Message from Chairman

I am glad that the Department of Management Studies has brought out the first issue of International Journal on Global business Management & Research. All theoretical advancements and applications need dissemination through proper channels. It is certain that this journal would provide a platform for scholars across the world to publish and share knowledge on current management practices.

I wish the Faculty of the Department of Management Studies all the best for their efforts in bringing out this Management Journal.

Mr. S. MEGANATHAN

Message from Chairperson

I congratulate the Department of Management Studies for the scholarly effort in publishing this International journal on Global Business Management & Research.

I sincerely anticipate that this would be a valuable arena enabling the research scholars to publish papers, and share knowledge on latest developments in Management, Business and Economy. I believe that this journal would empower people to maximize their contribution and encourage their research activities.

I wish the journal all success.

Dr. THANGAM MEGANATHAN

Message from the Chief Editor

Research is the systematic work undertaken to enhance the quantum of knowledge in any field. Research should be one of the key thrust areas in any educational institution that offers post graduate programs. As the first step towards creating a condusive ambience for research, it was decided to bring out a bi-annual journal that would encourage creative thinking in the minds of the faculty members and students who have chosen management as their preferred field of study.

Today the world is increasingly seen as one global village and the geographical, linguistic and cultural boundaries are slowly losing their importance. As a consequence, the business management practices are also viewed in a global perspective. Our journal will focus on areas that concern management issues in the areas of operations, HR, finance, entrepreneurship, business strategies, economics and related areas.

I take this opportunity to thank our chairperson Dr Thangam Meganathan, for her advice, encouragement and support for bringing out this journal. We also thank our principal and faculty members of our department.

Special mention must be made about Ms K R Sowmya , Assistant Professor of our department who initiated this venture and worked hard to ensure that the journal is published as planned with high quality papers and in the time frame set initially.

Very special thanks to all the Peer Reviewers who gave their valuable time to take a close look at the papers and ensure quality. I request all academicians and the experts from the industry to send your papers to our new venture in the days to come. We also look forward to your valuable feedback and suggestions for improvement.

S. SANKAR

Dean, Department of management studies, Rajalakshmi engineering college.

CONTENTS   PAGE NO

DECISION MAKING DELEGATION: MANAGING ACROSS CULTURES

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Abstract

Globalization of business has led to a keen awareness of the influence of differences in national cultural values on the effectiveness of different management practices and processes in organizations. One important managerial practice that may not be universally effective across cultures is delegation. Certainly, delegation is an important aspect of organization design. The Western management literature (primarily North American and British) is resplendent with references that support the benefits of delegation and the drawbacks of not delegating. In countries where managers hold different cultural values to Western managers, it is likely that preferences for the extent of decision making delegation will also differ. Using a sample of Greek managers this study empirically examines the extent of decision making delegation in Greek organizations and its impact on Greek managers' performance and dimensions of job-related stress. Implications of the results are addressed with respect to Greek manager's development and training in the delegation process, as well as effective organizational design, within the context of an increasingly globalized world.

Keywords: Delegation, performance, job stress, culture and Greek managers

I. Introduction

As the move toward globalization of business continues, an increasing number of enterprises are recognizing the benefits of establishing their business operations in overseas countries and markets. Concomitantly, many managers no longer work within domestic boundaries; rather they work in the global marketplace. For example, The World Investment Report (2011) shows that transnational corporations (TNCs) worldwide, in their operations both at home and abroad, generated value added of approximately $16 trillion in 2010 – about a quarter of total world GDP. Moreover, sales and value added of TNC foreign affiliates in the world reached $33 trillion and $7 trillion, respectively, and they also exported more than $6 trillion, which is about one-third of world exports.

Foreign direct investment and international joint ventures, as well as the movement of labour across borders, has led to a keen awareness of the influence of differences in national cultural values on the effectiveness of different management practices and processes in organizations. There is certainly ample evidence to support the view that cultural values influence the way managers behave, and cultural differences evoke subtle yet powerfully different managerial behaviour and management styles (Michael, 1997; Hempel, 2001; Hong and Engestrom, 2004). An important question in this context is: to what extent can management practices and processes successfully

'travel' across borders? A number of studies have examined the influence of managers' cultural values on the effectiveness of organizational processes and structures (e.g., Goodwin and Sethapokin, 1996; Newman and Noellen, 1996; Michael, 1997; Dobbin and Boychuk, 1999; Wang and Clegg, 2002; Pellegrini and Scandura, 2006; Dimitratos et al., 2011). Few studies, however, have examined the effectiveness of the delegation process across cultures. Indeed, as noted by Pellegrini and Scandura, (2006) and Dimitratos et al. (2011), there is a paucity of research that examines how cultural issues might affect leadership practices, such as delegation and decision making.

Within the Western (primarily North American and British) theoretical and empirical literature, delegation is widely recognized as an essential element of effective management. Four main benefits of delegation can be identified from the literature: (1) delegation satisfies subordinate managers' need for achievement and autonomy, thereby providing a stimulus for motivation and entrepreneurial behaviour (Mintzberg, 1979); (2) delegation reduces work overload of upper managers (Yukl and Fu, 1999) (3) delegation provides a training ground for the more complex strategic decisions that subordinate managers are likely to encounter in senior managerial positions (Yukl and Fu, 1999); and (4) delegation places decisions at levels where there may be greater expertise about particular issues than possessed by

the supervisor, providing additional information processing benefits to the organisation which may result in more efficient and better quality decisions (Galbraith, 1973, Ito and Person, 1986). Thus, the Western organization behaviour and organization theory literatures have acknowledged the positive relationship between delegation and job related outcomes, such as subordinate performance, job satisfaction and lowered stress (e.g., Argyris, 1964; Hall and Savery, 1986; Leanna, 1986, Argwal, 1993; Schriesheim, Neider and Scandura, 1998; Yukl and Fu, 1999; Johnstone, 2000; Mullins, 2005).

In a climate of increasing globalization and the concomitant heightened awareness of differences in cultural values across societal groups (Hofstede, 1980), it is likely that preference for the extent of decision making delegation within organizations differs across societal groups. This study examines the extent of decision making delegation in Greek organizations and its impact on Greek managers' performance and job-related stress. The researchers argue that an organization characterized by high levels of managerial decision making delegation is inconsistent with Greek managers' cultural values, and thus, managers working in such an environment are likely to experience increased stress from the job and are likely to underperform. Given the possible benefits of delegation, as argued by the Anglo-American researchers, a culture sensitive training and development program for Greek managers and their subordinates may provide beneficial results in terms of work-related outcomes.

II. Conceptualization of Delegation

Delegation is a process that involves assigning important tasks to subordinates, giving subordinates responsibility for decisions formally made by the manager, and increasing the amount of work-related discretion allowed to subordinates, including the authority to make decisions without seeking prior approval from the manager (Yukl and Fu, 1999).. The process of delegation is not an isolated organizational process; rather it forms part of, and is usually consistent with, the overall organization structure. The organization structure defines how tasks are to be allocated, who reports to whom, and the formal coordinating and communication mechanisms (Hall, 1996). The organization theory literature isolates a number of dimensions of organization structure. Three key dimensions of organization structure that have implications for

the extent of decision making delegation are formalization, decentralization, and participation in decision making (Daft, 2010; Hall, 1996).

Formalization refers to the degree to which decisions and working relationships are governed by formal rules, standard procedures and policies (Daft, 2010). Formalization involves organizational control over the individual by specifying how tasks should be undertaken and by setting constraints on employee behaviour (Argyris, 1964). High formalization effectively reduces the decision making discretion of the individual (Ginzberg, 1980) and therefore is associated with low delegation of decision making authority.

Decentralization (or centralisation) refers to the locus of decision making authority and control within the organization (Van de Ven and Ferry, 1980). A decentralized organization usually implies that major sources of decision making authority have been passed to subordinate managers (Van de Ven and Ferry, 1980). Clearly, by definition, decentralization involves the delegation of decision making authority while centralization involves very limited decision-making delegation.

Participation in this study is limited to one of the key areas of participatory decision making, budgetary participation. Budgetary participation refers to the practice of allowing superior and subordinate managers to jointly decide on budget-related matters, such as setting budget targets, revising budget targets and deciding on the extent to which budget targets will form the basis for performance evaluation (Mia, 1984). Budgetary participation, then, affords managers a degree of decision making discretion and responsibility beyond that offered by formalization but less than that offered by full decision making delegation as in organizational decentralization.

Given the foregoing, the extent of decision making delegation within an organization can be viewed on a continuum where at one extreme, low levels of decision making delegation is characterized by an organization structure that relies heavily on formalization, is centralized, and offers limited scope for budgetary participation by subordinate managers. At the other extreme of the delegation continuum, high levels of decision making delegation is characterised by an organization that does not rely heavily on formalization, is decentralized, and encourages participation in budgetary decisions. The conceptualisation of delegation on a continuum is

consistent with previous theoretical development of the delegation process (Leanna, 1986). Indeed Leana (1986, p. 755) suggests that "on a continuum depicting manager-subordinate decision making authority, delegation is the direct opposite of autocratic decision making, and participation is the midpoint between autocratic and delegate arrangements." That participation in decision making represents a midpoint in the delegation continuum is important for the development of hypothesis three.

Greek Societal Values and Preferences for the Extent of Delegation

The study of work-related values and associated management practices undertaken by Hofstede (1980) remains the most complete empirical research of its type (Calori et al., 1994) and (despite limitations) has been the dominant research paradigm in cross-cultural studies for some time (De Cieri and Dowling, 1995). Further the validity, reliability and value of Hofsete's (1980) framework have been confirmed by prior studies (e.g., Tsui et al., 2007). It is therefore used as the main basis for theory development. According to Hofstede's (1980) cultural model, Greece is classified as large power distance, strong uncertainty avoidance and collectivistic. It should be noted that the cultural dimensions for Greece are quite different from the cultural dimensions of most Anglo-American countries where most of the original research originated. Anglo countries (e.g., United States, England, Australia, Canada) are generally low power distance, weak uncertainty avoidance and individualistic.

Power distance refers to the extent to which members of a society accept and expect that power will be distributed unequally (Hofstede, 1980). Organizations in large power distance cultures are characterized by the acceptance of human inequality and individuals show deep respect for authority that results in a paternalistic work relationship between superior and subordinate. Involvement in the decision making process is not sought by subordinates nor encouraged by superiors (Ali et al., 1992; Child 1981).

Uncertainty avoidance refers to the extent to which members of a society feel threatened by uncertainty or unknown situations (Hofstede, 1980). Organizations in strong uncertainty avoidance cultures are characterized by: a strong need for rules and regulations; greater structuring of organizational activities; employee preference for clear unambiguous instruction from management, less risk-taking; intolerance toward deviant ideas and behaviours and; less individual initiative and responsibility in the workplace (Hofstede, 1980).

The Individualism- Collectivism dimension refers to the extent to which identity is based on the self versus the collectivity. Individualism refers to a loosely knit social framework in which people are supposed to look after their own interests and those of the immediate family. Independence from the collective is encouraged and status is derived from individual accomplishments. Collectivism refers to a tightly knit social framework where individuals are integrated into strong, cohesive groups, such as, organisations, religions, and the extended family or communities (Triandis, 1995; Trompenaars, 1994). Individuals are protected by the group and are expected to act in the group's best interest (Hofstede, 1980). Organization structures that limit the extent of decision making delegation of subordinates seem congruent with the large power distance societal values of Greek managers. Indeed, it is likely that encouraging Greek managers to increase their individual involvement in decision-making may generate confusion and anxiety, leading to lower levels of performance and higher job stress levels. Such managers tend to prefer and respect a more non-consultative, decisive approach from their superior (Papalexandris and Chalikias, 2002). In other words, the boss should behave as the boss. At the same time, upper management inculcated with the values of a large power distance culture, are likely to be reluctant to give up decision-making authority (perceived to be rightly bestowed upon them) to promote a relationship of greater equality in decision-making (Myloni et al., 2004; Makridakis et al., 1997; Veiga and Yanouzas, 1991).

Similarly, limited decision making delegation seems consistent with Greek managers' strong uncertainty avoidance values. Fear of making decisions is a characteristic of strong uncertainty avoidance cultures (Hofstede, 1991). Fear of making decisions or fear of responsibility among Greek subordinate managers has been documented in the literature (Bartholomew, 1995; Bourantas et al., 1990, Cummings and Schmidt, 1972). By way of illustration, in his attempt to

restructure Olympic Airways (the Greek carrier) with a decentralization program, the ex-CEO Rigas Doganis (an American-Greek) counted resistance, noting that "there is a wonderful Greek word: *efthynofovia*. It means 'fear of making decisions'. Many senior and middle managers are terrified of making decisions" (Bartholomew, 1995:15). Subordinate managers of such cultures would most likely prefer to defer to the certainty of rules, procedures and leader directives, rather than make key decisions themselves and accept responsibility for the decision consequences (Psychogios and Wood, 2011). Organization decision making structures that emphasize the hierarchy and focus on prescribed (already decided) procedures are likely to be preferred, contributing to lower stress levels and higher performance for Greek managers.

Based on the foregoing, implementing organization structures that limit decision making delegation to Greek subordinate managers (i.e., high formalization and low decentralization) are likely to be associated with lower job stress and higher managerial performance. Alternatively decision making structures that promote decision-making delegation to Greek subordinate managers (i.e., low formalization and high decentralization) are likely to be associated with higher job stress and lower managerial performance. These arguments form the basis of the following hypotheses:

H1: Low levels of decision making delegation characterized by high formalization and low decentralization will be positively associated with Greek managers' performance

H2: Low levels of decision making delegation characterized by high formalization and low decentralization will be negatively associated with Greek managers' job-related stress.

Consistent with the theory of Leana (1986) described in the previous section, the three variables, formalization, budgetary participation and decentralization form a continuum of decision making delegation from low to high, where budget participation represents the midpoint. Given this midpoint position, it is more difficult to predict budgetary participations effect on Greek managers' job-related outcomes. The budget participation/job outcomes relationship is even more difficult to predict because the Greek cultural values of collectivism and uncertainty avoidance are consistent with effective budget participation, whereas the power distance cultural value is inconsistent with effective budget participation. To expand on this point, in collectivist cultures there is a fundamental belief in, and preference for, group decision making (Hofstede, 1980) and thus budget participation is likely to be preferred by collectivist Greek managers. Additionally, research has shown that the budget participation process can provide a forum whereby managers can obtain additional task information, reducing task uncertainties and ambiguities (Mia, 1989). Again, high uncertainty avoidance Greek managers are likely to favourably respond to budget participation for its uncertainty reducing effect. On the other hand, accepted and expected power differentials between Greek superior and subordinate managers seem inconsistent with budget participation.

From another perspective, budget participation could be viewed as a precursor to more intense decision making delegation that may be expected of subordinate Greek managers in progressive, globalized firms. Greek subordinate managers may therefore feel more confident and less stressed when the delegation of decision making authority is within a participatory framework. All decision making responsibility does not rest on the subordinate managers' shoulders but is shared with the superior manager. Given that two of the three cultural value dimensions support the effectiveness of budget participation, and given the likely preference for shared responsibility for decision making responsibility, we propose the following hypothesis:

H3: Delegation of decision making in the form of budget participation will be positively associated with Greek managers' performance and negatively associated with job-related stress.

It is important to highlight that the hypotheses specified above are consistent with a divergence (or culture-sensitive) view of management practices (De Cieri and Dowling, 1995; Khilji, 2003) vis a vis a convergent view. A convergent view assumes universally appropriate management practices (where usually Western models of management are deemed the universal), a divergent view questions universality on the basis of differences in institutional frameworks and cultural values among societies (De Cieri and Dowling, 1995). As argued by Li et al. (2001) and Khilji, (2003), societal culture is a potent force in organizations, influencing managerial decision making, leadership styles and HRM practices. Thus, in the context of this study, we argue from a divergence posture that the

effectiveness of decision making delegation for Greek managers is influenced by their societal values.

III. Research Method

Data were gathered by questionnaires completed by middle managers working in manufacturing organizations in Athens, Greece. The questionnaire was initially written in English and subsequently translated into Greek following the procedure advocated by Hulin and Mayer (1986). The questionnaire was piloted on English speaking Greek managers and Greek academics working in Australia.

Sample Size and Data Collection

Contact was made with a Greek academic working in an Australian university who coordinated the data collection in Athens. The researcher contacted companies that had 100 to 200 employees. All organizations were headed by a Greek CEO to reduce the potential dilution of Greek cultural values within the organization. The convenience sample reflects a predominance of companies from the consumer products and textile industries. Of 100 questionnaires distributed, 78 useable responses were returned. All respondents were male middle managers and the average age was 44 years.

Measurement of Variables

The Mahoney et al.'s (1963) nine-item instrument was used to measure managerial performance. The fifteen-item index developed by Kahn et al. (1964) was used to assess manager's job-related stress. Both these measures are based on seminal works and have been used extensively in the management and accounting literature across a number of different countries. Despite the criticisms on the use of subjective measures in empirical studies, self-rating measures of performance in particular still have their place in empirical research. Empirical evidence suggests that the associated halo effect is overrated and that self-rating provides a more accurate measure of performance than superior ratings (Heneman, 1974; Viswesvaran, Schmidt

and Ones, 2005). It can be argued that superior managers may only have fragmented knowledge of the job behaviours of their subordinates because superiors have limited personal contact with subordinates and that limited personal contact is restricted to particular situations. Thus, self-rating measures serve the purpose of obtaining first hand and direct information about one's experience. Perceptual measures enable respondents to reflect on their individual perception of reality about how they perform (Link & Oldendick, 2000).

Decentralization was measured using an instrument developed by Burns and Stalker (1961). The instrument requires respondents to rate their actual authority in making the following kinds of decisions: developing new products or services; hiring and firing managerial personnel; selection of large investments; budget allocations and; pricing decisions. A seven-point Likert-type scale was employed to elicit responses that range from (1) no delegation to (7) complete delegation. The formalization variable was measured using a five-item instrument aimed at capturing the extent to which rules, policies and procedures are formalized and followed within the work group based on the instrument developed by Van de Ven and Ferry (1980). Budgetary participation was measured using a six-item instrument developed by Milani (1975). The Appendix provides a list of items for each measure.

The cultural variables, power distance, uncertainty avoidance and collectivism were re-measured using Hofstede's (1980) value-survey module. The re-measurement of the cultural dimensions was considered important because Hofstede obtained the index scores 30 years ago. The power distance score obtained was 56, the index score for uncertainty avoidance was 74, and the individualism score was 41, confirming that Greece is a moderately high power distance, strong uncertainty avoidance and collectivistic culture. The descriptive statistics, Cronbach (1951) alpha reliability measures and a correlation matrix for all relevant variables is presented in Table I.

Table I: Descriptive statistics and correlation matrix

Variable	Mean	S.D.	Alpha	1	2	3	4
1.Budget participation	28.44	8.62	0.91				
2. Decentralization	17.29	5.90	0.75	0.32**			
3. Formalization	15.87	4.39	0.85	-0.03	-0.12		
4. Job-related stress	40.15	8.47	0.82	-0.19	0.23*	-.25*	
5.Managerial performance	52.21	8.76	0.85	0.46**	0.14	0.33**	-0.23*

* correlation is significant at the 0.05 level   ** correlation is significant at the 0.01 level

IV. Results & Discussion

To test the association between dependent (managerial performance and job-related stress) and independent variables (extent of delegation [formalization, budgetary participation and decentralized decision making] as specified in the hypotheses, regression analysis was used. Tests on the adequacy of the regression models indicate that the assumptions of the models were satisfied by the data. Table II shows the results for testing the decision making delegation variables on managerial performance. As reported in Table II, coefficient b_1 is positive and significant ($p<0.01$), however b_3 is not significant. These results provide partial support for H1 such that an increase in formalisation increases managerial performance (consistent with H1);

however, an increase in decentralization was not related to Greek managerial performance. Table III shows the results for testing the decision making delegation variables on job-related stress. As reported in that table, coefficient b_1 is negative and significant ($p<0.05$) and b_3 is positive and significant ($p<.05$). These results provide support for H2 such that, for Greek managers, an increase in formalization is associated with reduced job stress while an increase in decentralization is associated with increased job stress. Referring to Tables II and III, H3 is also supported (coefficient b_2 in Table 3 is positive and significant [$p<0.01$] and coefficient b_2 in Table 4 negative and significant [$p<0.05$]). Thus, for Greek managers, budgetary participation has a favourable impact on performance and job-related stress.

Table II: Results for testing the effect of formalization, budget participation and decentralization on managerial performance

Variable	Coefficient	Value	Std error	t	p
Intercept	a_0	22.19	6.00	3.71	0.00
Formalization	b_1	0.86	0.25	3.53	0.00
Budget participation	b_2	0.57	0.13	4.34	0.00
Decentralization	b_3	0.07	0.19	0.39	0.70

$R^2=0.32$; F= 11.20; $p<0.00$

Table III: Results for testing the effect of formalization, budget participation and decentralization on job-related stress

Variable	Coefficient	Value	Std error	t	p
Intercept	a_0	47.57	5.04	9.43	0.00
Formalization	b_1	- 0.44	0.21	-2.14	0.03
Budget participation	b_2	-0.27	0.11	-2.45	0.02
Decentralization	b_3	0.42	0.16	2.58	0.01

$R^2=0.18$; F= 5.15; $p<0.00$

V. Conclusion

The results of this research show that for this sample of Greek managers the decision making delegation variables, formalization and budget participation, were associated with lowered job stress whereas decentralized decision making (the highest level of delegation) was associated with increased job stress. To further explore what components of stress are triggered with increased delegation, a factor analysis of the Kahn et al.'s (1964) stress instrument was undertaken and the emergent factors correlated with the delegation variable decentralization (not shown here). This exploratory analysis revealed that increased decentralization was more specifically associated with stress from feelings of

A Biannual Peer Reviewed Journal. ISSN -2278 8425

Page 6

work overload and role ambiguity. In decentralized Greek organizations there may be insufficient direction from upper management about the changed roles and expectations of the subordinate manager. Furthermore, the increased burden of increased delegated authority and responsibility is perceived as creating more work for the manager, and thus a source of stress. These findings appear to be consistent with other Greek empirical research (e.g., Dimitratos et al., 2007; Myloni et al., 2004; Makridakis et al., 1997).

Turning to managerial performance, the delegation variables, formalization and budget participation were positively associated with Greek managers' performance (as predicted) however; decentralization (the highest form of delegated decision making studied) was not associated with performance. Work rules and procedures (formalization) provide clear guidelines to Greek managers about how to undertake and complete tasks. Delegation is limited which is consistent with the Greek cultural values of high power distance/strong uncertainty avoidance. Similar to the job stress-budgetary participation relationship, allowing Greek managers to participate in budget related matters possibility provides a group forum whereby managers can discuss job related matters. The group nature of the decision making (related to the collectivism) and the opportunity to clarify work related matters (related to uncertainty avoidance) might be responsible, for the associated increase in performance.

In summary, with respect to job stress, higher levels of decision making delegation for this sample of Greek middle managers, is contra-indicated. Decision making structures that limited delegated authority and responsibility (formalization and budget participation) was associated with lowered job stress while increased delegated authority and responsibility (decentralization) was associated with increased job stress. With respect to performance, limited delegated authority (formalization and budget participation) was associated with higher levels of performance whereas decentralization, the highest form of delegated authority studied was not associated with performance. Thus, consistent with a divergence posture (De Cieri and Dowling,

1995), the benefits of delegating decision authority and responsibility, as espoused in the Western (primarily Anglo-American) literature, may not be transferable to other cultures, such as Greece. Organization change and development consultants are only too acutely aware that it is not possible to effectively apply a management theory that was developed in one country to another country. However, globalization has lead to foreign direct investment and joint ventures with Greek organizations such that Greek managers are likely to come into contact with Anglo-American management processes and practices. Clearly any organizational change strategy that focuses on the increased delegation of decision making authority and responsibility would benefit from a culture sensitive training program for both superior and subordinate managers. On the basis of the research results, such a training program should specifically address the stress brought about by decentralized decision making – feelings of being overworked and having less time for family life, and feelings related to unclear work roles.

A number of limitations may have influenced the results of the study. Data were drawn from only large manufacturing organizations located in Athens. The results may only be generalizable to that population. Further studies could, for example, examine regional areas outside of Athens, smaller organizations or service organizations. The results of this study can only be generalized to male middle managers. Females and front-line managers/employees may have different preferences for the extent of decision making delegation that may impact on their experienced stress and/or performance. Self-report performance measures used in this study have been criticized (Venkatraman and Ramanujam, 1987). The usual caveats applicable to cross-sectional survey methods must be taken into account. A number of limitations have been raised with respect to Hofstede's cultural model (see, Mead, 1994; Harrison and McKinnon, 1996) however as noted above, the validity, reliability and value of the framework has been strongly supported by research in the field (e.g., Tsui et al., 2007). In particular, Hofstede's broad quantitative national cultural dimensions cannot adequately capture the depth and diversity of societal culture. Qualitative research in the field is sorely needed.

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Appendix

Measurement Scales

Managerial Performance

1. Planning: Determining goals, policies and courses of action; work scheduling, budgeting, setting up procedures, programming. (Anchors: Below average performance; Above average performance)
2. Investigating: Collecting and preparing information for records, reports and accounts; measuring output; inventorying, job analysis.
3. Coordinating: Exchanging information with people in other organisational units in order to relate and adjust programs;

advising other departments, liaison with other managers.

4. Evaluating: Assessment and appraisal of proposals, or of reported or observed performance; employee appraisals, judging output records, judging financial reports; product inspection.
5. Supervising: Directing, leading and developing your subordinates; counselling, training and explaining work tasks/rules to subordinates; assigning work tasks to subordinates, handling complaints.
6. Staffing: Maintaining the work force of your unit; recruiting, interviewing and selecting new employees; placing, promoting and transferring employees.
7. Negotiating: Purchasing, selling or contracting for goods or services, contracting suppliers, dealing with sales representatives; collective bargaining
8. Representing: attending conventions, consultation with other firms, business meetings, public speeches, community drives; advancing the general interests of your organisation.
9. Overall performance

Job-related Stress

All of us occasionally feel bothered by certain kinds of things in our work. Below is a list of things that sometimes bother people. Please circle the number which best reflects your response.

How frequently do you feel bothered by,

1. Feeling that you have too little authority to carry out the responsibilities assigned to you
2. Being unclear on just what the scope and responsibilities of your job are
3. Not knowing what the opportunities for advancement or promotion exist for you
4. Feeling that you have too heavy a work load to satisfy the conflicting demands of various people over you
5. Feeling that you are not fully qualified to handle your job
6. Not knowing what your superior thinks of you, how he (she) evaluates your performance
7. The fact that you can't get information needed to carry out your job

8. Having to decide things that affect the lives of individuals, people that you know
9. Feeling that you may not be liked and accepted by the people that you work with
10. Feeling unable to influence your immediate superior's decisions and actions that affect you
11. Not knowing just what the people you work with expect of you
12. Thinking that the amount of work you have to do may interfere with how well it gets done
13. Feeling that you have to do things on the job that are against your better judgment
14. Feeling that your job tends to interfere with your family life.

Formalization

1. How many standard operating procedures or practices exist for doing the major tasks in you unit?
2. How precisely do these standard operating procedures or practices specify how the major tasks are to be done?
3. To what extent do people in your unit actually follow the standard operating procedures or practices?
4. What percentage of the unit's work is covered by standard operating procedures?

Decentralization

To what extent has authority been delegated to the appropriate subordinate manager for each of the following classes of decisions? (Please rate *actual* rather than stated authority) Anchors: No delegation (decision taken by superior without consulting subordinate manager); Complete delegation (decision taken by subordinate manager without consulting superior)

1. Development of new products or services
2. The hiring and firing of managerial staff
3. selection of large investments
4. Budget allocations
5. Pricing decisions

Budgetary Participation

1. Which category best describes your activity when the budget is being set? (Anchors: All of the budget, None of the budget).
2. Which category best describes the reasoning provided by your superior when budget revisions are made? (Anchors: Very sound/logical; Very arbitrary/illogical).
3. How often do you state your requests, opinions and/or suggestions about the budget to your superior within being asked? (Anchors: Very frequently; Never).
4. How much influence do you feel you have on the final budget? (Anchors: Much influence; Little influence).
5. How do you view your contribution to the budget? (Anchors: Very important; Unimportant)
6. How often does your superior seek your request, opinions and/or suggestions when the budget is being set? (Anchors: Very frequently; Never).

