUTIVE READINGS

**Production Systems : Planning
Analysis and Control**

James & Riggs, Prof. and Head of the
Dept. of Industrial & General Engg.
Oregon State University, U.S.A.

Wiley Eastern Ltd.
4835/24 Ansari Road, Darya Ganj, New
Delhi-110002 January, 1984
649

Mr. S.N. Nandi
Director
NPC, HQ, New Delhi.

The book under review deals with production system which has been defined by the author as 'The design process by which the elements are transformed into useful products'. It has analysed various elements of the above mentioned system mainly with a view to explain their own characteristics as well as inter-relationship with one another.

The book has conceptually structured related subjects under planning—analysis—control' sequence. Though the position of the analysis in the sequence could be

aptly commented by the readers, the author seems to have been aware of this controversy and so he has rightly admitted it by stating 'it is more important to relate the quantitative and qualitative concepts'. On this very point, the author definitely has succeeded. He has done it quite in a lucid manner. In fact, if any of the serious minded students, practitioners or managers, likes to have a quick glance of most of the recent techniques in production management and this book serves an ideal purpose. Diagrammatic representations of most of the concepts have added a great value to this book. Some of the case examples given at the end of chapters as a part of 'exercises and problems' do illustrate effectively various points outlined in the concerned chapters.

All the chapters in 'Planning' section have beautifully explained various quantitative techniques especially on forecasting, economic analysis, resources allocation and scheduling. The author has also hinted at the recent trend in development of these techniques. "Cause

and Effect" diagram based method of problem identification speaks for the authors' sincere attempt to make the readers analyse the situation objectively and aware of causal inter-dependencies.

In the 'control' section, the author has taken really great pains to explain IRP models, sampling plans, etc. in reasonable details with full of sketches.

If the author is thought of highly meticulous in 'planning' phase, readers may feel otherwise in other two sections—Analysis and Control especially in chapters on human factors, work environment, maintenance and quality assurance. Many of the important topics like applied techniques of behavioural science, ergonomics, quality organisation and management, preventive and predictive maintenance aspects could have been dealt with in little more details and with more illustrations.

As mentioned earlier, conceptual understanding between the various subjects has been the major concern for the given sequence in the book. How practically various elements of

production system inter-act with one another has not been elaborated and may be, the author has not intended to do so. But discussion on various kinds of interaction could have greatly enhanced value of this book especially to practitioners. However, this addition will, no doubt be a welcome current text book to the students of production management. Along with the author's Wiley Eastern's attempt to make this valuable book available in paper back edition with clear printing and sufficient margin in pages is definitely praiseworthy.

Case Studies in Indian Administration
Ed : Mr. Jaideep Singh

Published by
Indian Institute of Public Administration
New Delhi
Edition : Feb. 1984
Price : Rs. 100/—£ 15.00 \$ 30.00
PP : 206

Reviewed by
Dr. (MS) Mani K. Madala
Dy. Director
National Productivity Council, New Delhi.

Undoubtedly IIPA has been one of the pioneers in case studies, which have an enormous potential for facilitating the advancement of teaching, for they serve as a rich source of ideas for the people and promote a deeper and wider understanding of the functioning of administration in its environmental and institutional framework. The present volume is the seventh in the series and focusses on the problems

of Indian administration and behavioural skills required by the administration.

The first of the seven cases is by Shri K.C. Chauhan and focusses on the problems in the implementation of the Land ceiling act. Lacunae in legislation cause problems in judicial validation. When people who are divorced from implementation function, legislate without keeping in view, the problems of implementation difficulties arise. It is therefore necessary to train them to make them empathetic.

The second case by Shri H.M. Singh focusses on incentives to employees of a state transport undertaking. The experience so far has been that only those incentive schemes succeed, where performance is evaluated on factors that are controllable by workers, the benefits accrue immediately after the performance (day to day basis) and the calculation of incentives is not too complex for the workers. It has also been seen that it is desirable to build competition among holistic groups—composed of say 'Driver and Conductor'—where social contact and mutual help can improve the performance. The case attempts to bring out the disadvantages of adhocism and not having holistic perspective, but however narrates the facts in a dry and mechanistic manner, leaving the task of bringing out the subtle themes to the discussion leader. Shri K.C.S. Acharya, in the third case, throws light on the problems arising in the educational institutions, with the entry of politics. Acharya narrates the events well and follows it up by pointed

questions which can help discuss case, in an incisive manner. The case makes a good reading about the role of the politicians in creating groupism on the campus by exploiting casteism, resulting in unruly student behaviour and the role that the administrators have to play to save the law and order. The case does not dwell on what role the administrators can play to prevent such a situation from arising.

That the administrator who is firm who observes the rules and regulations himself and expects others to do the same, who does not take to adhocism can win the respect of the people and the politicians is brought out by Mr. R. Narayanaswami in the case 'location of pelletisation plant.' The administrator in this case by not only being firm and objective but also appearing to be so, resolves the problem of finding a location for pelletisation plant against a backdrop of local agitation about pollution, damage to agricultural land, fuelled and fanned by political parties, who are out to make political gains out of the issue.

The Hindustan Cooperative Bakery by Shri Ranjit Issar, brings out the need for clarity in objectives along with a holistic planning. The administrators and politicians whose studies are, more often than not, limited to subjects like history and sociology often tend to make the industries they head, as employment programmes. There is need to train them in management functions. A post script by Editors, as to how exactly the bakery is facing now, would have been interesting. The last two cases focus on lengthy

strikes in service sector under takings. The one in BEST (1968) is written by Shri J.B.D.' Souza once its general manager and the one of the safar Karamacharis of Delhi Municipal Corporation (1972) is written by Jaideep Singh and Shri M.K. Narayan. Both of them follow the same pattern of presentation; a brief description of general setting and back ground followed by day to day description of the strike which turns very lengthy taking into consideration the fact BEST strike lasted for 57 days and that of MCD for 45 days.

The lesson of Shri J.B.D. Souza for administrators is that they should make sure of their political support at every stage of crisis, and that the events during a crisis situation are controlled by factors extraneous. The only effective thing that an administrator can do, in such a situation according to Souza would be to educate the public through advertisements and press releases and arouse their sympathy. Mr. Souza should know that even without such education public would be against any strike in service sector and that too in a transport undertaking in a place like Bombay. The case does not high light the role of administrators in preventing such occurrences. The presentations of MCD case is more analytical and briefer.

In the editorial critique, for each case, Shri Jaideep Singh, repeats his uniform recommendation of presenting indepth interviews with key

characters in each case. That perhaps would have made the already lengthy cases lengthier. However his recommendations would have been valuable, if the cases were being presented in visual forms on videocassettes for that would have captured the emotions and the subtle themes, behind the obvious narrations. The selection of cases does not seem balanced (two of the seven focus on strike) taking into consideration the multifarious problems faced by administrators.

The Design of a Maintenance System

Charles F. James Jr., B.N. Shenoy and Joseph Stanislaw

Asian Productivity Organization, Japan
Ed : 1979
Price Not stated
50 pp (inclusive of charts, etc) + vi

A.K. Chatterjee
National Productivity Council
New Delhi-110003

This manual, an outcome of the consultancy work of an APO team, was aimed at assisting 'in the design and implementation of a complete maintenance system'.

The book begins with a general review of maintenance system, examining, among others, its objectives, various components, etc. The two chapters on Preventive Maintenance

and Corrective Maintenance are in the nature of case studies discussing a specific system design. Flow diagrams detail the sequence of activities in planning, execution and control. Quite a few form designs are given to help the reader in understanding the specific details. There is a brief, but lucid, discussion on the working out of weekly PM schedules. Although the third chapter is titled 'Corrective Maintenance and the Maintenance Workshop', there is hardly any treatment given to Maintenance Workshop.