OCCUPATIONAL STRESS IN HOSPITAL WORKERS WITH SPECIAL REFERENCE TO ALLAHABAD REGION

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Abstract

The main objective was to determine the sources of occupational-stress in hospital workers working in Allahabad Region, to examine the relationship between the socio-demographic variables and the level of work stress, and to study the relationship between occupational stress and the anticipated outcomes. This study applies the descriptive analytical research design. Doctors, nurses, technicians, administrators, and therapists working at five hospitals in this region were screened using a self-administered questionnaire developed to serve the objectives of this study. 700 questionnaires were distributed and 414 were returned and valid for analysis. Frequencies, percentages, means, and standard deviations were used to present the descriptive analysis. Inferential analysis included two independent samples t-test, Onaway ANOVA, Pearson correlation, and stepwise multiple regression. The significance level used for the inferential statistics was 0.05.

The multiple regression analysis indicated that insufficient technical facilities, absence of appreciation, long working hours, and short breaks were significantly able to explain the variance in the level of occupational-stress among hospital staff. Pearson correlation showed that both age and experience showed significant negative relationship with occupational-stress level. Results also revealed that urban participants showed significantly higher level of occupational-stress than the rural. The rest of the socio-demographic and job variables showed no significant relationship with the level of occupational stress .Occurrence of health problems, changing the hospital, changing the job, quitting the practice, and undesired relationship with coworkers were found to be correlated with occupational-stress. The level of occupational-stress among the hospital staff seems to be high. This was due to insufficient technical facilities, absence of appreciation, long working hours, and short breaks. In addition, the older the employee and the more experience he/she has the less work-stress is experienced.

Keywords: Hospital workers, Health problems, Occupational stress, Stress outcomes.

I. Introduction

Occupational stress relates to the mental and emotional strain on the workers, which may be due to excessive pressure or various types of demands placed on them. Occupational stress occurs when there is a discrepancy between the demands of the environment/workplace and an individual's ability to carry out and complete these demands. Psychological Stress in the workplace has become more prevalent during the past decade both in developed and developing countries. No wonder, the United Nations International Labour Organization has defined occupational stress as a "global epidemic." Usually the Hospital workers are faced with occupational stress related health hazards which develop silently and slowly and remain totally unknown.

Therefore, occupational stress has been a long-standing concern of the health care industry. Studies indicate that health care workers have higher rates of substance abuse and suicide than other professions and elevated rates of depression and anxiety linked to job stress. In addition to psychological distress, other outcomes of job stress include burnout, absenteeism, employee intent to leave, reduced patient satisfaction, and diagnosis and treatment errors.

In India, where the workers are often exposed to much worse hazards compared to advance countries this problem exists on a large scale though this is not officially recognized. The workload among workers ranges from light to heavy requiring greater effort and consequently increased physical and mental pressure. Specifically, the occupational stress produced in the workplace is associated with physiological

and psychological disturbances resulting in decreased productivity in the hospital services. A large number of lost workdays each year can be, attributed to stress. Stress also affects the employees' quality of work, frequent mistakes lack of concentration, disorganization, aggression and lack of interest in work can be seen. Thus, stress management in hospitals should be given due importance. Therefore following are the objectives of this study:-

(1) Determine the sources of occupational-stress in the hospitals in order to deal with the sources effectively.

(2) Compare the stress level among the various hospital staff groups (Physicians, nurses, technicians, therapists, and administrators) in Allahabad Region

(3) Determine to what extent the level of occupational-stress is influenced by the Respondents' socio-demographic and job variables.

(4) Study the relationship between occupational-stress and the anticipated outcomes.

(5) Develop appropriate recommendations to deal with work-stress.

Variables' definitions: The following are the main variables in this study:-

(1) Occupational-stress: It refers to the situation at which a worker's talents and ability mismatch with his or her job demands or requirements, and/or when the worker's needs are not satisfied by the job.

(2) Sources of work-stress: They refer to statements related to work environment, role conflict and ambiguity, social and organizational elements that may lead to occupational-stress.

(3) Outcomes of occupational-stress: The outcomes of work-stress refer to behavioral effects (bad relationships with coworkers), health effects (health problems), and organizational effects (quitting the practice, leaving the hospital, or changing the job).

II. Literature Review

The nature and definition of stress

It is well known that the impact of stress on the physical and mental health as well as the productivity of both the organization and the employee is a growing concern of organizations. In fact, stress and burnout are sometimes conceived among the organizational behavior major concerns of the decade (DuBrin, 1984:162). As mentioned earlier work stress is estimated to cost American industry between 200 to300 billion dollars per year. Though the literature paid a large amount of attention to stress, the basic nature of stress is still not agreed upon. Some authors see stress as an external or internal stressors causing tension on a person or a group. While others see stress as physiological and mental reaction to an external stressor (Durbin, 1984:162).However, it is true that not all stress is negative. There is also a positive side of stress as the negative side of it (distress).

Therefore, there is the reasonable degree of stress, which motivates some people to high performance, and there is the too much stress which causes low performance; the situation of no stress is impossible (Morgan, 1994:307-309).

Literature includes hundreds of stress definitions. Most of which involve the complex interaction between a person and his/her work environment. Therefore, stress refers to the situation at which a person's skills and ability do not match with the work demands and requirements, and/or when the employees' needs are not fulfilled by the job environment (Ramirez et al., 1996:724). Baron defined stress as psychological and physiological discomfort that is experienced when work environment demands exceed a person's coping strategies (Baron, 1983:305). From the above it could be concluded that work-stress is helpful for the worker to cope effectively with the work requirements, but extended or continuous coping sometimes hurts the worker and may lead to unpleasant results especially if the requirements continuously exceeds the worker skills and abilities.

Symptoms of stress

There are certain signs and symptoms that reflect the existence of stress. Relevant literature classifies stress symptoms into physiological, emotional and behavioral. Physiological symptoms include the increase in blood pressure, breathing rate, heart beating rate, and sweating. Yet, if the stress is unbroken certain unpleasant and dangerous results such as heart attacks, increased cholesterol level, and ulcers may appear. The most common emotional symptoms are anxiety, tension, and depression, lack of interest, hopelessness, mental exhaustion, and low confidence. If stress level increases less job

satisfaction is expected. Among the most common work-related behavioral symptoms include decreased performance, absenteeism, difficulties in concentration and communication, more turnover rates, higher alcohol and drug abuse, unexpected behavior, and higher rate of smoking (DuBrin, 1984:163-64).

Sources of occupational-stress

Previous research revealed that there are many causes correlated to occupational-stress. According to some researchers, causes of occupational-stress may be found both within worker personality and within the work environment. A study, conducted in the UK, reported that work overload and influenced home-life; poor administration and resources; administrative responsibilities assumed; and dealing with patients' pain were perceived as sources of stress. In the same study, radiologists reported the highest level of burnout in terms of low personal accomplishment In addition, lack of clear direction concerning the organization goals was found to be among the significant causes of occupational stress. Role ambiguity, role conflict, and clarity of organizational goals were also found to be of significant relationship with occupational-stress.

Role ambiguity, role conflict and the job-nature and its effect of job demands on primary health care doctors' social life also correlated with occupational-stress. A study conducted on doctors in Scotland indicated that higher clinical workloads were related to higher stress (Deary et al., 1996:3).Responsibility for others, and career development were also found to be of significant relationship with occupational stress among doctors (Nusair and Deibageh, 1997:301).Undesired relationship with work colleagues was a significant source of stress (Glowinkowski and Cooper, 1986:177). The nature of hospital-job was also found to be a source of work stress; the fact that the employee may deal with communicable-disease patients causes a threat to the employee health.

Research has pointed out that a perception of the work environmental risks may increase occupational stress (Montgomery, 1995:445-450). Career planning and development were also reported to have significant influence on work-stress (Nusair and Deibageh, 1997:330).From the above studies it is clear that the most frequent causes of stress are listed under role conflict and ambiguity, workload, responsibility for the others, poor relationships with others, job conditions,

career planning and development. Role ambiguity arises out of being given inadequate information to perform a job properly. On the other hand, when roles and responsibilities contradict with each other role conflict emerges. Quantitative work overload arises when there is too much tasks to perform in a specific period of time. Yet, qualitative work overload occurs when the work requirements exceed worker's intellectual competence and skills. Responsibility for others can be too much to the extent it may contribute in causing work stress. Poor relationships with others lead to less trust and support between peers, subordinates, and superiors. Poor working conditions such as room temperature, noise, improper lighting, etc. can cause stress. Career planning and development include job security, promotions, worker transfers, and progress opportunities.

Outcomes of Occupational-stress

Previous research also revealed that there were costly negative outcomes of occupational stress. A lot of behavioral problems caused by occupational-related stress; among these problems undesirable relationships among work colleagues, increase rate of absenteeism, and gradual loss of self-confidence (Wilke etal., 1985:342-357). Another study covered diplomats of the American Board of Emergency Department (ABEM) showed that more than one quarter of the sample felt burned out or impaired, while 23.1% reported that they were planning to leave the practice within five years (Doan-Wiggins et al., 1995:556). Another study revealed that stressful nurses were more likely to leave their hospitals than those with less work-stress were (Bin Saeed, 1995:207). Stresses can also lead to health and behavioral problems such as heart and chest problems, consumption of alcohol and drugs (Al-Meer, 1995:212). Therefore, revealing the causes of occupational stress will help reducing the undesirable effects of work-stress.

Socio-demographic variables and Occupational-stress

In a study conducted in the United States it was found that ED doctors and nurses differ in mean stress levels (Perry et al., 2000:518). Many studies found that the level of occupational-stress vary according to differences in socio-demographic factors (Al-Fadli, 1999,Nusair and Deibageh, 1997, and Haines et al., 1991:212). A study revealed that the older the employee, the less occupational-stress level (Rathod et al., 2000:133), but the higher the educational level,

the more occupational-stress level (Haines et al., 1991:212). It was also found that being 55 years or less and being single were independent risk factors for burnout (Ramirez et al., 1996:724). Females were more likely to report being stressed (Rathod et al., 2000:133; and Al-Mishan, 2001:67).

III. Methods

Participants

This research was conducted in rural - urban hospitals that belong to the Ministry of Health of state of Utter Pradesh. Simple random sampling technique was used to choose five hospitals of Allahabad Region to be included in this study. The chosen hospitals were in different areas. Then stratified random sampling was used to represent the target population of doctors, nurses, allied staff, and administrators working in the hospitals. A structured questionnaire was developed and 700 were distributed based on the estimated distribution of each group (using the available distribution in Allahabad region out of it 441 were returned (63%) but 414 were valid.

The instrument

The study instrument or questionnaire consists of two parts. Part one included some questions about the demographic information including respondents' age, gender, job, educational level, experience, nationality, marital status, language at work, and first language. Part two included 39 statements cited in the literature as stress causes. In addition, the second part included a question to measure the level of stress among respondents. Another question about five common outcomes of stress was included in the second part as well.

The questionnaire was developed in a way that allows respondents to grade their responses on a five-point scale: strongly disagree=1, disagree=2, do not know=3, agree=4, and strongly agree=5. Three steps normally followed, in research, to increase the content validity of the questionnaire (Bauman, 1980:88); first, the items forming the questionnaire were developed after reviewing the relevant literature. Second, the comments and suggestions of ten hospital management postgraduate-students and

seven faculty members of the business administration, about the questionnaire were taken into consideration. Finally, ten hospital employees were asked to answer the questionnaire (pilot study).The suggestions and notes were also taken into consideration. The reliability of the questionnaire was measured using the coefficient alpha; it was 92.76%.

Data treatment

Respondents were given the questionnaire with answering instructions included in the covering letter. Data were entered and analyzed with the Statistical Package for Social Science (SPSS) for windows. Descriptive analysis used in this study included frequencies, percentages, means, and standard deviations. Inferential analysis included two independent samples t-test, ANOVA, Pearson correlation, and stepwise multiple regression. The significance level used for the inferential statistics was 0.05.

IV. Data Analysis

This section of the study focuses on data analysis. The analysis consists of socio demographic variables of the respondents, Stepwise multiple regression, ANOVA and t-test results, and Pearson correlation.

Socio-demographic variables of respondents

The age of participants in this study ranged from 22 to 60 years old with an average of 34 years and 7.5 years of standard deviation. Their experience ranged between one and 34 years with an average of 9 years and 7 years of standard deviation. Table (1) shows the frequency distribution of participants' socio-demographic variables.

Table (1) Frequency distribution of socio-demographic variables (n=414)

Variable	F	%
Gender : (1) Male (2) Female	253 157	61.71 38.30
Total	410	100%

Job :		
(1) Doctor	83	20.20
(2) Nurse	125	30.40
(3) Technicians	60	16.40
(4) Administrative	73	17.8
(5) Therapists	70	16.9
Total	**411**	**100%**
Educational level :		
(1) High school or less	28	6.8
(2) Diploma	133	32.5
(3) Bachelor	187	45.7
(4) Master	27	6.6
(5) Ph.D. or equivalent	34	8.3
Total	**409**	**100%**
Marital :		
(1) Married	273	66.3
(2) Not-married	139	33.7
Total	**412**	**100%**
Language at work:		
1. Urban	182	45.4
2. Rural	219	54.6
Total	**401**	**100%**
Work language differ from first language :		
(1) Yes	212	54.2
(2) No	179	45.8
Total	**391**	**100%**

Sources of Occupational-stress

In order to determine the significant variables or sources of work-stress, Stepwise Multiple Regression (SMR) was used. However, SMR was first diagnosed for multi co- linearity by using the Pearson's r between the independent variables in the model; the highest correlation value was less than 0.60. In addition, the conditional index (CI) was also tested, and the highest CI value was less than 30 (see Table (2)).Since all Pearson's r between each pair of independent variables did not exceed the value of 0.85 and the highest CI is less than 30 it could be concluded that there is no10serious multi-collinearity between the independent variables .

The results of the SMR revealed that only four causes were significantly related to work-stress among MOH hospital staff. The four causes explain 18.3% of the variance in the work-stress level. Table (2) shows the results of the SMR. It is clear that the first cause accounted for the variance in the dependent variable (work-stress level) was the insufficient technical facilities available to hospital staff (beta = 0.258, t =5.276, and p<0.001). The value of R^2 indicates that this cause is accounted for 12.3% of the variance in the work-stress level. The next cause accounted for the change in the occupational stress level was the absence of appreciation from the hospital management (beta =0.160, t =3.198, and p<0.01). It is accounted for 3.2% of the variance in the occupational-stress level. The third cause accounted for the change in the occupational stress- level was the long working hours (beta = 0.107, t =2.231, and p<0.05). Long working hours was found to be accounted for 1.8% of the variance in the occupational-stress level. Finally, the fourth causeways the short breaks (beta = 0.106, t =2.153, and p<0.05). Short break was found to be accounted for 0.7% of the variance in the work-stress level. Positive betas indicate that the four independent variables (causes) were positively related with the level of work stress.

From the above results it is very clear that shortage of technical facilities and absence of appreciation are alone accounted for more than 15% of the variation of occupational-stress. Therefore it is very important that hospital management pay all efforts to supply their hospital with the appropriate technical facilities. In addition, appreciation of good work and effort must be shown, and breaks period of time need to be reconsidered in order to reduce causes of work-stress.

Table (2) Results of Stepwise multiple regression

Independent variables	Beta	T	p-value	R^2	Condition Index
Insufficient technical facilities	0.258	5.276	0.000	0.123	5.540
Absence of appreciation	0.160	3.198	0.001	0.032	6.573
Having to work long hours	0.107	2.231	0.026	0.018	8.579
Short breaks	0.106	2.153	0.032	0.007	10.140
F=23.022 p-value=0.000 R=0.428 R^2=0.183					

Occupational-stress and socio demographic variables

As indicated in Table (3) it is true that occupational-stress was higher among doctors (stress level=4.04) and lower among hospital administrators (stress level=3.69), but ANOVA results revealed that the differences in work-stress levels between the various hospital staff represented in this study was not significant (F=1.382 and p>0.05). The same Table also showed that though the work-stress level was low among those holding postgraduate degrees, ANOVA results showed no significant differences between the respondent due to educational levels (F=0.941 and p>0.05).Results of t-tests included in Table (3) indicated that occupational-stress level is not influenced by gender, marital status, language at work, or whether the work language differ from the employee's first language (p>0.05). Yet, results showed a significant difference between urban & rural (t=-2.21 and p<0.05). The effect of job demands on hospital staff's social life could be seen as a source of stress.

Table (3) the differences in occupational-stress level due to socio-demographic variables (ANOVA and t-test)

Variable			Mean	SD	Test-value	p-value
Job	1	Doctor	4.04	0.96	1.382(F)	0.239
	2	Nurses	3.98	1.03		
	3	Technicians	3.89	1.08		
	4	Therapists	3.81	1.14		
	5	Administrators	3.69	0.96		
Qualification	1	High School or less	3.81	0.89	0.941(F)	0.440
	2	Diploma	3.95	1.05		
	3	University	3.91	1.04		
	4	Master	3.57	1.31		
	5	Ph.D.	3.70	1.02		
Region	1	Allahabad	3.99	0.96	-2.21(t)	0.028*
	0	Non-Allahabad	3.76	1.12		
Gender	1	Male	3.84	1.07	0.780(t)	0.436
	0	Female	3.92	1.01		
Marital status	1	Married	3.91	1.04	-0.88(t)	0.376
	0	Not married	3.81	1.07		
Language at work	1	Hindi	3.84	1.03	0.454(t))	0.650
	0	Others	3.89	1.08		
Work language and your language are the same	1	Yes	3.97	1.00	-1.948(t)	0.052
	0	No	3.76	1.11		

As shown in Table (4) age and experience of participants showed a significant negative correlation with occupational-stress level (p<0.01). That is, the older the employee the less work-stress is suffered and the more experience the employee has the less occupational stress is perceived. This is understandable because by time workers get more experience and become familiar with the hospital system and environment and hence become capable of coping with occupational-stress.

Table (4) Person correlation results between age, experience, and stress level

		Age	Experience
Stress level	Correlation	-0.145**	-0.162**
	P-value	0.005	0.003

** Correlation is significant at the 0.01 level

Outcomes of occupational-stress

Pearson correlation was conducted to test the relationship between the level of occupational-stress and the anticipated outcomes of stress. Results of correlation coefficients, included in Table (5), showed that the level of work-stress is significantly and positively correlated with: the occurrence of health problems ($r=0.50$ and $p<0.01$), changing the current hospital ($r=0.40$ and $p<0.01$), changing the job ($r=0.39$ and $p<0.01$), quitting the profession ($r=0.37$ and $p<0.01$), and interrupting relationship with co-workers ($r=0.29$ and $p<0.01$). The results confirm the fact

Table (5) Pearson s correlation coefficients between stress-level and stress anticipated results (n=414)

Due to occupational-stress are you	Person correlation	P-value
Planning to quit the practice	R=0.37**	0.000
Planning to change the job	R=0.39**	0.000
Planning to change the hospital	R=0.40**	0.000
Having some health problems	R=0.50**	0.000
Having bad relationships with coworkers	R=0.29**	0.009

V. Conclusion

Overall, the main finding is that all health professionals and hospital managers agree significantly that they experienced occupational-stress. This result is similar to those found in a study conducted on hospital consultants, general practitioners, and senior health service managers (Weinberg and Creed, 2000). It also supports the assumption that health sector employees are among the highest groups subjected to work stress. Knowing the significant positive correlation between occupational-stress level and costly negative outcome such as quitting the practice or changing the hospital or the job must ring a bell to all decision makers, especially Utter Pradesh faces very serious problems in health-related manpower. Results also indicated that occupational-stress was not influenced by the educational level, the gender, the marital status, the language of the employee. Yet, it was influenced by region since urban experienced higher level of work-stress. This might have

that occupational-stress may lead to costly negative outcomes. This goes along with many of the previous studies. The fact that respondents are hospital staff makes them able to detect health problems as an outcome of occupational-stress. However having health problems or bad relationships with coworkers, changing the job or the hospital, or even quitting the practice are very serious outcomes of occupational-stress that may bring down the quality of hospital services. Therefore work-stress needs to be given more attention and consideration by hospital management and researchers.

something to do with the employee's community and social obligations.

This result goes along with the importance of treating difficulties outside the work place in order to decrease the prevalence of anxiety and stress. Age and experience showed negative correlation with stress which could be interpreted by the fact that the older and experienced the worker, the more ability he/she has to cope with stress. Based on these results the hospital needs to work hard in order to have sufficient technical facilities. The current insufficient technical facilities could be improved with the implementation of the cooperative health insurance in Allahabad Region. Therefore, it is wise that the hospitals provide health services to non-eligible through the cooperative health insurance scheme. This will generate more financing ability to hospitals which allow them to improve the available technical facilities.

Good quality management requires hospital management to show appreciation whenever a good work is performed. Without such appreciation good performance employees will tend –by time to develop more stress and consequently decrease the quality and volume of their work. Providing enough break-time during the working hours is expected to reduce stress and therefore increases the productivity of hospital staff, otherwise stress leads to job dissatisfaction which is a major factor in the use of sick time (Brand, 2001:1-2).Providing enough break-time may automatically help in solving the problem of long working hours.

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PERCEPTION OF CUSTOMERS TOWARDS COMMERCIAL BANK MARKETING STRATEGIES

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Abstract

Without a sound and effective banking system in India it cannot have a healthy economy. The banking system of India should not only be hassle free but it should be able to meet new challenges posed by the technology and any other external and internal factors. For the past three decades India's banking system has several outstanding achievements to its credit. The most striking is its extensive reach. It is no longer confined to only metropolitans or cosmopolitans in India. In fact, Indian banking system has reached even to the remote corners of the country. This is one of the main reasons of India's growth process.

Key words: Customer perception, marketing strategies, banking, commercial banks.

I. Introduction

The Indian Banking industry, which is governed by the Banking Regulation Act of India, 1949 can be broadly classified into two major categories, non-scheduled banks and scheduled banks. Scheduled banks comprise commercial banks and the co-operative banks. In terms of ownership, commercial banks can be further grouped into nationalized banks, the State Bank of India and its group banks, regional rural banks and private sector banks (the old/ new domestic and foreign). These banks have over 67,000 branches spread across the country in every city and villages of all nook and corners of the land.

The first phase of financial reforms resulted in the nationalization of 14 major banks in1969 and resulted in a shift from Class banking to Mass banking. This in turn resulted in a significant growth in the geographical coverage of banks. Every bank had to earmark a minimum percentage of their loan portfolio to sectors identified as "priority sectors". The manufacturing sector also grew during the 1970s in protected environs and the banking sector was a critical source. The next wave of reforms saw the nationalization of 6 more commercial banks in 1980. Since then the number of scheduled commercial banks increased four-fold and the number of bank branches increased eight-fold. And that was not the limit of growth.

After the second phase of financial sector reforms and liberalization of the sector in the early nineties, the Public Sector Banks (PSB) s found it extremely difficult to compete with the new private sector banks and the foreign banks. The new private sector banks first made their appearance after the guidelines permitting them were issued in January 1993. Eight new private sector banks are presently in operation. These banks due to their late start have access to state-of-the-art technology, which in turn helps them to save on manpower costs. Although many major banks have started offering i-banking services, the slow pace will continue until the critical mass is achieved for PC, internet connections and telephones. However, the upsurge of IT professionals with growing demands is pressuring the government and bureaucracy in the country to support and develop new initiatives for a faster spread of i-banking. But then to there is a fear in mind of customer using internet as a medium for the banking transaction. Private and foreign banks are trying to turn more and more customer towards the usage of internet for the banking transaction. This study is basically to know the relation of various independent variables on the customer usage of various banking technologies available.

II. Review Of Literature

Mishra & Kiranmai (2009) in their study found that information technology is considered as the key driver for the changes taking place around the world. The evolution of e-banking started from the use of Automatic Teller Machines (ATMs) and telephone banking (tele-banking), direct bill payment, electronic fund transfer and the revolutionary online banking. The future of

electronic banking would be more interactive i.e., TV banking. The shift towards the involvement of the customers in the financial service with the help of technology, especially internet, has helped in reducing costs of financial institutions as well as clients/customers who use the service at anytime and from virtually anywhere with access to an internet connection.

Uppal (2009) in his study found that in the post-LPG (Liberalization, Privatization and Globalization) era and Information Technology (IT) era, transformation in Indian banks is taking place with different parameters and the contours of banking services are dynamically altering the face of banking, as banks are stepping towards e-banking from traditional banking. With different statistical tools such as weighted average method and ranking, the paper concludes that most of the customers of e-banks are satisfied with the different e-channels and their services, but the lack of awareness is a major obstacle in the spread of e-banking services. The paper also suggests some measures to make e-banking services more effective in the future.

Nandan et.al; (2008) in his paper discusses the concept of Internet Banking, perception of Internet bank customers, non-customers and issues of major concern in Internet banking. The state of Internet banking in India has been explored using various concepts like E-banking continuum, and gap analysis related to the various services and the security features offered. In order to have a clear and focused insight about the perceptions of users (and non-users) about Internet banking a survey was conducted. The findings of the survey provide valuable insights into concern for security, reasons for lower penetration, and likeliness of adoption, which have been used to make useful recommendations.

Singh & Malhotra (2004) in their study found that the tremendous advances in technology and the aggressive infusion of information technology had brought in a paradigm shift in banking operations. The purpose of this paper is to help fill significant gaps in knowledge about the Internet banking landscape in India. It investigates the profile of commercial banks that offer Internet banking, using univariate statistical analysis, relative to other commercial banks with respect to profitability, cost efficiency, and other characteristics. By the end of first quarter, 2004, differences between Internet and non-Internet banks had begun to emerge in funding, in sources of income and expenditures and in measures of performance. It was also found that the profitability and offering of Internet banking does not have any significant correlation.

Bradley & Stewart (2003) conducted a research in which they studied the factors driving the adoption of internet banking. The financial services environment has been subject to changes on many fronts. Technological change and the advent of the Internet are among the most dramatic and challenging areas of change for the sector. This paper looks at retail banking and its adoption of online banking, in particular the factors driving and inhibiting adoption by banks. An international Delphi study confirms the high level of importance of the Internet for retail banking. By 2011, it is expected that bank adoption of the Internet will be near universal. The key factors that are driving banks to adopt online banking are the adoption by other banks, competitive forces, consumer demand and the availability of technology.

III. Methodology

The study is a Descriptive Study and conducted on basis of perception of customers towards the commercial bank marketing strategies. To understand the performance and marketing strategies of commercial banks, the research was conducted. In total, 250 questionnaires were distributed in all the parts of Tiruchirappalli district, Tamil Nadu to the bank customers on convenient sampling. However, the valid response turned out to be 200 from the bank customers of commercial banks. The study was based on both primary and secondary data. Primary data was done through the structured questionnaire with direct, open-ended and closed-ended multiple choice questions containing demographic variables and bank marketing strategies. The researcher has framed the questionnaire on the basis of various reviews, personal interview with bank managers, marketing dimensions of 7 P's (marketing mix) and dimensions of service quality (SERVQUAL of Parasuraman, et al; 1998) in her study. Secondary data such as magazines, books on marketing of services, information from the net, banking sources, past researches, reviews, etc; were used.

Aim of the Study

To analyze the personal profiles that influences the customers' perception towards marketing strategies of commercial banks. And to explore the impact of marketing strategies on

private and nationalized banks and the factors that influences the customers to select the particular bank.

Limitations

The data collection will be through questionnaire only. The responds from the customers may not be accurate. Only 200 samples size has been taken for this study. So, if this study is conducted to maximum persons, it may give accurate result. Usually data collection requires more time.

IV. Results and Discussions

The following table clearly explains the frequency distribution and percentage analysis of the bank customers' perception towards the commercial bank marketing strategies.

Table: 1 Frequency Distribution of Bank customers perception towards commercial banks

Sl. No.	Characteristics of bank customers	Frequency (N=200)	Percentage (%)
1	Respondent's status in the family		
	Head of the family	86	43.0
	Wife	52	26.0
	Children	49	24.5
	Others	13	06.5
	Total	200	100.0
2	Gender of the bank customers		
	Male	123	61.5
	Female	77	38.5
	Total	200	100.0
3	Age of the bank customers		
	18 – 25	40	20.0
	26 – 35	51	25.5
	36 – 45	63	31.5
	46 – 60	29	14.5
	Above 60	17	08.5
	Total	200	100.0
4	Educational level of the bank customers		
	Below 10th Standard	20	10.0
	10 - 12th Standard	28	14.0
	Graduate	95	47.5
	Post Graduate and above	57	28.5
	Total	200	100.0
5	Occupation of the bank customers		
	Salaried	92	46.0
	Businessmen	58	29.0
	Student	33	16.5
	Housewife	17	08.5
	Total	200	100.0
6	Marital Status of the bank customers		
	Married	138	69.0
	Unmarried	62	31.0
	Total	200	100.0
7	Religion of the bank customers		
	Hindu	162	81.0
	Christian	28	14.0
	Muslim	10	5.0
	Total	200	100.0
8	Current Residence of the bank customers		

	Urban	102	51.0
	Semi – urban	42	21.0
	Rural	56	28.0
	Total	200	100.0
9	Type of account		
	Current account	25	12.5
	Savings account	124	62.0
	Fixed deposit	15	07.5
	Recurring deposit	36	18.0
	Total	200	100.0

Table: 2 Relationship between two variables

	Internet banking	Maximum withdrawal amount	Tele Banking	Impact of TV advertisement	Word of mouth advertising	Core Banking solutions	Efficiency of bank selling agents	Competency of the staff	Convenient location of ATM	Solving customer complaints
Internet banking	1									
Maximum withdrawal amount	0.870 (**)	1								
Tele Banking	0.956 (**)	0.964 (**)	1							
Impact of TV advertisement	0.929 (**)	0.731 (**)	0.926 (**)	1						
Word of mouth advertising	0.878 (**)	0.884 (**)	0.972 (**)	0.927 (**)	1					
Core banking solutions	0.946 (**)	0.945 (**)	0.972 (**)	0.927 (**)	0.958 (**)	1				
Efficiency of bank selling agents	0.928 (**)	0.938 (**)	0.950 (**)	0.946 (**)	0.939 (**)	0.947 (**)	1			
Competency of the staff	0.967 (**)	0.973 (**)	0.951 (**)	0.834 (**)	0.974 (**)	0.840 (**)	0.830 (**)	1		
Convenient location of ATM	0.736 (**)	0.933 (**)	0.922 (**)	0.902 (**)	0.931 (**)	0.917 (**)	0.929 (**)	0.945 (**)	1	
Solving customer complaints	0.948 (**)	0.865 (**)	0.986 (**)	0.929 (**)	0.966 (**)	0.778 (**)	0.955 (**)	0.955 (**)	0.923 (**)	1

*Note:*Significant at the 0.05 level (2-tailed)** Significant at the 0.01 level (2-tailed) S- Significant NS- Not Significant*

The above table clearly explains the strength of relationship between the two variables relating to the marketing strategies. Almost all the variables have strong positive relationship. Hence all the above said strategies must be given importance by the bankers and must verify that it works effectively.

Table: 3 Factors influence the customer perception towards the marketing strategies by commercial banks

Sl. No.	Factors influencing the bank Marketing Strategies	Mean Rank	Rank (Ascending Order)	Inferential Statistics
1	Location Convenience	5.48	3	
2	Account Security	4.95	1	
3	Easy accessibility	4.99	2	
4	Availability of online banking	6.59	4	
5	Mobile banking	6.64	5	N=493 χ^2 = 1703.69
6	Tele banking	8.14	9	
7	Better service and Friendly staff	7.48	8	df = 11
8	Greater spread of ATMs	6.82	6	
9	Bank's Image	6.91	7	P=0.000 **
10	Recommendations by friends/relatives	9.37	11	(S)
11	Employer's insistence for salary a/c	8.79	10	
	Type of Bank	1.83		

Note: * Significant at the 0.05 level (2-tailed)

** Significant at the 0.01 level (2-tailed)   S- Significant   NS- Not Significant

To find out whether there exist a significant difference between the customers' perception towards the factors that influence the marketing strategies of different types of Banks, Friedman test has been used. In the above table, it can be found that there exists a significant difference towards the customers' perception on the factors that influence the marketing strategies of different types of Banks (χ^2= 1703.69, p-value < 0.01). It can also be found that the high ranking factor is "Account security" having a mean rank of 4.95 followed by easy accessibility (4.99), locational convenience (5.48), availability of online banking (6.59), mobile banking (6.64), greater spreads of ATMs (6.82), bank's image (6.91), better service and friendly staff (7.48), tele banking (8.14), employer's insistence for salary a/c (8.79) and at last recommendations by friends and relatives (9.37). Even when the analysis is made on the types of bank, again account Security, is the major reason that influence the customer perception towards the marketing strategies adopted by banks. The researcher's finding is supported by Liao et al., (2003), with the customer perceptions towards internet banking and identified transaction security, transaction accuracy, user friendliness, and network speed as the critical factors for the

success in banking. Edris and Almahmeed (1997) conducted a study at Kuwait and concluded that the true determinants of bank selection decision made by business customers are more likely to bank attributes and the difference among banks in a given region with regard to each of these attributes.

V. Conclusion

The main aim of the banking industry is to serve their customer. The motive is to satisfy their customer needs. In commercial bank customers are increasing day to day. To retain their old customers and to get new customers the banks has to satisfy their customers. For Example, when a customer visits the bank to withdraw the money, the duty of the bank staffs are to give the money from their account as soon as possible. When a new technology has been introduced, the duty of the bank is to make aware of the new technology. Then they should provide seminars regarding how to use the new technology, the importance of new technology and the advantages of new technology. To serve better and quick the new technologies are introduced by the commercial Banks. Then it's important to identify the customer need from the banking industry. The

study was done by Phuong and Har (2000) for bank selection decisions in Singapore using the Analytical Hierarchy process through a study of banking preferences of college students. The findings indicated that the most important criteria affecting undergraduates' bank selection decisions are higher interest rate for saving, convenient location and overall quality of service. They are followed by the availability of self bank facilities, charges on services provided by banks, low interest rate on loans, long operating hours, availability of students' privileges and recommendations by friends and parents specifically. The bank customers considered overall quality of service more than twice as important as recommendations by parents/friends. Now all the existing technologies are used by both Nationalized and private banks. Even though they are eager to introduced new technology, many customers are not aware of technology, some customers are don't know how to use the existing technology like ATM, E-Banking, Mobile Banking and online shopping facilities, etc., The solution to this problem is that all banking industries should take needful steps to make aware of all technologies in banking industries to their customers.

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AN INSIGHT INTO VOCATIONAL EDUCATION BY OPEN UNIVERSITY AND ITS IMPACT ON YOUTH

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Abstract

As per the 2001 Census of India, population age 15-24 years accounts for 195 million of the 1,029 million of India's population. By 2011, this age group is expected to grow to 240 million (Office of the Registrar General, 2006) and account for a slightly higher proportion of the total population than in 2001.

According to the Team Lease Labour Report, 2007, 'Vocational education can be broadly defined as a training program, which prepares an individual for a specific career or occupation'. The key objective of vocational education is to help develop individuals' skills in very specific fields by giving them applied or concrete experience in specific vocations or trades. This not only makes them employable but also helps create opportunities for entrepreneurship. In this article an attempt has been made to study the present vocational education and training (VET) and analysis of delivery & operating system, the present status of non-formal VET. Open and Distance Learning has emerged as a powerful instrument for augmenting opportunities in the field of vocational education. The objectives of the study are to develop the competency and skills of the learners after completion of TNOU Vocational Education Programmes for their livelihood. This research paper also offers some meaningful suggestions to improve the efficient resource utilization, to achieve the targets set by the Government of India and Industries for achieving a stronger, skill enabled India.

Key words: Vocational Education and Training (VET), Tamil Nadu Open University (TNOU), Impact on Youth, Skill Acquisition, Identification of needs.

I. Introduction

Both vocational education and skills development have been known to increase productivity of individuals, profitability of employers and expansion of national development. A 'knowledgeable' workforce, one that is both highly skilled in a particular occupation and also exhibits flexibility, is seen as the most important human capital required for the development of a country.

Vocational and professional training system would have a major positive impact on national competitiveness. The Technical and Vocational Education is considered as an important measure for the development of trained labour force required for the socio-economic development of a country. Today it appears that only Open Universities have the potential to convert the ideal of Vocational Education to reality and nothing can be stand between the Open Universities and the willing learners. Open Universities are therefore a boon to the unemployed in India TNOU (Tamilnadu Open University) are chosen from the Tamilnadu, to cover a broad spectrum of the kinds of Vocational Programs being provided in the informal sector.

TNOU was established by an Act (No.27 of 2002) of the Tamil Nadu State Legislative Assembly. It is administered by the Government of Tamil Nadu. TNOU has been recognized by the University Grants Commission (UGC) under Section 2 (f) of the UGC Act, 1956. TNOU receives funds from the Distance Education Council (DEC), an apex coordinating agency established by the Union Ministry of Human Resources Development (MHRD).

The objective of the University is to reach the hitherto unreached with its attractive academic programmes through its novel Distance Mode. The programmes of the

University enable persons irrespective of their background, profession, place of stay, age etc., to acquire higher academic qualifications and qualify themselves for higher and more lucrative positions.

A standardised questionnaire was developed and the questionnaire was pilot tested by students

completed the vocational course conducted by TNOU. The data are analysed using the computer-based SPSS software. Data validation was carried out by the author when the interim survey report was made. Hypotheses are also tested based on the findings of the study, interpretations and conclusions are drawn.

The response rate is 100% (100/100). Male participants are 59 and females form the rest 41. On the age distribution factor, the participants with age below25 are 30%, age between 25 & 35 are 47% and above age 35 are 23%. With respect to the focus group namely youth, age group of 15 to 35, the response from 77 will be valid.

The collected data show a high degree of variability across the State which indicates that the practical part of the vocational course is well delivered in cities like Chennai, Madurai, Trichy and Coimbatore and lack a part in other centres.

II. Background

At present the capacity of skill development in India is around 3.1 million persons per year. The XI Five Year Plan envisions an increase in that capacity to 15 million annually. India has target of creating 500 million skilled workers by 2022. Thus, there is a need for increasing capacity and capability of skill development programs.

India does not currently have a nationally recognised qualifications framework in place. The structure of the vocational education system is fragmented, with 17 different organisations contributing to development, planning and overall management.

Management of the system is shared between central and state authorities – the National Council for vocational training (NCVT and SCVTs). Organisations and Authorities have clear mandates for their activities but a lack of communication and coordination of activity has lead to a system that is inefficient and not accountable. As a result, there is a lack of transparency and mobility of qualifications, which is something the Ministry of Labour and Employment are currently seeking to address.

Role of TNOU

Open and Distance Learning (ODL) has emerged as a powerful instrument for augmenting opportunities for higher education especially in the field of vocational education. The successful completion of Tamil Nadu Open University (TNOU)

Vocational Education Programmes helps the learners especially the rural, poor and downtrodden to earn their livelihood. In the present scenario where the employment opportunities are limited, the rural and down trodden people cannot compete with the competency level of the urban people in grabbing the opportunities available; vocational programmers will enhance their skills and knowledge for immediate employment particularly in the private sector. Well-developed practical manual in simple language, computer assisted teaching methods, life coping skills, communication skills, in-plant practical training and interactive radio counseling in local language are provided to the learners to get sufficient knowledge and boost the employment opportunities of weaker sections of the society in rural and urban Tamil Nadu

The specific aims of the study are:

The objectives of the present study have been presented below:

1. To identify the scale of the awareness of the term "Vocational Education"
2. To identify the attitude towards Vocational education among Youths
3. To measure the expectation of job quality with effect to Vocational Education
4. To study the impact of different ages of Youth (15 to 35 Yrs) towards Vocational education on the dimensions of Job orientation, self-employment and safety practices
5. To find out the influence of "GENDER" category of Youth on perceived impact towards the dimensions of Vocational Education
6. To study the occupational status of Youth on perceived impact towards the dimensions of Vocational Education
7. To find out the impact of monthly income of the Family on perceived impact towards the dimensions of Vocational Education
8. To study the enrolled Youth by giving present condition, rating on whether the youth are acquiring training skills, industry knowledge or both?

Whether you receive up-to-date skills?

Is frequent on the job training is imparted?

Does Vocational education & Training get employees "workplace" ready?
How Vocational education & Training is regarded (ESTEEM)?
Balance between theoretical and practical learning in the present
Does this program what employers want?
Is there a need to increase the duration of the course?

III. Methods and materials

The Research conducted in three stages: Desk Research, Qualitative Research (focus groups and in-depth interviews) and Quantitative Survey. For Quantitative phase the student data are scrutinized and Questionnaire are sent to 100 respondents. Tools used in this Research are Questionnaire with Likert Method (3Point / 5Point) and the Responses analyzed with SPSS software Version 15.0

The sample size is 100 and it is selected from the database of Enrolment in Tamilnadu Open University. The respondents are selected in number and gender, in such a way that they represent the ratio of enrolment in specialization

diplomas. The Geographical data is not scrutinized and hence they represent the random selection.

The data for the analysis are collected through: Interactions with learners through e-mail, and by direct interview with 100 learners of several of the Vocational Programme Centre. These data are analysed by statistics to find out their competency skills, employment status and social and economic status.

IV. Results and Discussion

Descriptive Analysis on Sample

Demographic features of the sample

Target age group was fixed from 15 to 35 years, whereas respondents selected from age of 20 to 55 years. On the age distribution factor, the participants with age below 25 are 30%, age between 25 & 35 are 47% and above age 35 are 23%. With respect to the focus group namely youth, age group of 15 to 35, the response from 77 will be valid.

Table 1: Demographic features

Demographic features	Frequency	Percentage
Age group		
Below 25	30	30
25-35	47	47
Above 35	23	23
	100	100
Gender		
Male	59	59
Female	41	41
	100	100
Employment status		
Employed	75	75
Unemployed	25	25
	100	100
Monthly Income		
No income	25	25
Below 10000	38	38
Above 10000	37	37
	100	100

Inferential Analysis on Sample

Hypothesis I

Null Hypothesis: There is no significant difference between Male and Female with regard to Skill Acquisition.

Table 2: t test for significant difference between Male and female with respect to skill acquisition

Gender	Mean	SD	t value	P value
Male	48.92	4.43	3.830	0.000 **
Female	45.44	4.50		

Note: ** denotes significance at 1% level.

Since P value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence there is significance difference between male and female with regard to skill acquisition. Based on mean square, male students have acquired more skill than female students. Reason may be the fact that the female students are not perceived the Course as a job acquiring tool. Serious approach by the male student with the only idea to acquire/get promoted can be the reason.

Hypothesis II - *Null Hypothesis: There is no significant difference between Employed and Unemployed with regard to Skill Acquisition.*

Table 3: t test for significant difference between Employed and Unemployed with regard to skill acquisition

Current Employment Status	Mean	S. D	t value	P value
Employed	48.40	3.78	3.492	0.000**
Unemployed	44.76	6.24		

Note: ** denotes significance at 1% level.

Since P value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence there is significance difference between Employed and Unemployed with regard to skill acquisition. Based on mean square, employed students have acquired more skill than unemployed students. Reason may be the fact that the employed students had more practical inputs in the present situation and they can put to practical.

Hypothesis III - *Null Hypothesis: There is no significant difference between Age group with regard to Identification of Needs.*

Table 4: ANOVA to test significant difference between age groups with respect to identification of Needs.

Age group in years	Mean	S.D	F value	P value
Below 25	22.2 □	6.442	3.22	0.044*
25-35	25.49 □□	7.342		
Above 35	26.96 □	8.997		

Note: 1. * denotes significant at 5% level

Different alphabet between age group denotes significant at 5% level using Duncan Multiple Range Test (DMRT).

Since P value is less than 0.05, the null hypothesis is rejected at 5% level of significance. Hence conclude that there is significance difference between Age group with regard to identification of needs. Based on Duncan Multiple Range Test (DMRT) the age group below 25 is significantly differ with the age group of above35 at 5% level in identification of needs, but the age

group of 25 – 35 is not significantly differ with other age groups, in identifying the needs.

Hypothesis IV – *Null Hypothesis: There is no significant difference between Mean Ranks with respect to Skill Acquisition.*

Table 5: Friedman test for significant difference between Mean Ranks with respect to Skill Acquisition

Skill acquisition	Mean Rank	Chi-Square	P value
The training adequately prepared for work	7.27		
Previous employer / former employer is/was satisfied with my level of knowledge	7.17		
Easy for me to get a job	5.74		
Can easily be trained to improve the level of skill needed	7.10		
Find to be very effective in my current job	6.75		
Can easily move to other employers within my area of specialization	6.52	44.372	0.000**
The technology skills learned are complete and up to date	6.13		
Acquired skill of finishing to required measurement	6.62		
Acquired skill of computing –handling measurements and calculations	6.18		
Acquired the skill of manual handling tools and equipments with ease	6.13		
Acquired the skill of finishing – neat finishing	6.34		
Can adopt safety practices -steps and procedures at workplace	6.10		

Note** denotes significance at 1% level.

Since P value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence there is significance difference between Mean Rank towards Skill Acquisition. The confidence level with the student is proved to be increase to optimum level and hence the confidence reflects as the skill acquisition.

Adequacy in skill training ranks the first which shows the VET is precisely planned and imparted. Hypothesis V – *Null Hypothesis: There is no significant difference between Mean Rank with respect to identification of need for quality training.*

Table 6: Friedman test for significant difference between Mean Rank with respect to identification of needs for quality training

Identification of needs for quality training	Mean Rank	Chi-Square Value	P value
Knowledge (theory)	6.96		
Training in practical skills	8.00		
Industrial attachments	8.32		
Course content	6.39		
Instructional manuals	6.11		
Textbooks	6.00		
Workshop equipment	6.78	130.92	0.000**
Laboratory work	6.78		
Teaching and delivery methods	6.47		
Instructor's knowledge of theory	5.87		
Instructor's practical skills	5.76		
Increase duration of training	4.60		

Note** denotes significance at 1% level.

Since P value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence there is significance difference between Mean Rank with respect to identification of needs for quality training. Student feel that presently the needs are identified correctly but the theory content needs to be revised according to the employer's need as well with the ever-expanding field. The instructor's knowledge of the theory is also to be updated and hence 'Train the Trainer' programs are needed. The duration of the training is to be increased, according to the student may be because of the fact that the students are working and studying concurrently.

V. Conclusion

Male students (48.92%) have acquired more skill than female students (45.44%) thru this Distance mode of Vocational Education and Training. Reason is the fact that the female students are not perceived the Course as a job acquiring tool. Serious approach by the male student with the only idea to acquire/get promoted can be the reason.

75% of the trainees studied vocational courses are employed which indicates that employment opportunities are adequate and hence they are absorbed. Also it is observed that the respondents are studying the vocational courses as an up gradation process. This fact is substantiated with the income factor, in which below Rs.10000 p.m are 38% and more equally 37% are having income of above Rs.10000 p.m.

22% of the students selected the Health Assistant program and thus it can be interoperated as the health education ranks first in vocational courses, followed by Four Wheeler mechanism, desktop publishing and Media Art, thus reflecting the potential field of Health sector, Automobile sector, Journal & Publishing sector and Entertainment sector. The study also indicates that the respondents waited only 6-2 months to get employed and also data shows that only 25% of the trainees waited more than 24 months and declared unemployed. The study reveals the fact that there is no course offered by the TNOU on Agriculture, Forestry and Fisheries.

41% respondents not contacted any employers as it shows that they had opted to study while they earn. The answer to the query that how did they know about the job shows that 57% acquainted with the present employer through Friends and also 25% didn't answer reiterating the fact that they learned while they are in the job.

Also 61% of the respondents mentioned that they are employed in private sector and there in no employment availed in public sector and this reveals that public sector doesn't encourage the recruitment thru this vocational education channel.

The query on the reason for leaving the previous employment pointed out the fact that 34% of the respondents left, on the reason seeking improved wage. Also it is to be mentioned that only 4% mentioned the poor working condition, which is to be interpreted that most of the employers try to maintain a good working condition to attract and retain the employees. 47% of the trainees said that they are still in the area of training, thus adding strength to vocational courses offered by non-formal mode of education.

On the question of Why did you change your career, the inference of earlier query that only 4% mentioned the poor working condition, is confirmed by the fact that no one had mentioned the poor working condition.

In the section on the difficulties encountered in looking for a job, only 4% of the respondents mentioned 'takes too long to find one', 16% gave the reason that offered job may not fit in the qualification they got thru the TNOU, 23% mentioned that their lack of work experience was the difficulty in finding a job and 57% of the respondents mentioned other reason including women respondent's marriage, entrepreneurial efforts by some of the respondents, lack of recognition of the TNOU certificate, etc..

There is significance difference between Employed and Unemployed with regard to skill acquisition. Based on mean square, employed students have acquired more skill than unemployed students. Reason may be the fact that the employed students had more practical inputs in the present situation and they can put to practical.

The age group below 25 is significantly differ with the age group of above 35 at 5% level in identification of needs, but the age group of 25 – 35 is not significantly differ with other age groups, in identifying the needs.

The confidence level with the student is proved to be increase to optimum level and hence the confidence reflects as the skill acquisition. Adequacy in skill training ranks the first which shows the VET is precisely planned and imparted.

It is suggested by the respondents that presently, the needs are identified correctly but the theory content needs to be revised according to the employer's need as well with the ever-expanding field. The instructor's knowledge of the theory is also to be updated. The technological advances were to be appraised to them and hence 'Train the Trainer' programs are needed. The duration of the training is to be increased, according to the respondents, because of the fact that the students are working and studying concurrently.

It is proved to say that Vocational Education thru Open University, specifically TNOU is marching towards the goal of stimulating the economic development of the disadvantaged group through implementing VEP and thus addresses the current economic and employment situation challenges, helps to build a stronger and skill enabled India.

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THE CHANGING SCENARIO OF INDIAN RURAL MARKETING: A CASE STUDY OF MYSORE DISTRICT

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Abstract

The economic reform of Indian economy competition has increased and it has changed the business environment, which now requires business re-engineering. Liberalization of Indian economy helps to the consumer's to improve their scope of choice, so therefore the competition has become intense. As a result Urban Markets have almost been saturated with the products. Present study purports to review changing scenario of Indian rural marketing, emerging trends in rural marketing, analyzing the perspective and issues in the context of changed business environment and new policy regime. The study is based on both primary and secondary data. The primary data is collected by survey method from the study area. This study has selected six villages as sample from Mysore district for analysis. Collected primary data were analyzed by using descriptive statistics, namely Tabular and Graphical data analysis methods. The study also employed some non-parametric test.

The awareness test shows that most of the selected brands are well known to the customers. Price gets second position after quality as most dominant factor. The medium income group is the most price conscious group and the high income group is more concerned about the company image. The area-wise differences are also important when selecting specific areas for marketing activities. Self- testing is the only important factor to satisfy the customers about the quality.

Key Words: Economic reforms, Liberalisation, Rural Market, FMCG and Business

I. Introduction

The world economic scenario has undergone a metamorphic change. There are several forces, which are moving the world towards a single economy. Advances in transport and communications and the technology revolution have reshaped competition, helped reduce costs, improved production methods and make products available for world-wide distribution. The Indian rural markets, about 12 per cent of the world consumers and 126 million households, present huge potential for marketing of products and services. For the marketing of products and services in rural India, there is a wide network of village shops, haats and fairs, and regulated markets. Again, traditional markets such as haats, (periodic markets) fairs, mobile hawkers, etc., are proved to be potential marketing canters with high commercial value. Significantly, recent trends in rural retailing show positive indicators and scope for new brands and products as far as penetration and distribution of goods and services in rural areas are concerned.

II. Review of Literature

Literature on the relative effectiveness of the different elements of the marketing mix is either in the form of normative statements or case studies of successful strategies, (Misra, Kumar, Rajan, all 1992). These normative statements are at best hypotheses. Again the successful strategies described are useful only as starting points of research as the variables and the relationships indicated have limited generalize ability and also replication is not possible. Studies on promotion effectiveness can be grouped into studies on the media and on the effectiveness of a promotion mix. There are quite a few studies that describe the media used by rural marketers or the media that are available to them (Misra, Rajan, Chatterjee, Reddy, Rajendran, all 1992). These studies usefully list the different media that could be used by the marketer but they do not help in deciding on the one to be used. The use of the media by consumers is examined by Sen and Das (1992). The paper contains an indirect measure of the effectiveness of the media. Chandra (1992) examines the influence of the media; he compares the effectiveness of posters and printed literature

with interpersonal channels. The study is restricted not only because of the media examined, but also because of the context of the study which is family planning messages. This reduces the utility and generalizability of the study. Grover and Grover (1992) examine the use of the synchronized tape-cum-slide projector and the knowledge retained after exposure. Reading of leaflets distributed after exposure was also examined. The specialized nature of the media considered and the absence of comparisons limit utility of their findings. Dr. M Rajashekhar (1995), in his paper "Segmentation of a Rural Market possibilities and Pitfalls" he analyse it is a well known fact that the population of rural India accounts for nearly 68% of the total population but which in fact to our surprise consumes only one quarter share of total consumer goods in India. Vijay Laxmi Gupta (1981), in her paper "Rural Marketing: A New Line of functions of Marketing" she argued rural marketing a new line of functions of marketing has undergone a tremendous change in recent years. Marketing is being rapidly transformed from traditional business to a profession, based on systematized body of knowledge. Kameshwar Mishra (2004), in his paper "Accessing the Rural Markets" has analyzed targeting the prospective buyers. The potential consumers being the very first instance of any seller will shift from more metro or urban population to the rural mass of the country since last decade. Geoffrey Jack Barton. (2004), in his study, From Gandhi to Google: Can Rural Markets Eradicate Poverty. This talk looks over the history and role of the Rural Market from the time of Gandhi to this age of Google. Seen at first

as agencies for social change and economic survival of rural village poor, the Rural Markets of the Gandhi era succeeded in some ways but failed in others.

Objectives

Present study purports to review the dynamics of rural marketing, changing scenario of Indian rural marketing, emerging trends in rural marketing, analyzing the perspective and issues in the context of changed business environment and new policy regime.

III. Methodology

The study is based on both primary and secondary data. The primary data is collected by survey method from the study area. This study has selected six villages as sample from Mysore district for analysis. Collected primary data were analyzed by using descriptive statistics, namely

Tabular and Graphical data analysis methods. The study also employed some non-parametric test such as Kolmogorov-Smirnov Test, Chi-square Test, and Spearman Rank Correlation Coefficient for testing differences. The study also applied logic regression model (Binary qualitative dependent variable model) to assess the impact of socio-economic factors.

Rural Markets ˘ Classification of Goods and Services

Depending upon the tangibility and durability, the market for products and services could be broadly classified into five categories.

1. Market for household consumer durable goods
2. Market for consumer food items
3. Market for consumer non-food items
4. Market for agricultural inputs and machinery
5. Market for services such as banking and insurance

The demand for certain items like cycles and washing soaps is mainly in rural areas whereas products such as VCR and washing machines are predominantly sold in urban areas. The market for agricultural inputs that is fertilizers, seeds and pesticides is mainly in rural areas and has been well established. Therefore we can look at rural market as consumers of goods and services as well as of agricultural inputs.

1. Markets for consumer durable goods
   Radio, TV, refrigerators, fans, electric irons, stereo, VCP/VCD/DVD/MP3, Phone/Mobile, Cable connection, Bicycles, Two Wheeler and others like Bullock carts.

2. Markets for House hold consumer food items.Cooking oils, Iodized salt, tea, coffee, healthy drinks, biscuits and chocolates.

3. Markets for House hold consumer nonfood items Toilet soaps, Washing cakes/bar, Tooth paste, Shampoo, Talcum powder, Face creams, Lipstick and Hair oils

4. Markets for Agricultural inputs and machinery Seeds (High yielding and hybrid seeds of paddy, cotton, vegetables etc.,) Fertilizers, Fertilizers, Bio-fertilizers, Pesticides, Tractors, Tillers and Four Wheelers.

5. Market for services Telecommunication, Insurance and Banking

IV. Results and Discussion

Village Wise Market Position

The present study, an overall market of the leading brands has been measured for different product categories in different village-wise valid for the time of survey was conducted. To increase the reliability of the estimates, interval estimation has been done which shows some of the brands with overlapping market share estimates. This clearly indicates that the ranks given to different brands may not necessarily be true. For example, Lifebuoy and Lux (Toilet Soap), Wheel and Rin Supreme (Washing Soap), Ponds and Spinz (Talcum Powder), Fair and Lovely and Fare Ever (Face Creams) are holding a position closer to each other and hence may have different ranks in reality.

To test the significance of village wise difference in market share, K-S test has been used which shows the difference in the share of the following brands.

Sunpure (Cooking Oil): Higher in Yelawala and Lower in Bherya

Refined Oil (Cooking Oil): Higher in Madapura and Lower in Yelawala

Annapoorna (Iodized Salt): Higher in Yelawala and Lower in Madapura

Tata Salt (Iodized Salt): Higher in Jaipura and Lower in Hommaragahally

3 Roses (Tea): Higher in Yelawala and Lower in Hommaragahally

Lux (Toilet Soap): Higher in Jaipura and Lower in Hommaragahally and Bherya

Rin Supreme (Washing Soap): Higher in Jaipura and Lower in Madapura

Colgate (Tooth Paste): Higher in Yelawala and Lower in Hommaragahally

Ponds (Talcum Powder): Very high in Yelawala and Very low in Hampapura

Fair and Lovely (Face Cream): Very high in Yelawala and very low in Hommaragahally and Hampapura.

In rest of the cases, the village wise difference is insignificant. The area-wise different may either because of the weakness in the distribution network or because of the lack of interest of the marketer in the promotion of these brands in rural areas.