The last chapter raises a few topics in maintenance, picked up apparently, at random. The sketchy treatment given to topics such as lubrication, replacement, work measurement, etc. are not in proportion to their importance in a maintenance system. 'Control', being an integral part of any system, could have been covered in the earlier chapters.

This manual cannot surely be called the ideal guide to design of maintenance system. At best, it provides the system designer with a fleeting glance at the various topics involved and to that limited extent, familiarises him with task. Given the size of the book, one could not, definitely, expect a thorough coverage, but to do justice to the subject, a more detailed treatment would have been in order.

But for a few printing mistakes, there is nothing else to complain about, regarding the get up or the production aspects.

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Human Resource Management

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**Converting dreams into deeds
is the
credo of productivity!**

Letter From the Editor-in-Chief

Modern Management has to contend against "forces" and utilise the resources. It involves three elements—(i) Knowledge; (ii) Motivation; and (iii) Opportunity on the Part of those manning the organisation. The dynamic force in these areas is provided by the managers who have to 'think', be innovative in work, set clear objectives and endeavour to contribute more to the growth of the organisation. However, due to far reaching impact of science and technology and the emerging pressure on the socio-economic system, management process has become more complex calling for better organisation and methods and there exist a dychotomy between technology and the human system. It is in the integration of the two, that the real quintessence of management lies.

In developing countries productivity plays a pivotal role in ensuring steady economic growth process. It is an important indicator of the effective use of resources and the measurement of the soundness of economic means. While in its conventional approach productivity is defined as the ratio of output of goods and services to input of various resources, in its pragmatic approach productivity characterises 'total effort' which embraces all activities and all people.

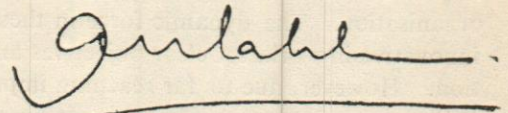
Planning for productivity has to deal with the use of resources such as capital, materials, energy, technology and know-how. It is through effective deployment of these that higher production and productivity are achieved with better quality and reduced unit cost of production. In a sense, therefore, while ratios merely measure the levels of productivity, it is the positive and innovative attitude which contribute to productivity improvement. In its simplest definition, management could be defined as "resource for results" and productivity could be identified as an attitude of mind which is progressive and innovative and is intolerant to waste in any type and in any form.

In view of above, the philosophy of production at any cost has become irrelevant. Management can no more be construed as a function by chance. It is a matter of conscious choice by design and not by accident. It has to rely more on the process of "synthesis" as against "analysis" such as (a) methods (b) performance and (c) utilisation.

In the wake of phenomenal advances in science, technology, it is management which has singled out as playing the key role. Through better management, the growth of economic system can become faster and this in turn has developed two sets of people who must work together :

- (i) the young managers who are better equipped with knowledge as well as conceptual and analytical tools, and
- (ii) experienced managers who are better placed in terms of mature judgement and qualities of endurance and long service.

In trying to contend against the forces and utilise the resources for improving operating efficiency, management have to rely both on 'knowledge' and 'experience' which often come in conflict with the desired expectations in the enterprises. At times, there is lack of compatibility between expectations and the potentialities of the system to meet these needs. The real art of management consists in overcoming this dilemma without sacrificing the organisational effectiveness. In this expanded concept management in the future can't rely merely on the art of 'using' the resources but in 'optimising' the same by overcoming the stresses and strains which are a necessary part of a dynamic system. Any excess phenomenon of stresses and strains in any organisation could be symptomatic of lack of planning and pragmatic policy execution. While it has to plan for the present or the expected, it has also to plan for the future and the unexpected thereby causing the unexpected to become expected. The problems of management for higher productivity will have to be visualised, conceptualised and operationalised keeping this challenge in view.



(DR. A.N. SAXENA)