Brand Purchase Decision

This part deals with the brand purchase decision of different products, different villages and different income group. In the process of purchase decision, the consumer considers the sets of alternative solutions or more technically evoked sets as Howard and Seth call it. Narayana and Markin refine the concept by recognizing a few more sets on the way to a purchase decision. The total set represents all the brands available in the market whether or not the buyer knows about them. The total set can be divided into the awareness set (those brands that consumer recalls) and the unawareness set. Of the brands that consumer recalls, only some of them meet his buying criteria and they constitute his consideration (or evoked) set, the others are related to an infeasible set. As consumer gives more thought to these brands, a few of the brands remain strong choice and constitute his choice set, the others being relegated to a non- choice set. He carefully evaluates the brands in the choice set and them makes his final decision. The brand purchase decision is given in the following tables.

Table: 1 Purchases of Low-priced and High-priced House hold consumer food item Brands

Product	Low-priced Brand	Percentage of Buying	High-priced Brand	Percentage of Buying
Cooking Oils	Refined oil	25.2	Sunpure	36.7
Iodized Salt	MSP	36.7	Tata Salt	12.4
Tea	3 Roses	23.3	Kanan Devan	3.3
Coffee	Local	48.1	Bru	18.1
Healthy Drinks	Lemon	27.6	Fruit Juice	3.8

Sources: Collected from field survey

Table: 2   Purchases of Low-priced and High-priced Brands in House hold Consumer non food items

Product	Low-priced Brand	Percentage of Buying	High-priced Brand	Percentage of Buying
Toilet Soaps	Life Boy	55.2	Mysore Sandal	11.9
Washing Soaps	Wheel	38.6	Rin Supreme	19.5
Tooth paste	Colgate	55.2	Close up	11.4
Talcum Powder	Ponds	59.0	Lakme	3.8
Face Creams	Fair & Lovely	46.7	Lacto lemon	6.2
Lipstick	Lakme	7.1	Sweet wear	0.95
Hair oil	Coconut oil	36.2	Navartna	4.3

Sources: Collected from field survey

Table 1 and 2 indicates the purchasing level in the low-priced and the high-priced brand of different products. The study employed Spearman's Rank Correlation test for testing the difference in the level of low price and high price brands. The test of difference in two proportions proves a difference for all the products except for cooking oil where the purchasing level is almost the same for the two brands. But the difference does not seem to be related with price of the brand, as the purchase in some products is more of the high-priced brand and in others of the low-priced brands. The Spearman's Rank Correlation test for ranks in the two sets of the products gives r_s = .095 which also indicates no relation of purchases with the price of the brand. Any brand whether low-priced or high-priced, may get included in the purchases set and subsequently in the choice set of customers. Totally in rural area the consumers were buying highest low priced brands, because they were having low purchasing power.

Table: 3 House hold consumer food item Brands users in different Villages (All Brands Combined)

Brand Users	No. of respondents in different villages					
	Yelawala	Jaipura	Madapura	Hommaragally	Hampapura	Bherya
Users No.	123	74	86	53	58	80
Percentages	70.28	42.28	49.14	30.28	33.14	45.71
Not Users No.	52	101	89	122	117	95
Percentages	29.72	57.72	50.86	69.72	66.86	54.29
Total No.	175	175	175	175	175	175
Percentage	100	100	100	100	100	100

Sources: Collected from field survey

The village-wise difference in brand user's level has been shown in table 3 The chi-square test shows that the difference across the villages is very significant (calculated value of χ^2 = 60.68, df = 4). The users' level of the selected brands is very low, 45.13 per cent of overall users (all villages together). In Yelawala village brand users level is higher (70.28 per cent) than other villages.

The low brand users may be attributed to the negligence of the marketers towards those areas and gives an opportunity to others (mainly to local and small firms) to capture the market. Whereas the higher brand users shows the potential for sales of those brands there. This calls for a higher level of effort to make these brands the favorites of consumers.

Table: 4 House hold Consumer non food items Brands users in different Village (All Brands Combined)

Brand Users	No. of respondents in different villages					
	Yelawala	Jaipura	Madapura	Hommaragally	Hampapura	Bherya
Users No.	196	174	166	168	144	174
Percentages	80	71.02	67.75	68.57	58.77	71.02
Not Users No	49	71	79	77	101	71
Percentages	20	28.98	32.25	31.43	41.23	28.98
Total No.	245	245	245	245	245	245
Percentage	100	100	100	100	100	100

Sources: Collected from field survey

The village-wise difference Households Consumer non food items in brand user's level has been shown in table 4 The chi-square test shows it very significant (calculated value of χ^2 = 60.68, df = 4). The users level of the selected brands is very low in 69.52 per cent overall users (all villages together). In Yelawala brand users level is higher (80 per cent) than other villages and in Hampapura brand users level is lower (58.77 per cent) than other villages.

Table: 5 The dominant reasons for brand choice- product-wise (House hold consumer food item)

The Dominant reason	No. of respondents mentioned for different products							
	Cooking oil	Iodized salt	Tea	Coffee	Healthy Drinks	Biscuits	Chocolates	Total
Price	5.9	7.3	6.8	7.2	3.3	3. 3	10.3	6.3
Quality	74.7	71.1	71.7	70.3	75.7	77. 9	65.7	72.5
Availability	5.0	6.4	8.6	6.4	5.7	6.6	10.0	6.9
Company Image	10.3	9.7	7.8	11.8	8.5	7.9	11.2	9.6
Brand Image	4.1	5.5	5.1	4.3	6.8	4.3	2.8	4.7

Sources: Collected from field survey

Table: 5.1 Dominant reasons for brand choice- product-wise (House hold Consumer non food items)

The Dominant reason	No. of respondents mentioned for different products								
	Toilet Soap	Washing Soap	Tooth Paste	Shampoo	Talcum Powder	Face Cream	Lipstick	Hair oil	Total
Price	6.5	10.2	7.1	8.1	5.2	4.3	4.5	5.3	6.3
Quality	71.7	70.3	71.7	70.2	72.3	74.7	79.3	71.7	72.5
Availability	8.5	7.0	6.3	8.1	5.6	3.9	4.5	8.0	6.9
Company Image	8.5	9.0	10.4	8.2	12.1	10.3	7.4	11.2	9.6
Brand Image	4.8	3.5	4.5	5.4	4.8	6.8	4.3	3.8	4.7

Sources: Collected from field survey

Table: 6 Dominant reasons for brand choice ˘ Village-wise (Both House hold consumer food item and non-Food items combined)

The Dominant reason	No. of respondents Mentioned in different Income groups				
	Low	Medium	High	Very high	Total
Price	15.8	5.3	4.2	1.3	6.3
Quality	64.8	71.8	76.4	76.2	72.5
Availability	10.1	7.2	6.1	3.3	6.9
Company Image	6.9	9.6	10.0	10.3	9.6
Brand Image	2.4	3.5	3.3	8.9	4.7

Sources: Collected from field survey

Table: 7 Dominant reasons for brand choice in different income groups (Both House hold consumer food item and non-food items combined)

The Dominant reason	No. of respondents in different villages						
	Yelawala	Jaipura	Madapura	Hommaragally	Hampapura	Bherya	Total
Price	4.2	4.8	6.6	10.1	8.6	5.3	6.3
Quality	73.8	72.3	77.5	73.8	66.3	71.2	72.5
Availability	5.0	6.4	4.2	4.6	7.4	5.3	6.9
Company Image	11.9	10.4	7.1	8.8	13.9	12.4	9.6
Brand Image	5.1	6.1	4.6	2.7	3.8	5.8	4.7

Sources: Collected from field survey

The dominant reason why the consumers had purchased a certain brand has been enquired and analyzed in Tables. 4, 5, 6 and 7 The overall estimates (all products and villages combined) show that 72.5 per cent consumers purchased for quality, 9.6 per cent for company image, 6.3 per cent for price advantage, 6.9 per cent for availability factor and 4.7 per cent for brand image. The interval estimates for the above factors (with 95 per cent confidence level) are (in the same order) 65.3 to 78.5, 7.1 to 15.9, 4.2 to 11.1, 3.3 to 6.4 and 2.7 to 6.1.

The K. S. test applied on table 4.31 and 4.32 checks the product-wise difference in it and finds no significant difference in estimates of quality and company image factors. These two factors alone represent 82.1 per cent customers. Rest of the proportion distributed on the other factors, though differs product-wise but very small, is of little importance (details in the Table 4 and 5).

Using chi-square test on Table 6 villages-wise difference in the position of these factors are also seen (calculated value of χ^2 = 71.64, df = 16). The proportion telling quality is more regarded in Madapura (H.D.Kote taluk), and less in Hampapura (K.R. Nagar taluk) and little less in Bherya and Hommaragahally. Similar difference for other factors may also be seen in table 6.

Table 7 shows income group-wise difference in the dominance of a factor in the brand choice. The chi-square test shows its close relation with income (calculated value of χ^2 = 391.28, df = 16). The proportion telling quality as dominant purchase reason is highest in high income group (82.9 per cent) and lowest in low income (58.8 per cent). The proportion mentioned price factor is highest (28.8 per cent) in low income group and lowest in very high income group (3.7 per cent). The quality, however, remains the dominant brand-choice factor in the entire income group for majority of customers. The other factors receive attention only by a small proportion of customers.

The analysis determines that people purchase a brand mainly because of its attributes (quality). The conclusion may be drawn that marketers should concentrate mainly on product attributes rather than price, image etc, which come only next to quality in the final brand choice decision.

Sources of Purchasing

In the present study, related to sources of purchasing of the study area in the different product-wise and in the different village-wise. The sources of purchasing is given in the following tables:

Table: 8 Sources of Purchase for Rural buyers - product-wise (House hold consumer food item)

Source	No. of Respondents used in different product category							
	Cooking oil	Iodized salt	Tea	Coffee	Healthy Drinks	Biscuits	Chocolates	Total
City Shop	34.8	23.6	30.7	32.9	39.5	17.4	12.9	27.4
Village Shop	65.2	76.4	62.8	63.5	56.0	82.6	84.5	70.4
Hawkers	00	00	6.5	3.6	4.5	00	2.6	2.2
Total	100	100	100	100	100	100	100	100

Sources: Collected from field survey

Table: 9 Sources of Purchase for Rural buyers - product-wise (Households Consumer non food items)

Source	No. of Respondents used in different product category								
	Toilet Soap	Washing Soap	Tooth Paste	Shampoo	Talcum Powder	Face Cream	Lipstick	Hair oil	Total
City Shop	28.7	24.2	16.4	8.6	12.5	15.0	82.3	32.0	27.4
Village Shop	71.3	75.8	83.6	91.4	81.7	81.8	17.7	68.0	70.4
Hawkers	00	00	00	00	5.8	3.2	00	8.3	2.2
Total	100	100	100	100	100	100	100	100	100

Sources: Collected from field survey

Table: 10 Sources of Purchase for Rural buyers ˇ Village-wise (Both House hold consumer food item and non food items combined)

Sources: Collected from field survey

	No. of respondents using in different villages						
	Yelawala	Jaipura	Madapura	Hommaragally	Hampapura	Bherya	Total
City Shop	55.6	53.2	15.1	12.5	16.8	13	27.4
Village Shop	42.9	45.0	82.8	84.3	81.0	84.2	70.4
Hawkers	1.5	1.8	2.1	3.2	2.2	2.8	2.2
Total	100	100	100	100	100	100	100

Tables 8, 9 and 10 indicate the sources of purchase. 27.4 per cent of such purchases are made from the nearby cities or towns. Remaining 70.4 percent purchases are made from the local shops and 2.2 percent are made from the hawkers selling in the villages. Interval estimates with 95 percent confidence level are 25.6-29.2 per cent for city purchases 68.6-72.2 per cent for village shop purchases and 1.4-3.0 per cent for hawker's purchases. These ratios are, however, different for different products and villages of the market.

Chi-square test shows product-wise difference as very significant (calculated χ^2 value = 356.6) and village-wise difference is also significant (calculated χ^2 value= 25.5). The proportion of city purchase is highest in case of Lipstick (82.3 per cent) followed by Hair oil (32 per cent), Toilet soaps (28.7 per cent) and Washing soaps (24.2 per cent). This proportion is lowest in Shampoo, Talcum powder, Face Cream and Tooth paste (8.6 percent, 12.5 percent, 15 per cent and 16.4 per cent respectively). The use of hawkers is very less percentage in this study area. This phenomenon clearly indicates that the lack of confidence in rural buyers on local sources is more in case of food items than in case of non food products.

Area-wise difference shown in table 10 indicates higher rate of city purchase in 55.6 per cent in Yelawala and 53.2 per cent in Jaipura than the other villages. The proportion of purchases from hawkers is also slightly higher in Hommaragally (3.2 per cent and Betray (2.8 per cent) than in Mysore Taluk (Yelawala and Jaipura). This increases the local purchase ratio in Mysore Taluk (Yelawala and Jaipura) from H.D. Kote taluk (Madapura and Hommaragally). This may be attributed to the greater backwardness in the rural areas of H.D. Kote taluk than those of Mysore taluk.

An action plan is therefore required to approach rural buyers through the city shops and gradually increase the local purchase ratio by expanding the distribution network there and directing and promotional efforts in those areas.

V. Conclusion

Interestingly, local and unbranded products are sold when it is possible to manufacture them at a price much lower to those of the reputed national brands. 27.4 percent of the rural purchases are made in the nearby cities or towns. These buyers may be approached though the city shops.

An overwhelming majority gives a positive opinion about the selected established national brands irrespective of their price and product category. A majority of rural population is satisfied with the brand choice available locally. The intensity of latent demand for the non-existing varieties (brands) is very high. These factors together clearly demonstrate a very high market potential for cosmetics and allied products in the rural areas of Karnataka. The awareness test shows that most of the selected brands are well known to the customers. Further analysis shows that if marketers make efforts, any brand whether low-priced or high-priced, may get included in the awareness set and subsequently in the choice set of customers.

72.5 per cent customer purchased their respective brands for quality, 9.6 per cent for company image, 6.9 per cent for availability, 6.3 per cent for price advantage factor and 4.7 per cent for brand image. Therefore, the marketers should concentrate on product attributes (quality) and not on price, image etc. which come only next to quality. The quality also comes on the top in the analysis of various purchase decision factors. The analysis guides that products can also be promoted and by creating a good brand image. But for low income people highlighting the others factors may be more effective.

Price gets second position after quality as most dominant factor. The medium income group is the most price conscious group and the high income group is more concerned about the company image. The area-wise differences are also important when selecting specific areas for marketing activities. Self-testing is the only important factor to satisfy the customers about the quality. A good price strategy requires fixing a price to suit the capacity of the target groups and writing it on the product. The pricing and promotional strategy should match the needs of age group and income of the target market. Seventy five per cent rural populations do not have an aversion for the new brands and prefers trying a new arrival in the market. All the above finding makes the rural areas favourable for the existing brands as well as for the new brands of these products. The only requirement is to confirm the marketing activities to the consumer preferences.

The highly advertised brands are [In the given order Rin, Lifeboy, Ponds (talcum powder), Colgate and Lux]; there is a close correlation in the advertisements position of the various brands and their market share indicating an apparent impact of advertising on the market share. On the whole, it may be noted that the attitude towards these tools is highly favourable in all the villages, income, education and age groups of customers in spite of the difference in the proportion favouring them. The high proportion of local purchase shows the confidence in the rural customers on village shops. Village retail shops still need to be strengthened to attract more customers.

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IMPACT OF MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE PROGRAMME (MGNREGP) ON AGRICULTURAL WORKERS

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Abstract

The main focus of this article is to examine the impact of Mahatma Gandhi National Rural Employment Guarantee Scheme on the agricultural workers in rural economy and the present study also tries to assess the working of MGNREGA in Vembakkam block in Thiruvannamalai district. Thiruvannamalai district is one of the most rural regions in Tamilnadu. So it is hoped that the study is suitable for to find out in what extent the MGNREGA Scheme has impact on the rural agricultural workers in rural economy, and also to identify the socio-economic conditions of the rural MGNREGA beneficiaries. The main reason for selecting this topic was to understand the implementation of the scheme MGNREGA and the promotion of rural employment particularly; to what extent this scheme impacts agricultural women's economic and employment status. In such an attempt, the researcher focused on the determinants of MGNREGA scheme of employment, besides examining the acceptance and the number of days the beneficiaries chooses to work under this scheme.

Key words : Mahatma Gandhi National Rural Employment Guarantee Programme (MGNREGP), Rural employment Scheme, Rural development, Impact on Agriculture workers, Women empowerment.

I. Introduction

The Parliament enacted the National Rural Employment Guarantee Act in 2005, expressing the consensus of the state to use fiscal and legal instrument to address the challenge of unemployment and poverty. This was the first time a country has passed a law of this nature and scale, guarantying livelihood security to rural households. The rationale for such legislation was based on the need to provide a social safety net to rural households as well as to create assets that rejuvenate the resource of their livelihood. In an economy where 60 percent of the people depend on agriculture for livelihood, a major share of the rural population is vulnerable to the vagaries of monsoon as an overwhelming share of the gross cropped area is rain-fed-these households run the risk of sinking from transient to chronic poverty in case of any exigency, especially during stake agricultural seasons or years. Income transfers to poor households during these critical times become necessary.

National Rural Employment Guarantee Act [NREGA, 2005]

National Rural Employment Guarantee Act has been passed by the parliament and notified September 7, 2005 the Act is being extended to 200 districts in the First phase of implementation. The Act will be operative in the entire country in 2008 and also it was renamed as the name of Mahatma Gandhi on October 2, 2010 onwards.

MGNREGA: Salient Features.

The Salient Features of the Act are summarized below:

a) Adult member of a rural household may apply for employment it they are willing to do unskilled manual work.

b) Such a household will have to apply for registration to the local Gram panchayat in writing or orally.

c) The Gram panchayat, after due verification will issue a job card to the household as a whole. The job card will bear the photography of all adult members of the household willing to work under MGNREGA. The job card with photography is free of cost.

d) A job card holding may submit a written application for employment to the Gram panchayat, Stating the time and duration when work is sought. The application for work must be at must Fourteen days of continuous work.

e) The Gram panchayat will issue a dated receipt of the written application for employments against which the fourteen-days guarantee to provide employment operates.

f) Employment will be given within 15 days of submitting the date when work is sought by an employment seeker.

g) If employment is not provided within 15 days a daily unemployment allowance in cash has to be paid. Liability of payment of unemployment allowance is on the states.

h) At least one-third of persons to who work are allotted to be women.

i) Wage are to be paid according minimum wage as prescribed under the minimum wages Act 1948 for agricultural labourers in, the state, unless the centre notifies a minimum wage rate which in any case shall not be less than Rs.60 per day.

j) Disbursement of wages has to be done on a weekly basis and not beyond a fortnight.

k) Panchayat Raj Institutions [PRIs] have a principal role in planning and implementation.

l) Each district has to prepare a shelf of projects. The insurants four providing employments are to be works selected from the list of permissible works.

m) Work should ordinarily be provided within a 5 km radius of the village or else extra wage of 10 percent are payable.

II. Review of literature

The National Rural Employment Guarantee programme though implemented very recently by the Government of India, it has created great interest among academicians and policy makers. There are many empirical studies related to MGNREGA. This chapter attempts to bring out a review of these empirical works.

Papola (2005) in his study entitled, "A Universal Programme is feasible" stated that, it is feasible to have an employment guarantee Programme Covering all rural households and offering work to all persons, on all the required days, in all districts right from the beginning at a cost lower than the one being projected for a restricted Programme. A Universal Programme will be closer to the sprit of a guarantee and reduce the bureau tie problems in administering a restricted programme

Mihir Shah (2005), in his study "Saving the Employment Guarantee Act" stated that, the 2004 Employment Guarantee Bill needs to be modified if his objective is to be realized. The Critics and Supporters of the Programme should be able to reach a Compromise on the identification of beneficiaries, coverage and wage

rates. However, if the bill in its present form is passed by parliament this cure could be worse than the disease.

Vaidyanathan (2005) in his study "Employment Guarantee and Decentralization." argues that Protagonists of the National Employment Guarantee Scheme to favour entrusting the programme to panchayat and incorporating provisions to this end in the national law. But this aspect is not articulated as strongly and emphatically in the public debate on the subject as on issues relating to scale and coverage. The campaign for a wider and better funded MGNREGA must be combined with a Campaign to generate strong public opinion and mobilize elected panchayathars all over the country to bring pressure on the central and state governments to strengthen democratic panchayat and empower them to plan and implement all local development programmes.

Yamini Aiyar, et.al (2006), in their article entitled, "improving the effective need of national rural employment Guarantee Act" observe that, our earlier wage employment programmes failed due to the common problems of in effective targeting, leakages and poor quality asset creation. Hence, while developing rules and guidelines for implementation of the National Rural Employment Guarantee Act 2005, more attention should be paid to the lessons we have learnt from past experiences. Because this has the potential not only to strengthen social security in India, but also to strengthen community mobilization, ensure better responsiveness of local government to community needs and priorities and most of all enlace government out comes

Vinayak Reddy (2007), stated that if there is political will, it is possible to implement national level EGS more effectively with a new approach. There have been many successful examples such as water and soil conservation in some areas of Maharashtra, reduction in corruption in drought relief programmes in Rajasthan and these are possible due to transparency. The delivery systems can be improved with the new approach of participatory development, social mobilization, right to information, involvement of evil society and Panchayat Raj Institutions

Pattanaik (2007) examines that the greatest strength of the scheme is that it is implemented not by the bureaucratic apparatus of the state government or through their representatives (contractors) but by the gram

panchayat, thus fulfilling the mandate of the 73 rd constitutional amendment. The MGNREGA has transformed panchayat into an implementing agency from the usual practice of a consulting agency. As opined by the general public as well as the beneficiaries of the scheme that it is largely free from corruption. It is pertinent to note here that the transparency is one of the most significant features of the scheme.

Jean Dreze (2007) contends that the extension of the MGNREGA to the whole country is one of the biggest organizational challenges any government has ever faced. It is also an unprecedented opportunity to build the foundations of a social security system in rural India. Revive village economics, Promote social equity, and empower rural labourers. As things stand, however this bold initiative looks like a political stunt, shorn of the far-reaching preparations that are required to make it a success it is in this context that the draft CAG report needs to be treated as a useful wake-up call rather than as another stick to beat the Act with

Pattanaik (2009) finds that the scheme has been successful in achieving the equity, while it efficiency is still a question to be effectively dealt by the implementers of the programme. The better nexus and coordination between the government and the panchayat would enable efficient implementation of the scheme at the village level. The implementation of MGNREGA in the sub mountainous past of the Hoshiarpur would raise the livelihoods of the people in the district but also cheek deforestation, soil erosion and improve the environment of the area.

Raghuvangh Prasad Sindh (2009) said that when launched three years ago; an economist had seen the MGNREGA as a national scandal that would create paper assets. Defying skepticism it has actually checked rural migration, raised rural wages including those of women and to some extent create durable assets, "within three years the per capita income has doubled but above all focus will have to be on minimizing corruption.

Raghbendra Jha (2008) et al find that based on a pilot survey of three villages in Udaipur district, Rajasthan, India, the targeting accuracy of the NREGS was far from dismal. First nearly one third of the households participated in this scheme, Secondly , large segments of highly disadvantaged groups such as the ST the landless and labour household participated worked for about 100 days during 2007. Also, the landless and labour households participated for same district; there were significant village effects in both participation and duration of participation in MGNREGA on the basis of pilot survey however due to implementation failures and differences in demand.

Hypothesis of the study;

The acceptance of the offer of employment under MGNREGA is determined by land status, income from agriculture as well as from other sources and age of the beneficiary.

III. Methodology

The study is based on primary data collected from different villages in a Vembakkam block of Thiruvannamalai District. The selection of the Districts and the block is based on purposive sampling as Thiruvannamalai district is one of the districts selected under this scheme right from the beginning of the implementation of this programme (2006) it is provides for ample scope investigation of the working of the scheme at various levels. In regard to the villages and beneficiary households; they are based on simple random sampling method. In this process, 5 villages were selected, namely, Thenkalani, Narasamangalam, Pillanthangal, Vadamanapakkam and Ariyur under Vembakkam block and from each village 30 samples were collected 150 in total at random.

Socio-economic profile of the selected respondents

For the proper assessment of the impact of any scheme it is necessary to have a clear understanding of the socio- economic profiles of the people among whom it has been introduced. A study of various mutually interacting socio economic factors and the implementation of MGNREGA will prove of much use to the MGNREGA and the government to plan a sound rural development policy. The presentation here is based on field enquiries collected through the questionnaire.

Social profile of the selected beneficiaries;

The social profile of the selected beneficiaries are measured on the basis of some important characters like sex, age, caste, religion, type of family, marital status, and education status are calculated.

IV. Results and Discussion

Gender composition of selected respondents;

Both males and females respondents are selected for the study in all the five selected villages.

Table: 1. Gender composition of selected respondents in selected villages

S.No	Villages	Male	Female	Total
1	Thenkalani	7	23	30
2	Narasamangalam	12	18	30
3	Pillanthangal	3	27	30
4	Vadamanapakkam	12	18	30
5	Ariyur	6	24	30
6	Total	40	110	150

The table.1 shows the gender composition of the selected respondents among selected villages. It is found in all the villages of this study; the female work participants in the MGNREGA programme

outnumber men by 2-9 times. The figure 4.1& 4.2 also depicts the actual share of male and female workers participation in MGNREGA.

Age composition of selected respondent;

Age compositions of the selected respondents are divided into five categories. There are 1-30, 31-40, 41-50, 51-60, and above 60.The details are given in the table.2

Table:2. Age compositions of respondents in selected villages

S.No	Villages /Age groups	18-30	31-40	41-50	51-60	60and above	Total
1	Thenkalani	8	5	5	5	7	30
2	Narasamangalam	16	8	4	1	1	30
3	Pillanthangal	7	13	6	3	1	30
4	Vadamanapakkam	6	10	8	4	2	30
5	Ariyur	4	6	12	6	2	30
6	**Total**	**41**	**42**	**35**	**19**	**13**	**150**

The table: 2. Shows the age wise distribution selected respondents. It explains that 18-40 the young people are most likely to participate in the scheme. Around 27.33 percent are in 1-30 age group, in 31-40 age group it was 28 in percent , above 60 age group is very low (8.6 percent) in the scheme and only 12.66 percent of the old people (51-60 age group) respondents valued benefits.Caste is the main factor in the social structure of the Indian village and in the selected villages also, but there is no S.C and S.T, in first two villages namely Thenkalani and Narasamangalam. In other villages, there is the caste system of the social structure: to know whether the lower castes are also benefit from the scheme or not, the caste-wise distributions of respondents are given in table 3.

Table:3 . Caste composition of selected respondents.

S.No	Villages/caste	S.T	S.C	M.B.C	B.C	Total
1	Thenkalani	0	0	27	3	30
2	Narasamangalam	0	0	30	0	30
3	Pillanthangal	0	7	14	9	30
4	Vadamanapakkam	0	18	10	2	30
5	Ariyur	1	11	17	1	30
	Total	1	36	98	15	150

Type of family:

The type of family is another related characteristic feature of the Hindu society. The family consists of not only the husband, the wife and the minor children but among other members related to the family. It is divided into two types like nuclear and joint family. The types of the families who have been the beneficiaries are as follows. The type of family divided into two major categories namely nuclear and joint. The 90 (135) percent of the beneficiaries are belong to nuclear families and only the 10(15) percent of the respondent are in joint family

Size of the family:

Household size is another important character of social as well as economic status size of family divided in four categories 1, 2-3, 4-5 and above 5 member in a family. More than 50 percent of family size belongs to 4-5 member category, nearly one third of respondent only less than 10 percent of the peoples belong to more than 5 member category.

Educational status of the respondents;

The distribution of respondents based on educational status is given in table 4

Table: 4. Education status of selected respondents in selected villages

Sino	Villages/Education	Illiterate	Primary	6 to 8	9 to 10	HSc. & above	Total
1	Thenkalani	11	12	6	0	1	30
2	Narasamangalam	5	12	6	5	2	30
3	Pillanthangal	14	10	3	2	1	30
4	Vadamanapakkam	17	10	3	0	0	30
5	Ariyur	14	10	3	2	1	30
6	Total	61	54	21	9	5	150

It is clear that (64) 41 percent of the rural poor beneficiaries among the selected respondents are illiterate, about (54) 36 percent peoples are in primary level, around 20 percent people in 6-10 [the] standard level and only 3 percent of Husk and above educated people's are participated in the scheme among the selected respondents.

Economic characteristics of the selected respondents;

Types of houses;

Good housing is a fundamental requirement for rural hygiene. It is influenced by social and economic conditions and general of life. The

types of houses are categories into four major groups as hut, asbestos, tilled and concrete roof. The table 4.8 exhibits in detail. Majority 29 percents of the respondents are living in bad hut houses and an even percent of respondents are lived in the tilled houses. The 15 percent of respondents are living in asbestos houses and around 27 percent of the respondents are living in good concrete roof houses.

Type of occupation;

Most of the work force is engaged in agricultural sector. Most of the respondents have occupation like diary forming also and only less number of persons are in non- farm employment. The type of occupations are divided into three major groups like cultivators, land less agriculture labour and land less non- farm labour. Only 26 percents of respondents belong to cultivator categories , around 55 percent of respondents are in land less agriculture labour and only 19 percent of the respondents are in landless non- farm employment

Land holding;

Size of land holding is one of the major factors affecting the choice of MGNREGA work. It is found that around 74 percent of respondents are landless labourers. Around 5 percent of the respondents are belong to 1-3 acre land holding, nearly 11 percent of the respondents are in 3-5 acre categories, about 7 percent of the respondents are belong to 5-10 acre categories and only 3 percents of the respondents are in more than 10 acre land holding categories .

MGNREGA status among selected respondents;

More than one beneficiary of MGNREGA in a family:-

The MGNREGA programme gives 100 days work a family. The study finds that in 60 percent of households. The 40 percent of respondents are participating in one member in a family. The below table 5 shows this.

Table: 5.More than one beneficiary of MGNREGA in a family

S.No	Villages / More than one beneficiaries	Yes	No	Total
1	Thenkalani	17	13	30
2	Narasamangalam	18	12	30
3	Pillanthangal	21	9	30
4	Vadamanapakkam	19	11	30
5	Ariyur	16	14	30
6	Total	91	59	150

We have more than one member participants and in over 40 percent of households, there is one member beneficiary.

MGNREGA and agriculture:-

It is a matter of concern in the villages that after the implementation of MGNREGA, it affects agriculture work. This study as shown clearly that how as much as over 58 percent of the respondents reporting that MGNREGA work affects the agricultural work.

Job acceptances:-

To a question as how many of them accept MGNREGA job while agricultural work is available, field enquires reseal that around 70 percent say is the agriculture. Among the selected respondents 102 people says that they accept the job if they have agriculture work. It belongs to 68 percent in total respondents only 48 people not accept the job if they have agriculture work.

Analysis of Primary data by using Probit and Multivariable Regression Models:-

This section attempts to analyse the relationship among the variables using Probit and multivariable regression models. The estimating Probit model that emerges from the normal cumulative distribution function (CDF) , popularly known as the probit model, although sometimes it is also known as the "Normit Model", is based on utility theory or rational choice perspective on behaviour, as developed by "Mcfadden".[1]

This method is used when dependent variable is binary, in which the event is either to accept the job (MGNREGA) or to accept agriculture work. In this method, it is easy to estimate the probability of event that the job is accepted under MGNREGA. For more than one independent variable the model can be written as;

$$L \ (P_i \ / \ 1-P_i \ ) = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + ^a \ ..\alpha_k X_k + u$$

Where: P_i = Chance of MGNREGA job being accepted
$1-P_i$ = Chance of acceptance of agriculture work.
$X_1, X_2, ... X_k$ = Independent variables used in the model
α_1 to α_k = Parameters associated with the

Independent variables $X_1, X_2 ... X_k$.
α_0 = Constant term, u = Error term.

The Probit method is estimated using the method of maximum likelihood. Probit model is used to identify the factor, which has a significant influence on the decision to accept the MGNREGA job. The dependent variable is preference to work under MGNREGA and can be defined by assigning value 1 for preference to MGNREGA job, and 0 for preference to agricultural work.

Table 6: Mean and Standard deviation of variables used in Probit regression model

S.No	Variables	Explanation	Mean	Standard deviation
I.	**Dependent variable**			
	MGNREGA acceptance	1= if accepted under MGNREGA 0= if accepted agricultural work	0.67	0.473
II.	**Independent variables**			
1.	S.C	1= S.C 0=Others (M.B.C , B.C)	0.24	0.4285
2.	M.B.C	1= M.B.C 0=Others	0.6533	0.4775
3.	Land less	1= Landless 0=Others (cultivators)	0.74	0.4401
4.	Illiterate	1= Illiterate 0= Others	0.4066	0.4929
5.	Joint family	1= Joint family 0=Others	0.1	0.3010
6.	Adult Male	Number of adult males in respondents family	1.433	0.7365
7.	Adult Female	Number of adult females in respondent family.	1.486	0.6729
8.	Family size	Number of members in respondent family	3.9333	1.3692
9.	Age 31-40	1= Respondents age 31-40 0= Others (18-30,41-50)	0.28	0.4505
10	Gender	1=Female 0= Male	0.7333	0.4437

Number of respondents = 150.

Empirical results of decision makers to accept the MGNREGA Job: The descriptive statistics of the dependent and independent variables are presented in Table.6.The independent variables are gender, age, community, education and family size which were treated as social variables. The economic variables included are land holding, type of occupation and type of houses. The independent variables namely, community, education, type of family, age group and gender are considered as dummy variables.

Table: 7 Probit results of preference of participation under MGNREGA, Vembakkam block, Thiruvannamalai district.

Dependent variable; Preference to work under MGNREGA.

S.No	Independent variables	1*	2**
1.	Adult Males	0.038 (0.21)	0.0052 (0.02)
2.	Adult Females	- 0.1387 (0.74)	-0.1908 (0.94)
3.	Illiterate	0.2050 (0.85)	0.2219 (0.91)
4.	Type of Family	-0.1230 (0.29)	_
5.	Landless	1.0834 (4.07)	1.1589 (4.23)
6.	S.C.	-0.0321 (0.11)	0.5116 (1.26)
7.	M.B.C	-	0.6955 (1.94)
8.	Age (31-40)	-0.0858 (0.34)	_
9.	Gender	0.6616 (2.51)	0.7270 (2.71)
10.	Household size	_	0.0283 (0.23)
11.	Constant	-0.6956798 (1.40)	-1.400966 (2.26)
12.	Log Likelihood	-80.4477	-78.642
13.	No of observation	150	150

Note; Figures in parentheses are t- values.

* Two variables namely the caste category MBC and household size are excluded.

** Two variables namely type of family and age group (31-40) are excluded.

The empirical results show that the variables namely illiteracy, landlessness, community and gender and adult male and female are significant to opt for NREGS work, in the selected villages. The same table (column 3) shows the other significant variables such as land less dummy, female dummy, and M.B.C. dummy are significant. Among the different communities, the MBC seem to be the major beneficiary of the MGNREGA job opportunities.

The positive and significant influence of gender dummy variable on the preference to work under MGNREGA evidenced that women are participating and benefiting from the scheme to a larger extent. However, the R^2 value is quite negligible as it explains around 15-17 percent of the variation in the dependent variable. The fact of the matter is that the researcher could not get a vital independent variable namely income or expenditure from the respondents as the data collection for this work was based on one shot enquiry. Besides the number of samples collected is very small and as such, the co-efficient of determination is invariably small in our analysis.

Multiple Regression Model:-

In addition to probit model, a multivariate regression model has also been estimated with number of annual days of work as dependent variable and the independent variables as included in the probit model. The model being $N=\beta_0+\beta_1 AM+\beta_2$
$AF+\beta_3 IL+\beta_4 OT+\beta_5 JF+\beta_6 Ag+\beta_7 f+\beta_8 LL+\mu$

Where N=Number of days worked by respondent under MGNREGA.

AM = Adult Male, AF = Adult Female, IL = Illiterate, OT = Others

JF = Joint family, Ag = Age, F = Female, LL = Landless labour

β_0 = constant tern, $\beta_1, \beta_2, \beta_8$ = are parameters to be estimated

μ = the random error term

The regression results are given in Table 8. It is observed that in the study village, the number of male workers, illiteracy of workers and landless labour are the crucial factors which influence the decision to opt for the number of days the employment under MGNREGA programme is decided. No of adult men and women in the household reduces the participation of respondent under MGNREGA as most of them being in the working age group may share the burden of family by participating in the labour market. Illiterates increase their participation significantly for the livelihood under MGNREGA. Landless respondents also increase their participation significantly at 10 percent level. Respondents being female, intend ended to participate in the labour market but not significantly. However this finding in significant according to Probit estimates. Respondents belonging to scheduled community are also increases this labour supply to earn more income in the form of wage. In the case of Regression model, the coefficient of determination (R^2) is around 13 percent. As mentioned earlier perhaps the vital independent variable however income or expenditure is a missing variable in this model and hence the poor R^2 value.

The table 8, Shows that the OLS estimation on number of annual work days of respondent under NREGS with the independent variables were same as in the table 6and 7. The OLS estimates given in table 8, shows that the six variables are positively significant related with dependent variable. They are illiteracy, landlessness, joint family, age group dummy (31-40), gender dummy, and S.C. dummy. The rest of the variables did not influence significantly. The age group dummy (31-40 age group) and gender dummy are positively influencing the participation (work) under the scheme (NREGS).

Table 8.OLS Estimation of Labour supply function Vembakkam block, Thiruvannamalai Dependent variable; No of annual work days of respondents under MGNREGA.

S.No	Independent variable	1[*]	2[**]
1	No of adult males	-7.578 (2.4525)	-5.734 (1.54)
2	No of adult females	-6.107 (1.835)	-4.853 (1.35)
3	Illiterate	8.232 (1.914)	7.211 (1.65)
4	Joint Family	10.410 (1.321)	12.93 (1.45)
5	Age(31-40)	1.922 (0.415)	2.064 (0.44)
6	Gender	1.031 (0.213)	0.5637 (0.12)
7	Landless	9.584 (1.936)	8.558 (1.72)

8	SC	2.190 (5.085)	-
9	MBC	-	-5.257 (1.15)
10	Household size	-	-1.952 (0.78)
11	Constant	47.194 (5.340)	55.55 (5.11)
12	R^2	0.131	0.1406
13	F	2.647	2.54
14	No of observations	150	150

Note; Figures in parentheses are z- values.
* Two variables namely the caste category MBC and household size are excluded.
** A caste category S.C is excluded.

V. Conclusion

The main reason for selecting this topic was to understand the implementation of the scheme MGNREGA and the promotion of rural employment particularly, to what extent this scheme impacts women's economic and employment status. In such an attempt, the researcher focused on the determinants of MGNREGA scheme of employment, besides examining the acceptance and the number of days the beneficiaries chooses to work under this scheme.

The salient findings of the present study are summarized as follows.

- The study finds that hundred percent of the respondents in all the selected villages are aware of the scheme, and have benefited under the scheme.
- Around 97 percent of respondents are informed about MGNREGA scheme through the village panchayat president.
- Nearly 65 percent of respondents say that they work below 5 hours per day remaining 35 percent work 5 to 6 hours per day.
- The study finds that around 53 percent of respondents get prescribed wage and only 47 percent are paid less than prescribed wage.
- There is no wage discrimination between male and female workers under this scheme in the study.
- Around 58 percent of respondents say that after the implementation of MGNREGA, it affects agriculture work.

- The study finds that around 68 percent of respondents do accept the MGNREGA job even if they have agriculture work.
- The study indicates that most of the beneficiaries have worked between 50-100 and 100-150 days under the scheme in last three year. The average number of days of work in selected villages is nearly 50 days per year.
- Around 47 percent of respondents earn Rs. 5000-10000 in last three years. The annual average earning of the respondents nearly Rs.3000 per year.
- The study finds that around 67 percent of respondents work below 50 days in 2008-09, financial year. Only 5 percent of respondents work above 90 days under the scheme MGNREGA in the last financial year.
- Illiterates increase their participation significantly for their livelihood under MGNREGA.
- Landless respondents increase their participation under NREGS significantly at 10 percent level.
- Female respondents are interested to participate in the labour market but not significantly.

Limitations of the Study;

(i) The study is based on relatively limited sample size considering the size of the universe and so the findings and conclusions of this study are not amenable for generalization.

(ii) A vital independent variable namely income and or expenditure of the respondent household could not be properly ascertained and so the explanatory power of the chosen independent variables to the calculation of income/ expenditure is limited.

(iii) As the programme MGNREGA itself is a recent one being implemented in villages since 2006, it is rather early to attempt a performance evaluation. The players of the game at all levels are yet to come to the grips of the programme.

Suggestions:

1. The employment opportunities under MGNREGA seem to be largely availed by the MBC in the selected villages. The selection of the beneficiaries has to be streamlined so as to distribute the benefits to different needy classes of people living in the villages.
2. The implementation of different schemes should ensure both asset creations as well as income generation to the target workforce.
3. The Panchayat Union president and all other officials involved in implementing the scheme need to have greater coordination in the identification of both schemes for development as well as the target beneficiaries.
4. The officials of the Panchayat Unions in the study villages suggest the need for additional technical staff so as to attend to the activities of MGNREGA without delay.

In this study the majority of the respondents have occupation like dairy farming and only less number of persons are in non- farm employment. It is a matter of concern in the villages that after the implementation of MGNREGA, it affects agriculture work. This study as shown clearly that how as much as over 58 percent of the respondents reporting that MGNREGA work affects the agricultural work. The type of occupations are divided into three major groups like cultivators, land less agriculture labour and land less non- farm labour. To a question as how many of them accept MGNREGA job while agricultural work is available, field enquires reseal that around 70 percent say is the MGNREGA job. Among the selected respondents 102 people says that they accept the job if they have agriculture work. It belongs to 68 percent in total respondents and only 48 people not accept the job if they have agriculture work. It is clearly shows that increase in the demand for landless agriculture labour and also increase in the agriculture wage rate.

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FINANCIAL PERFORMANCE OF PHARMACEUTICAL INDUSTRY USING DUPONT ANALYSIS

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Abstract

   This study attempts basically to measure the financial performance of the Pharmaceutical Industry taking top three companies like Cipla Pharmaceutical, Dr. Reddy's Laboratories, Ranbaxy for the period 2003-2012. In order to achieve our goals in this paper we have measured the ratios of ROE, ROA applying the DuPont analyses, which have been demonstrated with the aim of tables to show the change periodically. DuPont analysis (ROI and ROE)) is an important tool for judging the operating financial performance. It is an indication of the earning power of the firm.

   DuPont Model is based on analysis of Return on Equity (ROE) & Return on Investment (ROI). The return on equity disaggregates performance into three components: Net Profit Margin, Total Asset Turnover, and the Equity Multiplier. Return on Investment consists of Assets Turnover and Profit Margin. The return on investment consists of Assets Turnover (Operating Income X Total Assets) and Profit Margin (EBIT X Operating Income).

   From the study it if found that Cipla pharmaceutical Financial performance is high followed by Dr.Reddy's Laboratories and then Ranbaxy Pharmaceutical. The three companies are significant at their level. In conclusion, ROE & ROI is the most comprehensive measure of profitability of a firm. It considers the operating and investing decisions made as well as the financing and tax-related decisions

Keywords: DuPont Analysis, Return on equity, Return on Investment, Financial Performance, Pharmaceutical Industry.

I. Introduction

   For any business in the private sector there are numerous of models to describe how well the business is running. Among these the DuPont model was created in the early 1900s but is still a model valid to use for assessment of the profitability. Using the DuPont model for risk analysis is not very common but if you as a risk analysis specialist want to talk the language of the business, it can be valuable to you.

   The model was created by F. Donaldson Brown who came up with the model when he was assigned to clean up the finances in General Motors and has ever since been an important model for financial analysis. Remarkably it has not been used in the security community for risk prioritization or impact analysis. The original DuPont method of financial ratio analysis was developed in 1918 by an engineer at DuPont who was charged with understanding the finances of a company that DuPont was acquiring. He noticed

that the product of two often-computed ratios, net profit margin and total asset turnover, equals return on assets (ROA). The elegance of ROA being affected by a profitability measure and an efficiency measure led to the DuPont method becoming a widely-used tool of financial analysis Liesz, (2002). In the 1970's, emphasis in financial analysis shifted from ROA to return on equity (ROE), and the DuPont model was modified to include the ratio of total assets to equity. Three distinct versions of Du Pont have been created and used to help unravel the underlying drivers of profitability and return over time, beginning nearly 90 years ago.

   The DuPont ratio is a useful tool in providing both an overview and a focus for such analysis. It can be used as a compass in the process by directing the analyst toward significant areas of strength and weakness evident in the financial statements. This study attempts basically to measure the financial performance of the Pharmaceutical Industry in India. The main

objective is to find out the ratios of ROE and ROI for top three pharmaceutical industries namely Cipla Pharmaceutical, Dr.Reddy's Laboratories, and Ranbaxy Pharmaceutical for a period 10 years from 2003-2012. The aim of the study to rank the pharmaceutical industry and evaluate its financial performance based on Du Pont analysis which includes ROE and ROI.

Currently the Indian Pharma industry is valued at approximately 90,000 Crores or US $ 20 billion (1 US $ = 45), constituting 1.8% of the GDP and expected to grow more than 11% going forward. The country now ranks 3rd worldwide by volume of production and 14th by value thereby accounting for around 10% of world's production by volume and 1.5% by value. Globally, it ranks 4th in terms of generics production and 17th in terms of export value of bulk actives and dosage forms. Through to 2015 and 2020, India's pharmaceutical market will post local currency CAGRs of 14.6% and 13.5% respectively. It increases the value of shareholders in the market and makes them to earn more. This is the reason the researcher attempts to evaluate the financial performance of pharmaceutical industry in India using DuPont Analysis.

II. Review Literature

For an investment to be acceptable to a firm's financial management it must provide a positive answer to the question "Will the acquisition of this asset increase the value of the owner's equity?" (**F. Arditti, 1967**)

The financial objectives of a for-profit business primarily concern the needs of the external suppliers of debt and equity capital. The economic returns to shareholders comprise dividends and capital gains on the market value of their shares. As earning determine what can be paid out as dividend in the long run, shareholders are primarily concerned with financial measures like earnings, ROS, ROA, ROE, ROI. (**R. Thorpe, J. Holloway, 2008**)

Du Pont analysis, a common form of financial statement analysis, decomposes return on net operating assets into two multiplicative components: profit margin and asset turnover (**B. McClure**). These two accounting ratios measure different constructs and, accordingly, have different properties. Prior research has found that a change in asset turnover is positively related to future changes in earnings (**M. Soliman**)

Du Pont analysis takes into account three indicators to measure firm profitability: ROA, ROE and ROI.

Return on assets – **ROA** offers a different take on management effectiveness and reveals how much profit a company earns for every dollar of its assets ([**S. Ross, R. Westerfield, J. Jaffe, B. Jordan**). Assets include things like cash in the bank, accounts receivable, property, equipment, inventory and furniture. Only a few professional money managers will consider stocks with a ROA of less than 5%.

ROA = *Total Assets / Net income*

Return on equity – **ROE** it is a basic test of how effectively a company's management uses investors' money – ROE shows whether management is growing the company's value at an acceptable rate. Also, it measures the rate of return that the firm earns on stockholder's equity. Because only the stockholder's equity appears in the denominator, the ratio is influenced directly by the amount of debt a firm is using to finance assets (**B. McClure**). Practically, ROE reflects the profitability of the firm by measuring the investors` return (**J. J. Griffin, J.F. Mahon**).

ROE = Stockholder s equity / Total Assets X Total Assets / Net income X Stockholder s equity / Total Assets

ROE is calculated by taking the profit after tax and preference dividends of a given year and dividing it by the book value of equity (ordinary shares) at the beginning of the year (4). Average equity can also be used. Equity would consist of issued ordinary share capital plus the share premium and reserves [**J.H.V.H. de Wet, E. du Toit**].

Return on Investment – *ROI* The return on investment is the return earned from the investment made by the firm. This gives the actual position of the firm. ROI shows whether the management is in profitable position or not. It measures the earnings of the firm. It multiplies profit margin and Asset Turnover. (**B. McClure**)

ROI = Assets Turnover (Operating Income X Total Assets) X Profit Margin (EBIT X Operating Income)

Prendergast (2006) and Milbourn & Haight (2005) present examples of using Du Pont analysis in both a business and classroom setting. Prendergast illustrates how a "modified Du Pont approach to ratio analysis can be used to drill down to the true cause of financial performance problems" in a small manufacturing business (p. 48). Milbourn & Haight show the use of "Du Pont Analysis as a teaching aid to equip students with an understanding of how management decisions influence the bottom line" (p. 46). Unfortunately,

the Milbourn & Haight paper is concerned exclusively with only the original Du Pont model, i.e. it shows the drivers of no more than Return on Assets. We will show the impact and value of the Du Pont model drivers on Return on Equity.

In order to more effectively evaluate operational managers, Nissim & Penman (2001) suggest using a modified version of the traditional DuPont model in order to eliminate the effects of financial leverage and other factors not under the control of those managers. Using operating income to sales and asset turnover based on operating assets limits the performance measure of management to those factors over which management has the most control. The modified DuPont model has become widely recognized in the financial analysis literature. See, for example, Pratt & Hirst (2008), Palepu & Healy (2008), and Soliman (2008).

In addition, **Soliman (2004)** found that industry-specific DuPont multiplicative components provide more useful valuation than do economy-wide components, suggesting that industry-specific ratios have increased validity.

Hawawini and Viallet (1999) offered yet another modification to the DuPont model. This modification resulted in five different ratios that combine to form ROE and ROI. In their modification they acknowledge that the financial statements firms prepare for their annual reports (which are of most importance to creditors and tax collectors) are not always useful to managers making operating and financial decisions.

Brigham and Houston, (2001) The modified model was a powerful tool to illustrate the interconnectedness of a firm's income statement and its balance sheet, and to develop straight-forward strategies for improving the firm's ROE.

Sundararajan, et al (2002) Various measures of rates of return are used mainly for that purpose. We fully agree with the opinion that "Relaying too heavily on just a few indicators of bank profitability can be misleading. While ROI, ROE, and interest margin (and non interest expenses) to gross income remain the key measures, they should ideally be supplemented by the analysis of other operating ratios"

Mihaela Herciu, Claudia Ogrean & Lucian Belascu(2011) the present paper aims to demonstrate that in most cases the most profitable companies are not the most attractive for investors – through Du Pont Analysis method. In order to do this, we take into account the top 20 most profitable companies in the world in 2009 (according to Fortune). By using Du Pont analysis we came to the results that the ranking is not preserved when indicators (ratios) such as ROA (return on assets) or ROI (return on Investment), ROE (return on equity) or ROS (return on sales) are taken into consideration.

Dr Ahmed Arif Almazari (2012) This study attempts basically to measure the financial performance of the Jordanian Arab commercial bank for the period 2000-2009 by using the DuPont system of financial analysis which is based on analysis of return on equity model and return on investment model. The return on equity model disaggregates performance into three components: net profit margin, total asset turnover, and the equity multiplier. It was found that the financial performance of Arab Bank is relatively steady and reflects minimal volatility in the return on equity. Net profit margin and total asset turnover exhibit relative stability for the period from 2001 to 2009.The equity multiplier also show almost stable indicators for the period from2001-2005 and the ratios declined from 2006-2009 which indicates that the Arab bank had less financial leverage in the recent years, which means the bank is relying less on debt to finance its assets.

III. DuPont Analysis Computation

The DuPont analysis computes variables from the income statement and balance sheet to determine a firm's return on equity (ROE) & return on Investment (ROI). The formula is as follows: **ROE = Profit Margin (Net Profit/Sales) X Asset Turnover (Sales/Total Assets) X Equity Multiplier (Total Assets/Total Equity)**

DIAGRAM NO 1: RETURN ON EQUITY
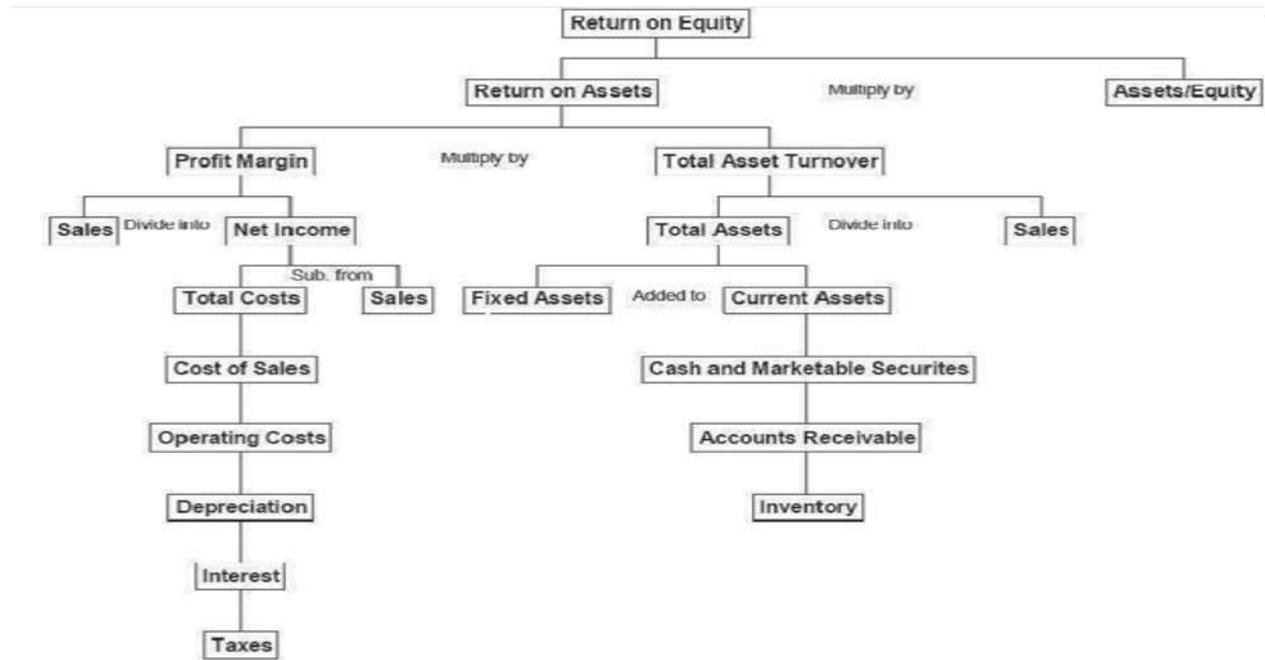
ROI = Assets Turnover (Operating Income X Total Assets) X Profit Margin (EBIT X Operating Income)

DIAGRAM NO 2: RETURN ON INVESTMENT
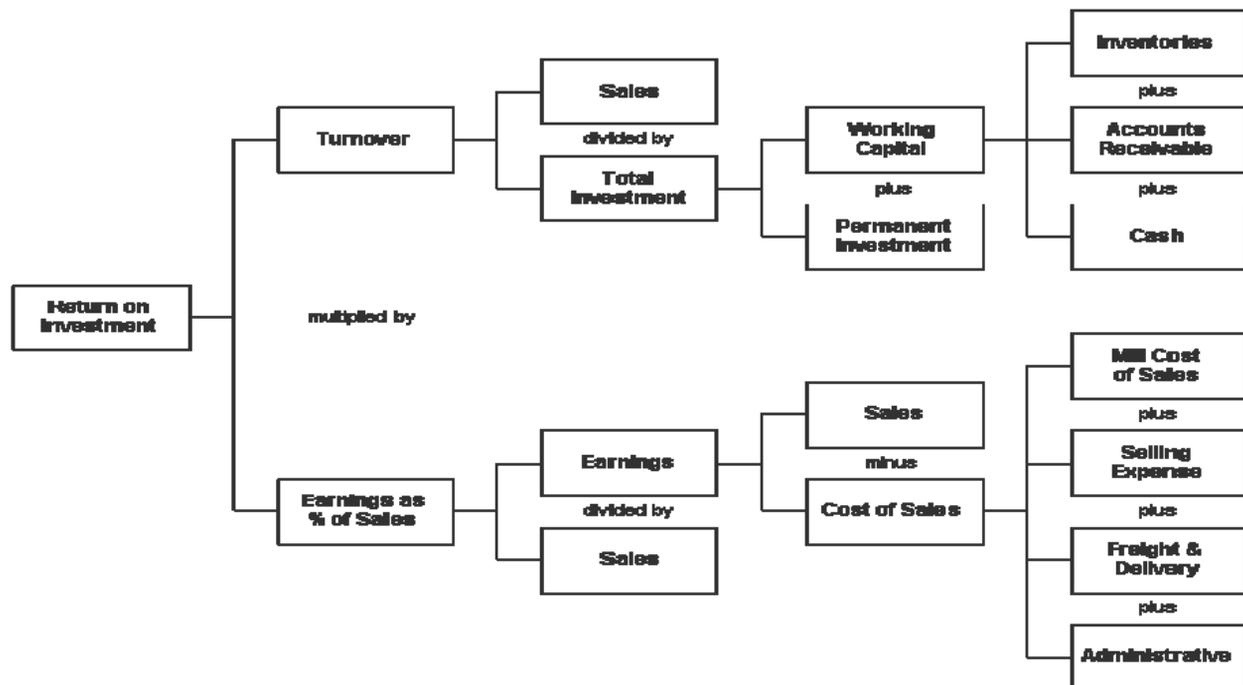
IV. Analysis and Interpretation

Table No 1: Showing Roe & ROI For Cipla Pharmaceutical

1. **A. Return on equity**

Year	Total Assets (A)	Common Stock Equity (B)	Financial Leverage C=(A X B)	Npm (D)	Tat (E)	Roa (D/E)	Roe = Fl*Roa
2002-2003	1044.31	724.66	1.44	18.22	0.94	17.15	24.71
2003-2004	1411.54	890.14	1.59	18.24	0.91	16.66	26.41
2004-2005	1817.68	1070.08	1.70	16.97	0.80	13.63	23.15
2005-2006	2220.08	1264.05	1.76	15.95	0.87	13.81	24.27
2006-2007	2616.06	1553.63	1.68	18.17	0.86	15.66	26.36
2007-2008	3458.33	1983.27	1.74	20.38	0.86	17.57	30.64
2008-2009	4413.74	3236.27	1.36	18.75	0.82	15.14	20.64
2009-2010	5733.21	3755.82	1.53	16.69	0.73	12.23	18.68
2010-2011	6859.7	4350.75	1.58	14.84	0.76	11.32	17.85
2011-2012	8443.93	5914.09	1.43	19.29	0.66	12.81	18.29
Mean	**3801.86**	**2474.28**	**1.58**	**17.75**	**0.82**	**14.60**	**23.10**
Std.Dev	**2500.77**	**1753.48**	**0.14**	**1.65**	**0.09**	**2.16**	**4.20**
T Value Sig. (2-Tailed)	**4.808 (0.001)**	**4.462 (0.001)**	**35.804 (0.000)**	**34.114 (0.000)**	**30.343 (0.000)**	**21.337 (0.000)**	**17.397 (0.000)**

1. **B. Return on investment**

Year	Operating Income (a)	Total assets (b)	Assets Turnover C=(a/b)	EBIT (d)	Operating Income (e)	Profit Margin F=(d/e)	ROI (C*F)
2002-2003	233.45	1044.31	0.22	255.91	233.45	1.10	0.25
2003-2004	306.48	1411.54	0.22	334.65	306.48	1.10	0.24
2004-2005	319.42	1817.68	0.18	345.41	319.42	1.90	0.19
2005-2006	422.38	2220.08	0.19	448.3	422.38	1.70	0.20
2006-2007	505.29	2616.06	0.19	581.32	505.29	1.15	0.22
2007-2008	693.89	3458.33	0.20	806.09	693.89	1.16	0.23
2008-2009	821.83	4413.74	0.19	922.51	821.83	1.12	0.21
2009-2010	852.17	5733.21	0.15	987.09	852.17	1.16	0.17
2010-2011	1244.84	6859.70	0.18	1105.33	1244.84	0.89	0.16
2011-2012	1380.93	8443.93	0.16	1506.64	1380.93	1.09	0.18
MEAN	**678.06**	**3801.86**	**0.19**	**729.33**	**678.07**	**1.24**	**0.21**
STD.DEV	**398.06**	**2500.77**	**0.02**	**405.99**	**398.06**	**0.310**	**0.03**
t value Sig. (2-tailed)	**5.39 (0.000)**	**4.81 (0.001)**	**26.41 (0.000)**	**5.68 (0.000)**	**5.39 (0.000)**	**12.61 (0.000)**	**21.41 (0.000)**

Inference: From the above table 1.A. ROE it is clear that mean value is 23.10, Std.dev is 4.20, the t-value is 17.397 and it is significant at 1% level of significance (.000). In table 1.B. ROI it shows that the mean value is 0.21, std.dev is 0.03, the t-value is 21.41 and it is significant at 1% level of significance (0.000)

Table No 2: Showing ROE & ROJ for Dr.Reddy s Laboratories

2. **Return on equity**

Year	Total Assets (a)	Common stock Equity (b)	Financial Leverage C=(axb)	NPM (d)	TAT (e)	ROA (d/e)	ROE = FL*ROA
2002-2003	1063.06	553.26	1.92	15.71	0.87	13.59	26.11
2003-2004	1719.09	1457.99	1.18	30.77	0.87	26.74	31.53
2004-2005	2166.06	1806.92	1.20	25.56	0.71	18.10	21.70
2005-2006	2519.09	2047.02	1.23	17.05	0.66	11.24	13.83
2006-2007	2982.01	2074.08	1.44	4.23	0.51	2.20	3.16
2007-2008	3984.97	2262.14	1.76	10.54	0.50	5.30	9.33
2008-2009	5958.19	4373.36	1.36	31.11	0.63	19.75	26.91
2009-2010	6661.83	4811.81	1.39	14.21	0.50	7.13	9.88
2010-2011	7357.50	5259.10	1.40	14.02	0.54	7.62	10.67
2011-2012	8361.00	5914.60	1.41	19.25	0.53	10.12	14.31
MEAN	4277.28	3056.03	1.43	18.24	0.63	12.18	17.00
STD.DEV	2600.50	1850.93	0.24	8.66	0.14	7.49	9.26
t value Sig. (2-tailed)	5.201 (0.001)	5.221 (0.001)	18.878 (0.000)	6.664 (0.000)	14.053 (0.000)	5.143 (0.001)	5.715 (0.000)

2.   **B. Return on Investment**

Year	Operating Income (a)	Total assets (b)	Assets Turnover C=(a/b)	EBIT (d)	Operating Income (e)	Profit Margin F=(d/e)	ROI (C/F)
2002-2003	261.28	1063.06	0.25	257.80	261.28	0.99	0.24
2003-2004	572.49	1719.09	0.33	626.64	572.49	1.09	0.36
2004-2005	460.65	2166.06	0.21	498.04	460.65	1.08	0.23
2005-2006	346.79	2519.09	0.14	379.31	346.79	1.09	0.15
2006-2007	163.21	2982.01	0.05	154.8	163.21	0.95	0.05
2007-2008	317.07	3984.97	0.08	413.05	317.07	1.30	0.10
2008-2009	1327.35	5958.19	0.22	1561.3	1327.35	1.18	0.26
2009-2010	582.70	6661.83	0.09	779.99	582.70	1.34	0.13
2010-2011	758.00	7357.5	0.10	970.20	758.00	1.28	0.13
2011-2012	1088.5	8361	0.13	1342.5	1088.50	1.23	0.16
MEAN	587.80	4277.28	0.16	698.36	587.80	1.15	0.18
STD.DEV	374.36	2600.50	0.09	466.45	374.36	0.13	0.09
t value Sig. (2-tailed)	4.965 (0.001)	5.201 (0.001)	5.681 (0.000)	4.735 (0.001)	4.965 (0.001)	27.311 (0.000)	6.291 (0.000)

Inference:

From the above table 2.A. ROE it is clear that mean value is 17.00, Std.dev is 9.26, the t-value is 5.715 and it is significant at 1% level of significance (0.000). In table 2.B. ROI it shows that the mean value is 0.18, std.dev is 0.09, the t-value is 6.291 and it is significant at 1% level of significance (0.000)

Table No 3: Showing ROE & ROI for Ranbaxy Pharmaceutical

1. **A. Return On Equity**

Year	Total Assets (a)	Common stock Equity (b)	Financial Leverage C=(axb)	NPM (d)	TAT (e)	ROA (d/e)	ROE = FL*ROA
2002-2003	2452.86	1606.98	1.53	12.14	0.85	10.27	15.68
2003-2004	2823.13	1882.81	1.50	20.49	1.08	22.09	33.12
2004-2005	3599.72	2321.77	1.55	20.83	1.06	22.08	34.23
2005-2006	4187.72	2509.51	1.67	13.91	0.91	12.60	21.02
2006-2007	4804.67	2377.3	2.02	5.83	0.76	4.41	8.92
2007-2008	7036.85	2350.01	2.99	9.12	0.59	5.41	16.19
2008-2009	7956.91	2538.4	3.13	14.38	0.54	7.76	24.34
2009-2010	12013.46	3716.77	3.23	22.46	0.39	-8.70	-28.11
2010-2011	11328.91	4134.60	2.74	11.96	0.42	5.05	13.83
2011-2012	12782.01	5132.40	2.49	20.35	0.44	8.99	22.38
MEAN	**6898.62**	**2857.06**	**2.29**	**10.66**	**.70**	**9.00**	**16.16**
STD.DEV	**3951.56**	**1108.37**	**.71**	**12.67**	**.26**	**8.95**	**17.52**
t value Sig. (2-tailed)	**5.52 (.000)**	**8.15 (.000)**	**10.19 (.000)**	**2.66 (.026)**	**8.46 (.000)**	**3.18 (.011)**	**2.91 (.017)**

3. B. Return on Investment

Year	Operating Income (a)	Total assets (b)	Assets Turnover C=(a/b)	EBIT (d)	Operating Income (e)	Profit Margin F=(d/e)	ROI (C/F)
2002-2003	297.95	2452.86	0.12	393.36	297.95	1.32	0.16
2003-2004	723.96	2823.13	0.26	801.62	723.96	1.11	0.28
2004-2005	915.65	3599.72	0.25	1031.94	915.65	1.13	0.29
2005-2006	632.65	4187.72	0.15	697.43	632.65	1.10	0.17
2006-2007	185.44	4804.67	0.04	307.69	185.44	1.66	0.06
2007-2008	632.27	7036.85	0.09	603.62	632.27	0.96	0.09
2008-2009	414.59	7956.91	0.05	965.72	414.59	2.33	0.12
2009-2010	256.17	12013.46	0.02	-1331.47	256.17	-5.20	-0.11
2010-2011	652.64	11328.91	0.06	1138.3	652.64	1.74	0.10
2011-2012	1271.03	12782.01	0.10	1833.48	1271.03	1.44	0.14
MEAN	**598.24**	**6898.62**	**0.11**	**644.17**	**598.24**	**0.76**	**0.13**
STD.DEV	**330.96**	**3951.56**	**0.08**	**817.92**	**330.96**	**2.13**	**0.11**
t value Sig. (2-tailed)	**5.716 (0.000)**	**5.521 (0.000)**	**4.301 (0.002)**	**2.491 (0.034)**	**5.716 (0.000)**	**1.125 (0.290)**	**3.624 (0.006)**

Inference:

From the above table 3.A. ROE it is clear that mean value is 16.16, Std.dev is 17.52, the t-value is 2.91 and it is significant at 5% level of significance (0.017). In table 3.B. ROI it shows that the mean value is 0.13, std.dev is 0.11, the t-value is 3.624 and it is significant at 5% level of significance (0.006).

V. Conclusion

The company profitability for most investors is a landmark in terms of earnings they could obtain by placing capital. Profits earned by a company, taken the absolute amount, provides an overview of a company's activity without giving details about the extent to which the company manages dividends, debts, liabilities or other indicators.

In this paper it is tried to demonstrate with the help of profitability ratios like ROI and ROE that the comparison of performance and condition of a company against its competitors, analyzing trends in the returns of a company in the context of trends of the components and forecasting the returns of a company based on forecasts of the components.

From the above analysis it is found that Cipla pharmaceutical ROE and ROI has highest returns on equity and Investment by 23.10 and 0.21 followed by Dr. Reddy's Laboratories ROE is 17.00 and ROI is 0.18. The third position secured by Ranbaxy Laboratories ROE is 16.16 and ROI by 0.13. This shows Cipla is concentrating on its financial performance by reducing its expenses and cost. As a conclusion, the Du Pont analysis that we made (by calculating ROI and ROE) for the top 3 most profitable pharmaceutical companies in India emphasize that absolute measurements are not relevant every time. Therefore to have a common basis of comparison between several companies and to compose ranks the relative sizes for measuring efficiency are necessary when calculating the ratio.

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SELF CONCEPT IMPACT ON TOOTHPASTE BRANDS BUYING BEHAVIOR

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Abstract

Consumer buying behaviour refers to the buying behaviour of the individuals and households who buy the goods and services for personal consumption. Consumers around the world are different in various factors such as age, income, education level and preferences which may affect the way they avail of goods and services. This behaviour then impacts how products and services are presented to the different consumer markets. There are many components which influence consumer behaviour namely: cultural, social, personal and psychological .These characteristics cannot be controlled by the companies; therefore, a need to assess these elements in order to create an effective marketing plan. The main intension of this study is to analyse the impact of self concept on toothpaste brands buying behaviour. The researcher selected 485 respondents in Bangalore city. Descriptive research design was adopted in this study. Structured questionnaire was used to collect the information from respondents. Correlation and regression analysis was applied to find the influence of self concept on toothpaste brands buying behaviour. The result showed that self concept is strongly related with toothpaste brands buying behaviour. This study only analysed the self concept, i.e. the main limitation of this study. The other psychological factors like personality, psychological reactance, motivation etc are not analysed. So this study is helpful for researcher for further extension.

Key words: Consumer behavior, consumer buying behavior, Toothpaste buying behavior, self concept

I. Introduction

When shaping the marketing strategy, components such as product, price, place, and promotions are important parts of the marketing strategy. One of the greatest challenges for the marketer is to understand what satisfies customers as well as how to satisfy them. Merely identifying costumer needs and motives is not enough to reach success; this knowledge has to be utilized and conceptualized into the marketing context. For manufacturers, understanding customer needs and motives implies alertness to and understanding of trends that are emerging, sustaining and/or waning in society (McGoldrick, 2002).Today one major trend that bears a major influence on consumers is profile of the consumers and psychological characteristics like self concept of a person. Toothpaste manufacturers introduced many varieties of toothpaste with different ingredients to solve the problems of consumers. Selection of brand mainly depends on the internal motivation. In India many

leading players are in the toothpaste market. MNCs like Colgate Palmolive, HLL, GlaxoSmithKline and regional players like Dabur India Ltd, Anchor, Henkel, Vicco, and Ajanta are competing in the market. Colgate and HLL brands are leading player in the market. Dabur and other regional players are struggling to compete with MNCs. So this study is helpful for the firms to understand the psychological reactance and its impact on toothpaste brands buying behavior.

Research purpose

The aim of this study is to extend the knowledge of what influences the buying behavior of toothpaste brands in Bangalore city. This study aims to determine the relation between self concept of the consumers' and toothpaste brands buying behavior.

Theoretical relevance

Zaltman (2003) discussed the following key insights in consumer behavior studies: "most

of the thoughts and feelings that influence consumers' and managers' behavior occur in the unconscious mind and insightful analysis of consumer thought and behavior requires an understanding of how mental activity works". Understanding how consumers behave requires much more insight to the mind of the consumer than simple market research such as surveys and focus groups allow. Similarly, Zaltman (2003) indicated that consumers do not think in words.

There is much more subconsciously occurring in the purchase behavior. Within the existing purchase behaviour, mind, body, brain, and society as a whole are connected in the process (Zaltman, 2003). Based on this concept, the objective was developed and test was applied.

Indian Oral Care Industry

Many people in India still clean their teeth with traditional products like neem twigs, salt, ash, tobacco or other herbal ingredients. Average all India per capita consumption of toothpaste is a dismal 82gms.The dentist to population ratio is a critically low 1:35000 in the country.

This results in low oral hygiene consciousness and widespread dental diseases. Less than 15% of the Indian toothpaste users brush twice a day. Colgate and Hindustan Lever together account for over 85% of the organized toothpaste market. Red and Black toothpowder still accounts for 35% of the toothpowder market. In toothpowders, Colgate and Dabur are the leading players sharing between them 75% of the market

Toothpaste Market

The toothpaste market is characterized by the presence of few large multinational companies like Colgate Palmolive India Ltd, Hindustan Lever Ltd, Procter & Gample, SmithKline Beecham .Consumer health care and a handful of Indian companies such as Dabur, Anchor Health and Beauty Products ,Vicco Laboratories etc.

Traditionally, Colgate and HUL were the main players in the toothpaste market of white and gel form. Then Procter & Gamble joined the market. Domestic Indian companies like Balsara and Vicco industries used to produce the ayurvedic range of toothpaste along with their other ayurvedic products. Anchor Company that was more famous for its switching products, made

a successful foray in to this sector, by launching toothpaste and positioning itself as first 100% vegetarian toothpaste companies such as Dabur and Baidyanath operated in the toothpowder market.

II. Methodology

Description of study area

Bangalore is the fastest growing city in Karnataka. The population is heterogeneous with diverse cultural, religious and economic background. Because of the existence of various linguistic, religious and ethnic groups, it has been a very good marketing centre for targeting various groups of customers. So the researcher selected Bangalore city for studying the impact of self concept on toothpaste brands buying behavior.

Research Approach

The research strategy used in this study was quantitative. According to Bryman and Bell (2007), quantitative research strategy entails a deductive approach where focus is on testing exiting theories. Lewis et al. (2009) note that quantitative research focuses on data collection techniques and data analysis procedures that use or produce numerical data. They also note that quantitative data is based on meanings that have been derived from numbers and analyzed by using diagrams and statistics whereas qualitative data is based on meanings expressed through words and analyzed by using classification into categories and conceptualization (Lewis et al. 2009). Therefore, qualitative research method was not suitable for this study.

Research design

Prior to determining which research method to use, it is imperative to decide on research design (Bryman & Bell, 2003). The research design is a framework that determines the collection and analysis of data. It details the procedures that are needed to carry out the study and the nature of the information that is to be collected is thoroughly defined (Malhotra & Birks, 2003).The researcher adopted descriptive research methodology. In descriptive research design objectives are clearly established based on that questionnaire was designed and analyzed.

Sampling Design

The sampling method chosen for this study was convenience sampling which is a form of non-probability sampling. A non-probability

sample is a sample that has not been selected using a random sampling method which means that in non-probability sampling some people are more likely to be chosen than others (Bryman & Bell 2007).

Instrument selection &Data collection

Bryman and Bell (2003) discussed, more specifically structured interviewing, questionnaires, structured observation and content analysis. Structured observation was not chosen, because it is difficult to analyze the influencing factors lies inside a person, it can be difficult to observe what a person actually thinks. This study aims to capture the influence of defined factors at the moment of truth, i.e. how the buying behaviour is taken place. Therefore this study also excludes content analysis. Structured interview method also not applied in this study because of larger sample size. Structured questionnaire was used to collect the information from respondents in Bangalore city. Secondary data collected through website, journal, magazine, books, dissertation and database for theoretical support.

III. Review of literature

Consumer buying behaviour

According to **Kotler and Armstrong (2001)**, consumer buying behaviour refers to the buying behaviour of the individuals and households who buy the goods and services for personal consumption. Consumers around the world are different in various factors such as age, income, education level and preferences which may affect the way they avail of goods and services. This behaviour then impacts how products and services are presented to the different consumer markets.

There are many components which influence consumer behaviour namely: cultural, social, personal and psychological **(Kotler & Armstrong, 2001)**. These characteristics cannot be controlled by the companies; therefore, a need to assess these elements in order to create an effective marketing plan. Many people do consume a wide range of products every day,

from basic necessities to high-valued collectables. Owing to the proliferation of products in the market, such phenomenon is one of the most interesting and hence heavily investigated topics in the marketing field. As mentioned by **Schiffman and Kanuk (2000),** consumer behavior is about how people make their decisions on personal or household products with the use of their available resources such as time, money and effort.

Gabbott and Hogg (1998) and **Blackwell et al. (2006)** further provide a holistic view that defines consumer behavior as the activities and the processes in which individuals or groups choose, buy, use or dispose the products, services, ideas or experiences.

The study of consumer buying behavior is of utmost importance in a number of aspects. First of all, consumer behavior can influence the economic health of a nation (Blackwell et al., 2006). Consumers would have their preferences in purchasing products from specific retailers and hence the remaining retailers are selected using the rule of 'survival of the fittest'. Therefore, consumers' decisions can provide a clue for which industry to survive, which companies to succeed,

IV. Results and Discussion

Table 1

Self-concept of a person is influencing the consumer for buying toothpaste brand

The relation between self concept and buying behaviour toothpaste brands are analysed by using correlation analysis. Correlation analysis provides the nature, direction and relationship between self-concept and buying behaviour towards toothpaste brands.

Buying behaviour towards toothpaste brands			
S.No	Self-concept	Pearson correlation	Significance (p)
1	My beliefs about myself often conflict with one another.	-0.265**	0.000
2	On one day I might have one opinion of myself and on another day I might have a different opinion.	-0.132**	0.004
3	I spend a lot of time wondering about what kind of person I really am.	-0.206**	0.000
4	Sometimes I feel that I am not really the person that I appear to be.	-0.182**	0.000
5	When I think about the kind of person I have been in the past, I'm not sure what I was really like.	-0.102*	0.025
6	I seldom experience conflict between the different aspects of my personality.	0.162**	0.000
7	Sometimes I think I know other people better than I know myself.	-0.118*	0.010
8	My beliefs about myself seem to change very frequently.	-0.097*	0.032
9	If I were asked to describe my personality, my description might end up being different from one day to another day.	-0.089*	0.049
10	Even if I wanted to tell, I don't think I could tell someone what I'm really like.	-0.070	0.121
11	In general, I have a clear sense of who I am and what I am.	0.077	0.091
12	It is often hard for me to make up my mind about things because I don't really know what I want	0.781	0.086

Correlation analysis was applied to find the relation between self concept and buying behaviour towards toothpaste brands. In this study, the researcher reverse coded the statements 1 to 10, and 12 except 11th statement. So the negative statements are converted into positive statements. The result obtained in table 4.51 shows that; self concept of a person is related with buying behaviour towards tooth paste brands. Except the statements, 10, 11 and 12 other statements are related with buying behaviour towards toothpaste brands.

One day I might have one opinion of myself and on another day I might have a different opinion this is related with buying behaviour towards toothpaste brands; and the level of significance is 1 percent. This statement is converted in to positive statement, so consumers are not having different opinion about themselves. I spend a lot of time wondering about what kind of person I really am is related with buying behaviour towards toothpaste brands; and the level of significance is 1 percent. This statement is converted in to positive statement, so consumers are not wondering about themselves. Sometimes I feel that I am not really the person that I appear to be, is related with buying behaviour of toothpaste brands; and the level of significance is 1 percent. This statement is converted in to positive statement; reality and appearance of the consumers are same.

When I think about the kind of person I have been in the past, I'm not sure what I was really like this is related with buying behaviour towards toothpaste brands, and the level of significance is 5 percent. This statement is converted in to positive statement; consumers in the past and present are same.

I seldom experience conflict between the different aspects of my personality is related with buying behaviour towards toothpaste brands and the level of significance is 1 percent. This statement is converted in to positive statement; consumers are not having any conflict with different aspects of their personality.

Conflict between their own personalities is related with the buying behaviour towards toothpaste brands, and the level of significance is 1 percent. This statement is converted in to positive statement; there is no conflict with their personality.Sometimes I think I know other people better than I know myself and this is related with buying behaviour towards toothpaste brands, and the level of significance is 5 percent. This statement is converted in to positive statement; consumers are understood themselves first then understanding others.That my belief about myself seems to change very frequently is related with buying behaviour towards toothpaste brands; and the level of significance is 5 percent. This statement is converted in to positive statement; consumers" beliefs are not changing very frequently.If I were asked to describe my

personality, my description might end up being different from one day to another day and this is related with buying behaviour towards toothpaste brands, and the level of significance is 1 percent. This statement is converted in to positive statement; description of personality is same in all the days.

The result shows that statements 1 to 9 are related with buying behaviour towards toothpaste brands. Based on this study, it is concluded that positive self of a consumer affects the buying behaviour of people. Self differ from person to person; it depends on the heredity, and the personality of a person. It is difficult to analyze the self of a person. So with the help of using self concept scale, researchers and companies are reading the mindset of a person,

based on that they are analyzing the buying behaviour. This is similar to the study conducted by Sirgy and Ekinci. Sirgy, (1982) ascertained that consumers" selfconfidence is one of the key antecedents of brand choice behaviour and customization. He postulates the congruence between the consumers" self-concept image and the brand image is a determinant of various outcomes including product modification and customer satisfaction. Ekinci and Riley, (2003), assert aligning consumers" self concept with their concept of the product, may be part of the process of the consumer making an efficient purchase transaction. The companies have to plan for suitable marketing mix strategy based on the self concept of a person.

Table: 2 Self-concept of a person is influencing buying behaviour towards toothpaste brands.

Self- concept of a consumer is affecting the selection of brand. Understanding the inner characteristics of a person is possible with the help of using self-concept scale. Significant relationship between self-concept of a consumer

and buying behaviour towards toothpaste brands are analysed by using regression analysis. It explains the correlation, relationship, variance, and significant difference between self-concept and buying behaviour towards toothpaste brands. This is explained in the table given below.

Self Concept	R value	R^2 value	F value	Constant	Beta	t value	Significance (P)
1	0.265	0.070	36.366	2.914	-0.141**	-6.030	0.000
2	0.132	0.017	8.592	2.700	-0.070**	-2.931	0.004
3	0.206	0.042	21.420	2.805	-0.112**	-4.628	0.000
4	0.182	0.033	16.475	2.786	-0.101**	-4.059	0.000
5	0.102	0.010	5.051	2.638	-0.059*	-2.247	0.025
6	0.162	0.026	13.082	2.171	0.093**	3.617	0.000
7	0.118	0.014	6.765	2.644	-0.061*	-2.601	0.010
8	0.097	0.010	4.604	2.628	-0.053**	-2.146	0.000
9	0.89	0.010	3.897	2.612	-0.047*	-1.974	0.049
10	0.070	0.005	2.408	2.584	-0.039	-1.552	0.121
11	0.077	0.006	2.870	2.283	0.048	1.694	0.091
12	0.078	0.006	2.966	2.592	-0.041	-1.722	0.086

Note : *Significant at 5 % level (p value <0.05), **significant at 1% level (p value< 0.01)

Regression analysis was applied to find the significant relationship between buying behaviour towards toothpaste brands and self-concept. The result obtained in table 2 shows that, there is a significant relationship between buying behaviour towards toothpaste brands and self concept statements 1 to 9. Statements 10, 11, and 12 are not influencing the buying behaviour.

The R value indicates the correlation between self concept statements and buying behaviour towards toothpaste brands. The R square value indicates that percentage relationship with buying behaviour towards toothpaste brands. The R square value for statement 1 is 7 percent,

statement 2 is 1 percent, statement 3 is 4 percent, statement 4 is 3 percent, statement 5 is 1 percent, statement 6 is 2 percent, statement 7 is 1 percent statement 8 is 1 percent, statement 9 is 1 percent, Statement 10 is 0 percent and statement 11 is 0 percent and statement 12 is 0 percent.

Multiple regression equation Y =Constant +X (Beta value)
Y-----Dependent variable (buying behaviour towards toothpaste brands
X------Independent variable (self concept statement)

Statement 1
Y = -0.141 + 2.91X
Statement 2
Y = -0.070+ 2.700 X
Statement 3
Y = -0.112+ 2.805 X
Statement 4
Y = -0.101+ 2.786 X
Statement 5
Y = -0.059+ 2.638 X
Statement 6
Y = 0.093+ 2.171 X
Statement 7
Y = -0.061+ 2.644 X
Statement 8
Y = -0.053+ 2.628 X
Statement 9
Y = -0.047+ 2.612 X
Statement 10
Y = -0.047+ 2.584 X
Statement 11
Y = -0.048+ 2.283 X
Statement 12
Y = -0.041+ 2.592 X

The above equation describes that the overall self concept of a person increases by 0.093 unit for every one unit increase in statement 6, and does not increase for 1, 2, 3, 4, 5, 7, 8, and 9. If p value is less than 0.01 or 0.05, then the significant relationship exists between independent variable and dependent variable.

Statement 6 is positively related with buying behaviour towards toothpaste brands and the impact is high for statement 6 (I seldom experience conflict between the different aspects of my personality) because of positive beta value 0.093 obtained in table 2. The statement is converted in to positive statement, so consumers are not having any conflict between their own personalities. The p value for statement 1, 2,3,4,6, and 8, are less than 0.01, the p value for statement

5, 7, 9 are less than 0.05. So the relationship exist between buying behaviour towards toothpaste brands and self concept statement 1, 2, 3, 4, 5, 6, 7, 8, and 9. The other statements are not related with buying behaviour towards toothpaste brands. So based on the result obtained in table 4.52, it is concluded that, self concept of a person is influencing the buying behaviour towards toothpaste brands.

This is similar to the views of Monga and John. Self-concept, or how the consumers view and understand themselves, has been found to play an intriguing role in explaining consumer behaviour, ranging from the persuasiveness of ad messages, to evaluations of brand extensions, as well as perceptions of product attributes (e.g., Monga and John, 2007; Zhu and Meyers-Levy, 2009).

So based on the above discussion, the self concept of a person differs from person to person; it affects the buying behaviour of people. The selection of media, sales promotion, price, brand image, company images etc is differing from person to person, based on that, they have to plan for developing communication strategy.

V. Conclusion

Regressions analysis was applied to find the relationship between self concept and toothpaste buying behaviour. Self concept statements are treated as independent variable and toothpaste buying behaviour is treated as dependent variable. The result showed that except few statements other statements are positively related with toothpaste buying behaviour. There is difference of opinion exist between all the self concept groups. Correlation analysis also applied to test the relationship between self concept statements and toothpaste buying behaviour. The result found was, toothpaste buying behaviour is affected by self concept of a person. Self concept of a person is influencing the consumer for buying toothpaste brands.

Based on their self concept level people select media, brand etc. Understanding the self concept of a people leads to developing marketing strategy. Sirgy (1982) ascertained that consumers' self-confidence is one of the key antecedents of brand choice behaviour and customisation. He postulates the congruence between the consumers' self-concept image and brand image is a determinant of various outcomes including product modification and customer

satisfaction. Ekinci and Riley (2003) asserts aligning consumers' self concept with their concept of the product, may be part of the process Per the consumer making an efficient purchase transaction.

Recommendation

The study of consumer buying behavior is of utmost importance in a number of aspects. First of all, consumer behavior can influence the economic health of a nation. Therefore, consumers' decisions can provide a clue for which industry to survive, which companies to succeed, and also which products to excel. Second, through understanding the reasons for consumers to buy the products and their buying habits, the firms can make use of such information to devise corresponding marketing strategies in response to the consumers' needs. Moreover, present consumer behaviour studies regard consumers as important determinants of organizational success and it is found that the most successful organizations are customer-centric. The notion 'the consumer is king' should be deep-rooted in every business people's mind that they should try to please these kings using their innovative methods. Similarly consumers do not think in words. There is much more subconsciously occurring in the purchase behavior.

Within the existing purchase behaviour, mind, body, brain, and society as a whole are connected in the process .here is a connection to thoughts, feelings, memories, and culture that exists in the consumer behavior realm, all connected and influencing the other. So the companies have to understand the subconscious mind with the help of using this kind of research studies.

Limitation

In this study, psychological variable like self concept is selected to analyze the respondents buying behavior, other psychological variables and demographic variables are omitted in this study. Sample size is also a limitation for this study to evaluate the buying behavior of whole population.

Scope for further research

Toothpaste buying behavior in Bangalore city study is based on only self concept of a person. Further, the attempt to detail the steps of the research methods allows other researcher to discover and point out possible flaws of this study. It is useful for future research when making similar attempts.

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ROUGH SET THEORY - A NEW DECISION MAKING APPROACH FOR CRM IN RETAIL SECTOR

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Abstract

Retailing Industry in India is in a very crucial stage of development due to high competition. CRM has started as a distinct discipline in the early 1980 has grown into a fully fledged conceptual framework over the years. CRM is a process that aims at maximizing customer satisfaction by building mutually beneficial long term relationships with customers. To create CRM strategies it is imperative to understand the customers buying behaviour and customer satisfaction and expectations. Many methods are in use to understand customer expectations. One such emerging method is 'Rough Set Theory'. It is a mathematical data mining tool to derive patterns by means of decision rules which are very simple to understand. To understand it better, a study on customer satisfaction level in a supermarket in Chennai was considered. Decision rules were generated using Rough Set Theory and it is found that the level of satisfaction varies across the gender and across different age groups.

Keywords: CRM, Rough Set Theory, Customer satisfaction, supermarket

I. Introduction

In marketing it is very important to understand the customer consumption trends, and purchasing intentions and behaviour. It is well known that customer satisfaction, with products or services, is an important key to achieving successful business operations and sustaining in the existing competition. Customer satisfaction is a critical issue in retaining customers and makes them a loyal customer. So to understand the impact of buying behaviour on customer satisfaction is critical to understanding customer needs and expectations. Customers' repurchase intentions and the retention of customers is driven mainly by customer satisfaction.

Customer relationship management (CRM) strategies have become increasingly important worldwide due to the changes in expectations from customers as well as changes in the nature of markets. Customer Relationship Management (CRM) is a managerial philosophy that seeks to build long term relationships with customers. CRM can be defined as "the development and maintenance of mutually beneficial long-term relationships with strategically significant customers" **Berndt, 2005**

Methods to analyze CRM

CRM is a philosophy of business operation for acquiring and retaining customers, increasing customer value, loyalty and retention, and implementing customer-centric strategies.

CRM, devoted to improve relationships with customer, focuses on a comprehensive picture on how to integrate customer value, requirements, expectations and behaviours via analyzing data from transaction of customer. Enterprises can shorten sales cycle and increase customer loyalty to build better close relationships with customers and further add revenues by good CRM. Thus, an excellent CRM can help enterprises keeping existing customers and attracting new ones.

In general, the statistical treatment of any CRM study includes the determination of the association between the steps in the CRM model and the customer service offered by the organization. Extensive use was made of Pearson's coefficient to determine the level of association between the steps in the implementation process (**Peppers, 1999**) and customer service. The level of association as measured by Pearson's co-efficient falls between -1.0 and +1.0, which indicates the strength and direction of association between the two variables. The Rules of Thumb suggests that "moderate" ends at ±0.60, and "strong" starts at ± 0.61.It is also necessary to determine a score (p-value) to evaluate the probability that the correlation (r) falls within a desired significance level. The lower the p-value, the stronger the evidence against the null hypothesis, hence the acceptance of the alternative.

A large number of companies apply different tools such as computer software

package, statistical techniques to enhance a more efficient CRM, in order to let companies understand more about their customers. Nowadays, some of the data mining tools for assisting CRM include decision trees (DT), artificial neural networks (ANN), genetic algorithms (GA), association rules (AR), etc. A decision tree is a flow-chart-like tree structure, where each internal node denotes a test on an attribute, each branch represents an outcome of the test, and leaf nodes represent class or class distributions. An artificial neural network is a large number of highly interconnected processing elements (neurons) that uses a mathematical model, computational model or non-linear statistical data modeling tools for information processing to capture and represent complex input/output relationships.

Generally, no tool for data mining in CRM is perfect because there are some uncertain drawbacks in it. For example, in decision trees, too many instances lead to large decision trees which may decrease classification accuracy rate and do not clearly create the relationships which come from the training examples. In artificial neural networks, number of hidden neurons, number of hidden layers and training parameters need to be determined, and ANN has long training times in a large dataset especially. Moreover, ANN served as ''black box'' which leads to inconsistency of the outputs, is a trial-and-error process. In genetic algorithm, GA also has some drawbacks such as slow convergence, a brute computing method, a large computation time and less stability. In association rules, major drawback is the number of generated rules is huge and may be a redundancy. In line with this, an emerging tool to make decisions and to understand patterns from the data is the 'Rough Set Theory'.

II. Review of Literature

In a study by **Jhieh-Yu Shyng ,2005** on the customer satisfaction of insurance customers used the Rough Set Theory in a successful way to predict the key attributes and their influence on the customer satisfaction. Their study result demonstrates that the redefined combination values of attributes can contribute to the precision of decisions in insurance marketing.
A similar study by **James J.H. Liou, 2008**, in understanding the CRM of the airlines market has used Rough Set Theory in accurately predicting the behaviour of its customers based on their perception of choice, and so develop the appropriate marketing strategies.

Shinya Imai, 2008 in his study to analyze the customer relationship in the IT corporations used the Rough Set Theory. In the study, Rough Set model is used to deal with vagueness/ambiguity and uncertainty in the analysis of human resource and human relationship management, and proved that tool can change a qualitative problem into a quantitative one. The Rough Set approach differentiates between the two groups, and in the end suggests some policies to improve the quality of customer relationship management and the development of them.

Ching-Hsue Cheng, 2009 in his study on CRM using Rough Set Theory has proved that the emerging tool RST can be combined with other statistical tools like Cluster Analysis and RFM method in making the final business strategies and decisions more exhaustively and in more understandable way.

Rough Set Theory

Rough Set Theory is mathematical data mining tool used to analyze the content and features of data. The theory, which was developed by **Pawlak, 1982**, is a rule-based decision-making technique that can handle crisp datasets and fuzzy datasets without the need for a pre-assumption membership function, which fuzzy theory requires. It can also deal with uncertain, vague, and imperceptible data.

Rough Set Theory can deal with inexact, uncertain, and vague datasets. Both Fuzzy Set Theory and Rough Set Theory are used with the indiscernibility relation and perceptible knowledge. The major difference between them is that Rough Set Theory does not need a membership function; thus, it can avoid pre-assumption and one-sided information analysis. The Rough Set method is useful for exploring data patterns because of its ability to search through a multi-dimensional data space and determine the relative importance of each attribute with respect to its output. (**Jhieh-Yu Shyng ,2005**)

III. Rough set Theory for decision-making

Rough Set Theory is a mathematical approach to managing vague and uncertain data or problems related to information systems, indiscernibility relations and classification, attribute dependence and approximation accuracy, reduct and core attribute sets, and decision rules.
With respect to rough set theory (RS theory), five advantages are expressed as in the following:

(1) The RS theory does not require any preliminary or additional parameter about the data;

(2) They can work with missing values, switch among different reducts, and use less expensive or time to generate rules;

(3) They offer the ability to handle large amounts of both quantitative and qualitative data;

(4) They yield understandable decision rules and own stability; and

(5) They can model highly non-linear or discontinuous functional relationships provides a powerful method for characterizing complex, multidimensional patterns

Basic concepts of the rough sets theory
Information system

Formally, an *information system*, IS is an approximation space, can be seen as a system IS = (U, A) where U is the universe (a finite set of objects, $U= (x1, x_2, x_m)$. and A is the set of attributes (variables).

Each attribute $a \in A$ (attribute a belonging to the considered set of attributes A) defines an information function $f_a : U \to V_a$, where V_a is the set of values of a, called the domain of attribute a.

Indiscernibility relation

For every set of attributes $B \subseteq A$, an *indiscernibility relation* Ind(B) is defined in the following way:

Two objects, x_i and x_j , are indiscernible by the set of attributes B in A, if $b(x_i)= b(x_j)$ for every $b \in B$.

The equivalence class of Ind_B. is called *elementary set* in B because it represents the smallest discernible groups of objects. For any element x of U, I the equivalence class of x in relation Ind(B) is represented as $[x_i]_{Ind(B)}$. The construction of elementary sets is the first step in classification with rough sets.

Lower and upper approximations

The rough sets approach to data analysis hinges on two basic concepts, namely the *lower* and the *upper approximations* of a set

- the elements that doubtlessly belong to the set,

and

- the elements that possibly belong to the set.

Let X denote the subset of elements of the universe U $(X \subset U)$. The lower approximation of X in $B(B \subset A)$, denoted as $\underline{BX}$, is defined as the union of all these elementary sets which are contained in X.

More formally:

$\underline{BX} = \{ x_i \in U/ [x_i]_{Ind(B)} \subset X\}$

The above statement is to be read as: the lower approximation of the set X is a set of objects xi which belong to the elementary sets contained in X (in the space B).

The upper approximation of the set X, denoted as BX, is the union of these elementary sets, which have a non-empty intersection with X:

$BX = \{ x_i \in U/ [x_i]_{Ind(B)} \bigcap X \neq 0\}$

For any object x_i of the lower approximation of X(i.e., $x_i \in \underline{BX}$, it is certain that it belongs to X.

For any object x_i of the upper approximation of X(i.e., $x_i \in BX$) , we can only say that x_i may belong to X. The difference:

$BNX = BX - \underline{BX}$ is called a boundary of X in U.

Accuracy of approximation

An accuracy measure of the set X in $B \subseteq A$ is defined as:

$\mu_B(X) = card(\underline{BX}) / card (BX)$

The cardinality of a set is the number of objects contained in the lower (upper) approximation of the set X.

Core and reduct of attributes

If the set of attributes is dependent, one can be interested in finding all possible minimal subsets of attributes, which lead to the same number of elementary sets as the whole set of attributes (reducts) and in finding the set of all indispensable attributes (core).

The concepts of core and reduct are two fundamental concepts of the rough sets theory. The reduct is the essential part of an IS, which can discern all objects discernible by the original IS. The core is the common part of all reducts. To compute reducts and core, the discernibility matrix is used. The discernibility matrix has the dimension n x n, where n denotes the number of elementary sets and its elements are defined as the set of all attributes which discern elementary sets $[x]_i$ and $[x]_j$.

Classification

Let $F= \{ X_1 , X_2 , . . . , X_n\}$, $X \subset U$, be a family of subsets of the universe U. If the subsets in F do not overlap, i.e.,

$X_i \cap X_j = \emptyset$, and the entity of them contains all elementary sets, i.e.

$\cup X_i = U$ for all $i = 1,2,3....n$ then, F is called a classification of U, whereas X i are called classes.

Decision table

A knowledge representation system containing the set of attributes A (now called condition attributes) and the set of decision attributes D is called a decision table.

Empirical study: A case of CRM in a supermarket

IV. Methodology, Results & Discussion

In order to demonstrate the effectiveness of the Rough Set Theory an empirical study was conducted in a supermarket in Chennai city about the level of customer satisfaction. 45 sample respondents were selected at random on a Sunday evening. Data were collected in a structured questionnaire with a 5 point Likert scale.

Factors considered for the study to analyze the customer satisfaction level are chosen by reviewing the various available literatures on CRM. The most common factors are 1) distance from their residence (**Vieira et al 2007**) 2) Extended working hours (**Usha Rani et al,2009**) 3) location of the supermarket (**Miranda et al 2004**) and 4) crowdedness of the supermarket (**Damir Anić et al 2006**).

In the sample size of 45, 24 were female respondents and 21 were male respondents. The details about the various age group is shown in table 1

Table 1

Years	<25	26 to 35	36 to 45	>45	Total
Female	2	8	9	5	24
Male	1	6	8	6	21
Total	3	14	17	11	45

Source: Primary Data

Table 2 depicts the variables used for the study and their value sets. The conditional attributes considered for the study were Age, Gender, Income level, Distance of the store from respondent's home, Current working hours of the store, Location of the store and Crowdedness of the store. The decision attribute is the Overall satisfaction of the respondents.

Table 2

SNo	Attribute Name	Attribute Values	Value Set
	Condition Attributes		
1	Age	<25; 25 to 35; 36 to 45 ; >45	[Y, LM, UM, O]
2	Gender	Male; Female	[M,F]
3	Income Level (in lakhs)	<2; 2 to 3 ; 3 to 4; 4 to 5 >5	[VLI,LI,AVG,HI,VHI]
4	Distance (in KM)	<1/2; ½ to 1; 1 to 2; 2 to 3 and > 3	[VN,N,AVG, F,VF]
5	Working hours	Highly Dissatisfied; Dissatisfied; can't Say; Satisfied; Highly Satisfied	[HDS,DS,CS, S, HS]
6	Location	Highly Dissatisfied; Dissatisfied; can't Say; Satisfied; Highly Satisfied	[HDS,DS,CS, S, HS]
7	Crowdedness	Highly Dissatisfied; Dissatisfied; can't Say; Satisfied; Highly Satisfied	[HDS,DS,CS, S, HS]
	Decision Attribute		
8	Overall Customer Satisfaction	Highly Dissatisfied; Dissatisfied; can't Say; Satisfied; Highly Satisfied	[HDS,DS,CS, S, HS]

Source : Questionnaire

Table 3

Class	No of Objects	Lower Approximation	Higher Approximation	Accuracy
Highly Dissatisfied	1	1	1	1.00
Dissatisfied	10	10	10	1.00
can't Say	15	15	15	1.00
Satisfied	18	18	18	1.00
Highly Satisfied	1	1	1	1.00

Source : ROSE2

There is no difference between the Lower approximation and the higher approximation and the accuracy of the classification are 1.00. (Table 3). This shows that all the objects (respondents) were able to classify perfectly and no object falls in the boundary region. More over there is no reduct generated from the data.

Decision Rules
Table 4

S No	Condition	Decision	Confidence level
1	(gender =M) & (age = Y)	Satisfaction = HS	1
2	(gender = M) & (distance = VF)	Satisfaction = HS	1
3	(distance = VF) & (location = S)	Satisfaction = CS	1
4	(gender = M) & (Ext_Hrs = CS) & (crowd = DS)	Satisfaction = HS	1
5	(age = Y) & (Income_level = AVG) & (location = S)	Satisfaction = S	1
6	(Income_level = AVG) & (distance = VF) & (Ext_Hrs = CS)	Satisfaction = HS	1
7	(distance = VF) & (Ext_Hrs = CS) & (crowd = DS)	Satisfaction = CS	1
8	(age = O) & (Income_level = HI) & (Ext_Hrs = CS)	Satisfaction = HDS	1
9	(gender = F) & (age = O) & (Ext_Hrs = CS)	Satisfaction = HDS	1
10	(age = O) & (Income_level = HI) & (distance = N)	Satisfaction = DS	1
11	(age = O) & (Income_level = HI) & (Ext_Hrs = CS)	Satisfaction = DS	1
12	(age = O) & (Income_level = HI) & (crowd = DS)	Satisfaction = HDS	1
13	(age = O) & (distance = N) & (Ext_Hrs = CS)	Satisfaction = DS	1
14	(age =UM) & (Ext_Hrs = CS) & (crowd = S)	Satisfaction = DS	1

Source : ROSE2

In all 17 rules were generated by the algorithm LEM2 using the software ROSE2. Of which 4 'Highly Satisfied' rules, 1 'Satisfied' rule, 2 'Can't Say' rules, 4 'Dissatisfied' rules and 3 'Highly Dissatisfied' rules were generated.

For making the decision much easier, a confidence level of above 1.00 is considered. 14 out of 17 decision rules generated were listed in table 4 whose confidence level is equal to 1.00.

Reviews and Discussion

In Table 4 the decision rules with conditions were listed out. The interpretations of some of the rules are given below.

Rule 1- With a confidence level of 1.00, young male are 'Highly satisfied' with the existing supermarket.

Rule 2 – Male respondents who are coming for purchase from a distance of more than 3 KM are 'Highly satisfied'.

Rule 3 – Respondents who are coming for purchase from a distance of more than 3 KM and location of the store is satisfactory feel that their overall satisfaction level is 'Can't Say'.

Rule 4 – Male respondents who think that crowdedness is 'Dissatisfied' and working hours 'Can't Say' feel that their overall satisfaction is 'Highly Satisfied'.

Rule 5 - Young respondents with an average income level (3 to 4 lakhs pa) having the feeling that location is 'Satisfactory' and opines that overall satisfaction is 'Satisfactory'.

V. Conclusion

CRM is a highly complex issue for the retail managers. Though many methodologies are available to understand the customer behaviour and their buying pattern, it requires a more in-depth knowledge about it. Rough Set Theory is a user friendly mathematical tool to analyze the customer market trends in an easier way by means of decision rules. Decision rules generated by the Rough Set Theory are easy to interpret for the retail mangers. It also helps the managers to chart out more competitive strategic plans to get a bigger market share and to understand the customer needs and enhance their profit by creating more loyal customers.

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INFLUENCE OF WOMEN EMPOWERMENT ON ORGANIZATIONAL COMMITMENT IN SERVICES SECTOR IN PUDUCHERRY

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Abstract

Women empowerment can be broadly referred to as the expansion of freedom of choice and action. Resources and agency are the two most common components of empowerment according to the literature reviewed. In many cases resources are treated as catalyst for empowerment, enabling factors or sources of empowerment. Organizational commitment represents an individual's identification with the goals of the organization, how much the individual values membership in the organization and the degree to which they intend to work to attain organizational goals (Mowday, Steers and Porter, 1979).

The present study is intended to find the relationship between women empowerment and organizational commitment. For the study, women working in various services sectors such as educational services sector, health services sector, banking and insurance sector, hotel and restaurant sector, transport and communication sector, software & hardware sector, police department and others were taken as the population. This study is significant because organizational commitment predicts work variables such as turnover, organizational citizenship behavior and job performance.

The samples for the study comprised of women belonging to various age groups and various designations working in different services sectors. 300 samples were selected at random from these services sectors and primary data were collected from them. The instruments for primary data collection were questionnaire and schedule. Data were analyzed through statistical analysis methods such as percentage and correlation. It was found that there existed a high degree of positive relationship between women empowerment and organizational commitment. Women empowerment and organizational commitment scores were high for women working in banking and insurance sector. Also women in top positions in the age group of 56 – 60 years were found to have the highest empowerment and commitment scores.

Key Words: Women empowerment, organizational commitment, services sectors, age, designation

I. Introduction

The term empowerment is frequently heard today, whether in media or in the class room. It is clearly connected to the word 'power'. Simply speaking empowerment is derived from the word 'empower' meaning to give or to acquire power or to increase power. It can therefore be viewed as both a process as well as a result of social change. Management gurus discovered 'empowerment' and infused it into the human-resource development and motivational practices of the corporate world, turning it to the service of profit making and competitiveness in the market place. Thus the 1990s witnessed a widespread co-option of the term by corporate management, neo-con political movements, and consumer-rights advocates, according to Srilatha (2010).

According to *Organizational behavior* and *Industrial and organizational psychology*, organizational commitment is the individual's psychological attachment to the organization, highlights Wikipedia. It has two facets; one the organization's perspective and the other employee's. Commitments develop naturally. Commitment can be in form of the nature of relationship between an employee and the organization or relationship to a variety of entities. Commitment can be observed as an attitude or mindset (attitudinal commitment) where the commitment arises due to convergence of goals and values and develops prospectively. Commitment can be behavioral where it develops post membership in retrospect which facilitates rationalization of continuance in an organization or a course of action.

Now to gain insight on services sectors, the services sector has been a major and vital force steadily driving growth in the Indian economy for more than a decade. The economy has successfully navigated the turbulent years of

the recent global economic crisis because of the vitality of this sector in the domestic economy and its prominent role in India's external economic interactions. The services sector covers a wide range of activities from the most sophisticated information technology (IT) to simple services provided by the unorganized sector, such as the services of the barber and plumber. National Accounts classification of the services sector incorporates trade, hotels, and restaurants; transport, storage, and communication; financing, insurance, real estate, and business services; and community, social, and personal services. In World Trade Organization (WTO) and Reserve Bank of India (RBI) classifications, construction is also included.

However, the present study limits itself to sectors such as educational services sector, health services sector, banking and insurance sector, hotel and restaurant sector, transport & communication sector, hardware and software sector, police department and others. Any other sector other than those mentioned above is beyond the scope of this study.

The objectives of the study are

1. To find which service sector has the highest women empowerment and organizational commitment score.
2. To find the age group of respondents with the highest women empowerment and organizational commitment score.
3. To find the designation of the samples with the highest women empowerment and organizational commitment score.
4. To find the relationship between women empowerment and organizational commitment.

The hypothesis of the study is
H_0: There is no relationship between women empowerment and organizational commitment.

II. Literature Review

For its chief proponents, empowerment is a humanistic device to improve the quality of working life for ordinary employees. For its critics, it is the latest management ruse to intensify work and shift risk. Much more than either TQM or BPR, however, empowerment is also a highly elusive theoretical concept – it has no single guru, nor does it define a clear cut set of policy initiatives (Lincoln et. al, 2002). The concept of women's empowerment is the outcome of important critiques generated by the women's

movement, particularly by 'third world' feminists. They clearly state that women's empowerment requires the challenging of patriarchal power relations that result in women having less control over material assets and intellectual resources (Baltiwala. S, 1994).

Empowerment is a process by which those who have been denied power gain power, in particular the ability to make strategic life choices. For women, these could be the capacity to choose a marriage partner, a livelihood, or whether or not to have children. For this power to come about, three inter-related dimensions are needed: access to and control of resources; agency (the ability to use these resources to bring about new opportunities) and achievements (the attainment of new social outcomes) (Kabeer. N, 2001).

The need to □empower□ women responds to the growing recognition that women in developing countries lack control over resources and the self- confidence and/or opportunity to participate in decision-making processes. At the same time, the realization that women have an increasingly important role to play in social and economic development has become widely accepted. Unless women are □empowered□ to participate alongside men in the development process, development efforts will only have partial effect (Oxaal et. al, 1997).

Empowerment is said to influence organizational commitment. Meyer and Allen (1987, 1990) distinguish affective, continuance, and normative dimensions of commitment. Affective commitment refers to an emotional attachment to the organization. For this dimension, the strongly committed member identifies with, is involved in, and enjoys membership in the organization. Affective commitment is sometimes termed "attitudinal commitment" and "loyalty." It is the most common conceptualization of commitment in the literature and is best represented by the work of Mowday and his colleagues (Mowday, Porter and Steers, 1982). Continuance commitment is an individual's assessment of the utility of remaining with the organization. This dimension (Becker, 1960) involves assessing the potential loss of valued investments associated with leaving the organization. Finally, normative commitment is defined in terms of duty. The work of Wiener (1982) suggests that individuals will behave in accordance with organizational goals because "they believe it is the right and moral thing to do."

Affective commitment is this study's focus. Most studies of organizational commitment have

focused on affective commitment and used Mowday and his colleagues' measure in estimating their models (Porter, Steers, Mowday and Boulian, 1974). Commitment henceforth means affective commitment.

The theoretical importance of commitment stems mostly from its negative impact on absenteeism and turnover (Mowday, Porter and Steers, 1982; Steers, 1977). There is also literature which argues that increased commitment produces better job performance (Mowday, Porter and Dubin, 1974). Absenteeism, turnover, and job performance are important because of their link with effectiveness of organizations.

III. Methodology

The study was conducted among 300 women working in various services sectors such as educational sector, health services sector, banking and insurance sector, hotel and restaurant sector, transport and communication sector, hardware and software sector, police department and others in Pondicherry town. Women working in beauty parlours, tailor shops, courier shops, departmental stores and similar outlets were grouped under 'others' category. The variables of the study are explained below.

Demographic variables

Demographic factors include item such as age and designation and the rest of the demographic variables are not considered for the present study. Based on the various designations of the employees, they were categorized into top level employees, middle level employees and lower level employees. Top level employees were those who were involved in the organization's decision making process. Middle level employees were those who acted like a link between the top and the lower level employees. Lower level employees were those who did only manual work and were not involved in any kind of decision making.

Behavioural Variable

The behavioural variable under consideration for this study is organizational commitment. This behavioural variable is measured and its relationship with the dependent variable 'women empowerment' is found using statistical analysis.

Data collection

Data from the samples were collected using simple random sampling technique. The instruments of data collection were questionnaire and schedule. One set of questions for women empowerment and the other for organizational commitment were used.

Organizational Commitment Instrument Description

This refers to the dedication of employees towards their work.

This scale has been developed by R. T. Mowday, R. M. Steers, L. W. Porter (1979). This scale consists of 15 items.

Instructions

The following statements are related to one's work situation that leads to organizational commitment. Please indicate your response by circling the number which represents your feelings. 5 – Strongly Agree   4 – Agree   3 – Not Decided   2 – Disagree   1 – Strongly Disagree

Scoring

The overall total score indicates the level of organizational commitment of the employees. This scale consists of 15 items. The maximum score is 75 and the minimum score is 15. Mean values of less than 41 is considered low, scores between 41 and 59 is moderate and the mean value of 59 and above is high. Higher the score, higher is the organizational commitment of the employees.

Reliability

The reliability value of this scale was measured in the pilot study conducted among 100 respondents and it was found to be 0.886 (Cronbach's alpha value).

Women Empowerment Instrument

Women empowerment questionnaire consisted of a self constructed scale covering six dimensions such as – economic dimension, socio – cultural dimension, familial / interpersonal dimension, legal dimension, political dimension and psychological dimension (Malhotra, 2003). Each dimension carried 15 questions and therefore had a total of 90 questions put together. Each question had 5 choices based on Likert's 5 – point scale (1 - Strongly agree, 2 – Agree, 3 – Neutral, 4 – Disagree, 5 – Strongly Disagree). This scale was tested for reliability and a score of 0.774 (Cronbach's alpha value) was obtained. The maximum score for women empowerment would be 450 and the minimum score would be 90.

Mean value of less than 150 is considered low, scores between 150 and 300 is moderate and the mean value of 300 and above is considered to be high. Higher the score, higher is the empowerment of women.

Tools for statistical analysis

For statistical analysis percentage and correlation were used. Simple percentage analysis gives the data in the form of percentages from which the data can be easily interpreted and correlation analysis tells whether or not there is relationship between two variables.

IV. Results and Discussion
Table 1
No. of Respondents Belonging to Different Age Groups and working in Different Services Sector

Sector \ Age	21 - 25	26 - 30	31 - 35	36 ˇ 40	41 - 45	46 - 50	51 ˇ 55	56 - 60	Total
Education	5	6	8	11	12	9	7	3	61
Health	2	3	4	9	11	6	5	2	42
Banking & Insurance	3	4	5	9	12	6	4	4	47
Hotel & Restaurant	7	8	9	5	8	4	3	2	46
Transport & Comm	2	3	5	6	4	2	3	2	27
Hardware & software	3	4	3	5	5	4	3	3	30
Police Dept	2	2	4	5	4	3	2	3	25
Others	1	2	2	4	6	3	2	2	22
Total	25	32	40	54	62	37	29	21	300

Table 1 shows the different age group of the respondents and also the different services sector in which they are working. It shows that most of the respondents are employed in education institutions with a total of 61 employees out of a total of 300 respondents. The next highest employer is the Banking and Insurance Sector with 47 employees closely followed by Hotel and Restaurant Sector employing 46 women out of the total sample of 300 women. The health services sector stands in the fourth place employing 42 women followed by the hardware and software sector employing 30 women from the total 300 samples. The transport and communication sector employs 27 women and police department employs 25 women out of a total 300 samples. In the 'others' category which comprises of women working in beauty parlours, tailor shops etc., 22 women were employed out of 300 samples, which was found to be the least.

The Table 1 also shows that 62 respondents out of 300 samples belonged to the 41 – 45 age group, 54 respondents belonged to 36 – 40 age group, 40 respondents belonged to 31 – 35 age group, 37 respondents belonged to 46 – 50 age group, 32 respondents belonged to 26 – 30 age group, 29 respondents belonged to 51 – 55 age group, 25 respondents belonged to 21 – 25 age group and 21 respondents belonged to 56 – 60 age group out of the total 300 respondents.

Table 2

Percentage of Respondents Working in Different Services Sector

Services Sectors	Total	Percentage
Education	61	20%
Health	42	14%
Banking & Insurance	47	16%
Hotel & Restaurant	46	15%
Transport & Communication	27	9%
Hardware & software	30	10%
Police department	25	8%
Others	22	8%
Total	300	100%

Table 2 shows the total number of respondents in each sector and their corresponding percentages. It can be seen that 20% of the employees worked in the education sector, 16% of the employees worked for the banking and insurance sector and 15% of the employees belonged to the hotel and restaurant sector. It was 14% of the respondents who belonged to the health services, 10% of the respondents belonged to the hardware and software sector, 9% of the samples belonged to the transport and communication sector and 8% of the samples belonged to police department and 'other services' category each.

Table 3

Percentage of Respondents Belonging to Different Age Groups

Age	Total	Percentage
21 ˅ 25	25	8%
26 ˅ 30	32	11%
31 ˅ 35	40	13%
36 ˅ 40	54	18%
41 ˅ 45	62	21%
46 ˅ 50	37	12%
51 ˅ 55	29	10%
56 ˅ 60	21	7%
Total	300	100%

Table 3 shows the number of respondents belonging to various age groups and the corresponding percentages. It can be seen that 21% of the employees belonged to the age group 41 – 45 years, 18% of the employees belonged to the age group 36 – 40 years and 13% of the employees belonged to the age group 31 – 35 years. It was 12% of the respondents who belonged to the age group 46 – 50 years, 11% of the respondents who belonged to the age group 26 – 30 years, 10% of the samples who belonged to 51 – 55 age group, 8% of the samples who belonged to the age group 21 – 25 years and 7% of the samples who belonged to the age group 56 – 60 years.

Table 4

Age Wise Classification of Women Empowerment Score and Organizational Commitment Score

Age	Women Empowerment Score	Organizational Commitment Score
21 ˘ 25	163	43
26 ˘ 30	175	43
31 ˘ 35	186	44
36 ˘ 40	194	49
41 ˘ 45	211	49
46 ˘ 50	216	52
51 ˘ 55	232	54
56 ˘ 60	251	57

Table 4 shows the different age categories of respondents and their corresponding *women empowerment* and *organizational commitment* scores. The women empowerment score and organizational commitment score are the highest for the age group 56 – 60 years with the values 251 and 57 respectively. Similarly for the age group 51 – 55 years the women empowerment score and organizational commitment score are the second highest with values 232 and 54 respectively. It can be observed that as the age decreases, the women empowerment scores as well as the corresponding organizational commitment scores decreases respectively.

Table 5

Women Empowerment and Organizational Commitment Scores for various services sector

Variables / Sector	Women Empowerment Score	Organizational Commitment Score
Education	231	53
Health	245	54
Banking & Insurance	250	56
Hotel & Restaurant	163	43
Transport&Communication	179	45
Hardware & software	227	50
Police department	201	48
Others	188	47

Table 5 shows the women empowerment and organizational commitment for women working in various services sector. It can be seen that the banking and insurance sector has the highest women empowerment and organizational commitment score. This sector is followed by the health services sector. This in turn is followed by educational sector. The fourth highest women empowerment and organizational commitment scorer is the hardware and software sector followed by the police department, other sectors, transport and communication and finally the hotel and restaurant sector.

Table 6

No. of respondents under each category of Designation working in various services sector

Designation / Sector	Top level employees	Middle level employees	Lower level employees	Total
Education	10	31	20	61
Health	22	15	5	42
Banking& Insurance	11	29	7	47
Hotel & Restaurant	4	7	35	46
Transport & Communication	3	10	14	27
Hardware & software	10	11	9	30
Police department	2	19	4	25
Others	0	5	17	22
Total	62	127	111	300

Table 6 shows the number of respondents under each designation and the corresponding services sector category. It can be seen that out of a total of 300 respondents, 62 samples belonged to top level category of employees, 127 samples belonged to the middle level category of employees and 111 samples belonged to the lower level category of employees.

Table 7

Total Respondents under Each Designation and the Corresponding Percentages

Designation	Total	Percentage
Top level employees	62	21%
Middle level employees	127	42%
Lower level employees	111	37%
Total	300	100%

Table 7 shows the total respondents under each category of designation and the percentage corresponding to each of them. It can be seen that 42% of the samples belonged to middle level category of employees which is the highest followed by lower level employees at 37% and top level employees at 21%.

Table 8

Designation Wise Classification of Women Empowerment Score and Organizational Commitment Score

Designation	Women Empowerment Score	Organizational Commitment Score
Top level employees	249	55
Middle level employees	196	47
Lower level employees	167	43

Table 8 shows the women empowerment scores and organizational commitment scores of the respondents belonging to different designations. The scores are the highest for top level employees the values being 249 and 55 respectively, followed by the scores of middle level employees at 196 and 47 respectively. The scores are the least for lower level employees at 167 and 43 respectively.

Table 9

Correlation between Women Empowerment and Organizational Commitment

Variables	Sample size	Correlation value	Inference
Women Empowerment	300	r = 0.753	High degree of positive correlation
Organizational commitment	300		

Table 9 shows the correlation between women empowerment and organizational commitment. From the calculated value of correlation it can be seen that there is a high degree of positive correlation between women empowerment and organizational commitment with the value being r = 0.753. This is also shown graphically below.
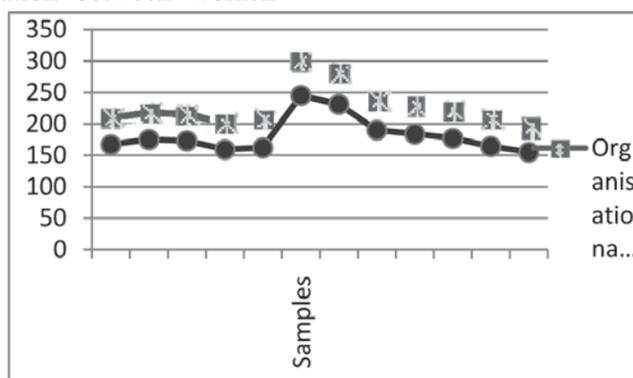

Figure 1. Graphic representation of correlation between women empowerment and organizational commitment

From the above line graph the high degree of positive relationship between women empowerment and organizational commitment is clearly seen.

Results and discussion

The above analysis gives a clear picture about the various age groups of respondents and the different services sector in which they are engaged.

Table 1 shows that most of the women in Puducherry worked for educational institutions, followed by banking and insurance sector. The third sector which had more women employed was the hotel and restaurant sector, followed by the health services sector. Many samples (n = 62) were in the age group 41 – 45 years, the next highest (n = 54) was in the age group 36 – 40 years followed by the age group 31 – 35 years with samples size n = 40, out of the total samples 300.

Table 2 shows the employment of the samples in various services sector in terms of percentage. 20% of the samples under study are employed in educational sector, 16% of samples are employed in banking and insurance sector, and 15% of the samples are employed in hotel and restaurant sector followed by 14% of the samples being employed in health services. Also Table 3 shows that 21% of the employees belonged to the age group 41 – 45 years which is the highest percentage followed by 18% of the employees in the age group 36 – 40 years. The third highest was

12% of employees belonging to the age group 46 – 50 years.

From Table 4 it can be seen that women empowerment score and organizational commitment score are the highest for the age group 56 – 60 years with the values 251 and 57 respectively. Similarly for the age group 51 – 55 years the women empowerment score and organizational commitment score are the second highest with values 232 and 54 respectively. It can be observed that as the age decreases, the women empowerment scores as well as the corresponding organizational commitment scores decreases respectively. According to Paula Kantor (2003), women in the Indian context gain status as they age. This is very true as it can be seen from Table 4. Table 5 shows that women empowerment and organizational commitment is the highest for banking and insurance sector followed by health services sector and educational sector.

From Table 6 it can be seen that out of a total of 300 respondents, 62 samples belonged to top level category of employees, 127 samples belonged to the middle level category of employees and 111 Samples belonged to the lower level category of employees. Table 7 shows the total respondents under each category of designation and the percentage corresponding to each of them. It can be seen that 42% of the samples belonged to middle level category of employees which is the highest followed by lower level employees at 37% and top level employees were only 21%. Table 8 shows the women empowerment scores and organizational commitment scores of the respondents belonging to different designations. The scores are the highest for top level employees the values being 249 and 55 respectively, followed by the scores of middle level employees at 196 and 47 respectively. The scores are the least for lower level employees at 167 and 43 respectively. This shows that the top level employees are better empowered than the other level of employees and therefore the organizational commitment also for the top level employees is high.

Table 9 shows the correlation between women empowerment and organizational commitment. From the calculated value of correlation it can be seen that there is a high degree of positive correlation between women empowerment and organizational commitment with the value being $r = 0.753$. This shows that empowerment has a telling influence on organizational commitment as stated by Porter et al (1979).

V. Conclusion

The empirical results support the conclusion that education sector employs the highest number of women and the next highest number of women are employed in the banking and insurance sector. This sector is followed by the hotel and restaurant sector in the third place and the health services sector in the fourth place. This suggests that education sector could be an ideal ground for women who have to balance their work and family life. Most of the samples belonged to the age group of 41 – 45 years.

The results also support the fact that as women age they gain empowerment and as they move up in their career ladder they gain empowerment as stated by Paula Kantor (2003). Therefore commitment towards the organization is high for women working in top level designation when compared to women working in the middle and lower level designations. Women working in banking and insurance sector in the age group of 56 – 60 years were found to have the highest score for empowerment and organizational commitment.

According to Porter et. al (1979), employee empowerment has a direct impact on organizational commitment. From the empirical study it was found that there exists a high degree of positive correlation between women empowerment and organizational commitment. This supports Porter's statement. The result shows that when the level of women empowerment increased the commitment towards the organization also increased and when the women empowerment score decreased organizational commitment score also decreased. This shows that by empowering women, such employees' commitment towards their organization can be increased thereby reducing absenteeism, employee turnover and increasing organizational effectiveness. Job performance also is said to have a direct impact on organizational commitment (Mowday, Porter and Dubin, 1974).

Recommendations

Women play a major and active role in the well being and effectiveness of any organization. Treating women well without showing gender discrimination in the organization is very important. It is all the more important to

empower women irrespective of their age, designation and nature of work. This will help in developing commitment towards the organization which in turn helps the organization to retain its workforce, reduce absenteeism and improve loyalty. Job performance of such women employees will also improve when empowered.

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IMPACT OF EDI ON SUPPLY CHAIN COORDINATION IN FMCG INDUSTRY

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Abstract

During the last few years, both industry and academics have become interested in the area of supply chain management (SCM), as well as research into SCM. In general, SCM is the managing of the supply chain as a single entity. This allows for more productive management decisions because the efficiency of the entire supply chain is the goal of these decisions. The supply chain consists of all activities from the production of raw material to consumption by the end consumer. The research looks at SCM with an emphasis placed on the use of information technology (IT) as a tool for generating supply chain performance improvements. This research focuses specifically on the FMCG industry and its use of SCM and IT to become more efficient and competitive in the delivering of goods to the consumer. This study is especially related to the EDI impact on SCC.

Keywords – Supply chain, management, EDI, Electronic, FMCG

I. Introduction

With today's emphasis on cutting costs and streamlining expenses, many companies are looking to improve their bottom lines with more effective supply chains. Unfortunately, many people involved with companies don't have a clear understanding of what a supply chain is or how it fits into the company's overall strategy. The overall goal of these chains is to keep the process running smoothly at all times and to keep all of the components, technology also plays an important role in the success of supply chain management. Even though the supply chain concept pre-dates the Internet, only through the use of web-based software and communication can it truly reach its full potential? Using the Internet to handle most of the elements involved in supply chain management, including procurement and communication, makes the exchange of data and the running of the supply chain faster. Electronic Data Interchange (EDI) refers to computer-to-computer exchange of business documents in a standard format. The Indian FMCG sector is estimated at US$ 25 billion (Rs. 120,000 crore), including tobacco. It has grown consistently over the last 3-4 years, including the last 12 months of economic slowdown.

II. Review of Literature

Fletcher and Wright (1996) report a study into the relationship between strategic use of information technology in financial service organizations and the strategic context within which such use is made. They found a good degree of integration of marketing and IT groupings with the strategic planning process, but document a high degree of strategic ambiguity and lack of strategic time frame for such investment decisions. The major reason for strategic ambiguity and time frame for investments in IT is the lack of understanding of the business processes and justification for a suitable IT system for SCM.

Objectives of the study

The main aim of this study is to analyze the impact of EDI on supply chain coordination.

III. Research Methodology

Research Design

In this study the researchers adopted descriptive research design. In descriptive research design, objective is clearly established based on that questionnaire was designed and analyzed.

Sampling Design

Convenience sampling method was selected in this study for selecting dealers from FMCG industry in Bangalore city. Convenience sampling is a form of non-probability sampling. A non-probability sample is a sample that has not been selected using a random sampling method

which means that in non-probability sampling some people are more likely to be chosen than others (Bryman and Bell 2003). For this study, the researcher selected 200 respondents as sample size.

Instrument selection and Data collection

Structured questionnaire was used to collect the primary data from target people in Bangalore city. Secondary data is collected through websites, journals, magazines, books, dissertation and database for theoretical support. Chi-square test was used in this study.

IV. Analysis and Discussion

Table 1
Impact of Functional responsibility on EDI-Company experience with customers

EDI-Business impact						
Functional responsibility	low	Medium	High	Total	P value	Significance
Sales	1	14			58.999**	.000
Distribution	25	7	8	40		
Purchase	16	12	14	42		
sales admin	20	14	11	45		
IT admin	15	13	10	38		
Logistics	20	0	0	20		
Total	97	60	43	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between functional responsibility and EDI business impact. According to this, functional responsibility is classified in to sales, distribution, purchase, sales administration, IT administration, and logistics. The result showed that, industry experience has a significant association with EDI links between customers and suppliers.

Table 2
Impact of Years of attachment-institution on EDI-Company experience with customers

EDI-Company experience with customers						
years of attachment-institution	low	Medium	High	Total	P value	Significance
less than 5	39	28	13	80	26.561**	.000
5-10	29	29	27	85		
more than 10	29	3	3	35		
Total	97	60	43	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between years of attachment-institution and EDI business impact. According to this, years of attachment-institution classified in to less than 5, 5-10, and more than 10. The result showed that, years of attachment institution has a significant association with EDI business impact.

Table 3
Impact of Industry experience on EDI-Company experience with customers

Industry experience	EDI-Company experience with customers				P value	Significance
	low	medium	High	Total		
less than 5	41	30	14	85	14.380**	.006
5-10	27	25	21	73		
more than 10	29	5	8	42		
Total	97	60	43	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between industry experience and EDI company experience with customers. According to this, industry experience is classified in to less than 5, 5-10, and more than 10.The result showed that, industry experience have a significant association with EDI company experience with customers.

Table 4
Impact of Company category on EDI-Company experience with customers

company category	EDI-Company experience with customers				P value	Significance
	low	Medium	High	Total		
a manufacturer of FMCG products	36	24	9	69	10.842*	.028
a distributor of FMCG products	27	25	21	73		
A manufacturer of raw materials	34	11	13	58		
Total	97	60	43	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between company category and EDI company experience with customers. The result showed that, company category has a significant association with EDI company experience with customers.

Table 5
Impact of Annual sales volume on EDI-Company experience with customers

Annual sales volume	EDI-Company experience with customers				P value	Significance
	low	Medium	High	Total		
below 25 lakhs	15	16	1	32	34.690**	.000
25-50 lakhs	26	14	13	53		
51-75 lakhs	17	17	16	50		
76-100 lakhs	13	12	10	35		
over 1 crore	26	1	3	30		
Total	97	60	43	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between annual sales volume and EDI company experience with customers. According to this, below 25 lakhs, 25-50 lakhs, 51-75 lakhs, 76-100 lakhs, and over one crore.The result showed that, annual sales volume has a significant association with EDI company experience with customers.

Table 6

Impact of Number of employees on EDI-Company experience with customers

EDI-Company experience with customers						
Number of employees	Low	Medium	High	Total	P value	Significance
25 employees or less	15	16	1	32	36.558**	.000
26-50 employees	23	10	10	43		
51-75 employees	20	21	19	60		
76-100 employees	10	10	10	30		
more than 100 employees	29	3	3	35		
Total	97	60	43	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between number of employees and EDI company experience with customers. According to this, number of employees is classified in to 25 employees or less, 26-50 employees, 51-75 employees, 76-100 employees, and more than 100 employees. The result showed that, industry experience has a significant association with EDI company experience with customers.

Table 7
Impact of Using EDI(customer or supplier) on EDI-Company experience with customers

EDI-Company experience with customers						
Using EDI(customer or supplier)	Low	Medium	High	Total	P value	Significance
yes	75	60	40	175	22.587**	.000
No	15	0	0	15		
Do not know	7	0	3	10		
Total	97	60	43	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between using EDI and EDI company experience with customers. According to this, using EDI is classified in to yes and no. The result showed that, using EDI has a significant association with EDI company experience with customers.

Table 8
Impact of frequency of using EDI or IT on EDI customers

EDI Customers						
Frequency of using EDI or IT	low	medium	High	Total	P value	Significance
routinely	15	10	0	25		
daily	3	9	3	15		
weekly	20	7	8	35	17.001**	.009
on an exception basis	59	34	32	125		
Total	97	60	43	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between frequency of using EDI or IT and EDI customers. . According to this, frequency of using EDI or IT is classified in to routinely, daily, weekly, and on an exception basis. The result showed that, frequency of using EDI or IT has a significant association with EDI customers.

Table 9
Impact of EDI experience on EDI-Company experience with customers

Company experience with customers						
EDI experience	Low	medium	High	Total	P value	Significance
1-5 years	40	29	14	83	21.685**	.000
6-10 years	28	28	24	80		
more than 10 years	29	3	5	37		
Total	97	60	43	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between EDI experience and EDI company experience with customers. According to this, EDI experience is classified in to 1-5, 6-10, and more than 10.The result showed that, EDI experience have a significant association with EDI company experience with customers.

Table 10
Impact of Functional responsibility on EDI-Company experience with suppliers

Company experience with suppliers						
Functional responsibility	low	Medium	High	Total	P value	Significance
sales	9	6	0	15	30.946**	.001
distribution	17	11	12	40		
purchase	16	12	14	42		
sales admin	21	13	11	45		
IT admin	15	13	10	38		
logistics	20	0	0	20		
Total	98	55	47	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between functional responsibility and EDI company experience with customers. According to this, functional responsibility is classified in to sales, distribution, purchase, sales administration, IT administration, and logistics. The result showed that, functional responsibility have a significant association with EDI company experience with customers.

Table 11
Impact of Years of attachment-institution on EDI-Company experience with suppliers

Company experience with suppliers						
years of attachment-institution	Low	Medium	High	Total	P value	Significance
less than 5	40	23	17	80	23.968**	.000
5-10	29	29	27	85		
more than 10	29	3	3	35		
Total	98	55	47	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between years of attachment and EDI company experience with customers. According to this, years of attachment with institution is classified in to less than 5, 5-10, and more than 10.The result showed that, industry experience have a significant association with EDI company experience with customers.

Table 12
Impact of Industry experience on EDI-Company experience with suppliers

Company experience with suppliers						
Industry experience	Low	medium	High	Total	P value	Significance
less than 5	42	25	18	85	12.045*	.017
5-10	27	25	21	73		
more than 10	29	5	8	42		
Total	98	55	47	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between industry experience and company experience with customers. According to this, industry experience is classified in to less than 5, 5-10, and more than 10.The result showed that, industry experience has a significant association with company experience with customers.

Table 13
Impact of Company category on EDI-Company experience with suppliers

Company experience with suppliers						
company category	Low	Medium	High	Total	P value	Significance
a manufacturer of FMCG products	37	19	13	69	7.820	.098
a distributor of FMCG products	27	25	21	73		
A manufacturer of raw materials	34	11	13	58		
Total	98	55	47	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between company category and company experience with customers. According to this, company category is classified in to a manufacturer of FMCG products, a distributor of FMCG products and a manufacturer of raw materials .The result showed that, company experience has no significant association with company experience with customers.

Table 14
Impact of Annual sales volume on EDI-Company experience with suppliers

Company experience with suppliers						
annual sales volume	low	Medium	High	Total	P value	Significance
below 25 lakhs	24	7	1	32	39.309**	.000
25-50 lakhs	18	18	17	53		
51-75 lakhs	17	17	16	50		
76-100 lakhs	13	12	10	35		
over 1 crore	26	1	3	30		
Total	98	55	47	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between annual sales volume on EDI and company experience with customers. According to this, below 25 lakhs, 25-50 lakhs, 51-75 lakhs, 76-100 lakhs, and over one crore .The result showed that, annual sales volume has a significant association with company experience with customers.

Table 15
Impact of Number of employees on EDI-Company experience with suppliers

Company experience with suppliers						
Number of employees	Low	Medium	High	Total	P value	Significance
25 employees or less	24	7	1	32	39.197**	.000
26-50 employees	15	14	14	43		
51-75 employees	20	21	19	60		
76-100 employees	10	10	10	30		
more than 100 employees	29	3	3	35		
Total	98	55	47	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between number of employees and company experience with customers. According to this, number of employees is classified in to 25 employees or less, 26-50 employees, 51-75 employees, 76-100 employees, and more than 100 employees. The result showed that, number of employees has a significant association with company experience with customers.

Table 16
Impact of Using EDI(customer or supplier) on EDI-Company experience with suppliers

Company experience with suppliers						
Using EDI(customer or supplier)	Low	Medium	High	Total	P value	Significance
yes	76	55	44	175	21.734**	.000
No	15	0	0	15		
Donot know	7	0	3	10		
Total	98	55	47	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between using EDI and company experience with customers. According to this, using EDI is classified in to yes and no. The result showed that, using EDI has a significant association with company experience with customers.

Table 17
Impact of Frequency of using EDI or IT on EDI-Company experience with suppliers

Company experience with suppliers						
Frequency of using EDI or IT	low	medium	High	Total	P value	Significance
Routinely	23	2	0	25	27.808**	.000
Daily	4	8	3	15		
Weekly	12	11	12	35		
on an exception basis	59	34	32	125		
Total	98	55	47	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between frequency of sing EDI or IT and company experience with suppliers. According to this, frequency of using EDI or IT is classified in to routinely, daily, weekly, and on an exception basis. The result showed that, frequency of using EDI or IT has a significant association with EDI links between customers and suppliers

Table 18
Impact of EDI Experience on Company experience with suppliers

EDI experience	low	medium	High	Total	P value	Significance
Company experience with suppliers						
1-5 years	41	24	18	83	19.601**	.001
6-10 years	28	28	24	80		
more than 10 years	29	3	5	37		
Total	98	55	47	200		

*P<.05, **P<.01

Chi square test was applied to find the association existing between EDI experience and EDI-company experience with suppliers. According to this, EDI experience is classified in to 1-5 years, -

Findings

Chi-square test was applied to find the association between company demographics and supply chain co-ordination.

Company demographics includes functional responsibility, years of attachment institution, industry experience, company category, annual sales volume, number of employees, company using EDI, frequency of using EDI, EDI experience. Supply chain co-ordination includes EDI-company experience with customers, and EDI company experience with suppliers. The result showed that company demographic factors are associated with supply chain co-ordination.

In case of EDI company experience with customers, company demographics factors like functional responsibility, years of attachment institution, industry experience, company category, annual sales volume, number of employees, company using EDI, frequency of using EDI, EDI experience are associated with priority for redesigning IT are associated with use of EDI company experience with customers.

In case of EDI company experience with suppliers, company demographics factors like functional responsibility, years of attachment institution, industry experience, annual sales volume, number of employees, company using EDI, frequency of using EDI, EDI experience are associated with priority for redesigning IT are associated with use of EDI company experience with suppliers.

10 years, and more than 10 years. The results showed that, EDI experience have a significant association with EDI-company experience with suppliers.

V. Conclusion

Based on the result obtained from this study, it is concluded that IT is affecting the supply chain coordination. Company demographic factors like functional responsibility, years of attachment institution, industry experience, company category, annual sales volume, number of employees, company using EDI, frequency of using EDI, EDI experience is affecting the supply chain coordination activities like company experience with customers and suppliers.

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OUTSTANDING DEBT, FREE TRADE ZONES, UNEMPLOYMENT AND THE REAL EXCHANGE RATE

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Abstract

The existing literature has analyzed the effects of different policies on the debt servicing problem of developing countries and these policies range from depreciation of the nominal exchange rate to creation of an export oriented trade regime. In a dynamic setting, this paper analyses the effects of yet another policy measure, namely creation of Free Trade Zones (FTZs), on the level of outstanding debt of an economy. Further, its effects on the real exchange rate, the level of unemployment and national income are also analyzed. Our analysis shows that in the presence of non-traded goods which shares resources for production with traded goods, it is quite likely that, in the long run, creation of a FTZ can lead to an increase in the level of outstanding debt thus defeating the very purpose for which it is created. Further, the short run conflict between increase in employment and national income ca also persist in the long run.

Key words : Free trade zones, special economic zones, trade liberalization, outstanding debt, debt-servicing problems.

I. Introduction

The literature on international debt has suggested a wide range of factors that can contribute to the debt servicing problems of developing countries. These factors can be sub-divided into internal and external categories. Internal causes include shocks to productive capacity, political crisis, social unrest, and other economic factors like macroeconomic mismanagement leading to excessive fiscal deficit or overvaluation of the exchange rate. External causes include price increases of essential imports like oil, price decreases of major exports, fall in export demand etc. Although the circumstances of the different developing economies and the origins of their repayment problems can be varied, the proximate cause for their repayment difficulties, i.e. inadequate foreign exchange inflows to fund foreign exchange outflows, has to be same for all.

The policy responses to the debt servicing problem are likely to be either those that reduce the demand for imports, or those that increase the supply of exports. In this respect, some of the policy measures that have been discussed in the literature are depreciation of the exchange rate, investment in export promotion activities, provision of necessary incentives for an outward oriented trade regime, export diversification, foreign direct investment etc. [(1),(2),(3),(4)] It is interesting to note that similar results should be obtained through policy measures leading to creation of Free Trade Zones (FTZs) since first, creation of FTZs implies trade diversification as they concentrate on goods in line with international demand rather than on traditional items; second, this can be interpreted as export promotion as new goods are promoted and the necessary incentives are in place; third, since the output from these are exported, such a policy has a pro-export bias; and fourth, units of production set up in FTZs are free of distortionary policies and hence can be interpreted as a step towards trade liberalization.

The literature on FTZs has, however, concentrated primarily on the second best properties of creation of such zones and hence has not examined its implications with respect to the balance of payments. This paper is an attempt in this direction. In a dynamic setting it is shown that creation of FTZs through tariff induced inflow of foreign capital has implications with respect to the level of outstanding debt, the level of unemployment, national income and the real exchange rate. The framework of analysis is that of an economy which has a traditional urban sector with Harris-Todaro unemployment and a rural sector. The latter produces a non-traded good whereas the output of the urban sector is freely traded with the rest of the world. The economy has a level of outstanding debt which it has to service and our objective in this paper is to examine the effects of creating a FTZ on the level of outstanding debt of such an economy.

The implications of either exogenous inflow of foreign capital or tariff induced inflow of the same on national income, unemployment, and the real exchange rate have been analyzed in Hazari, Jayasuriya and Sgro (1992) and Hazari and Sgro (1986, 1991, 1996). Similar results have also been obtained by Datta Chaudhuri and Adhikari (1993) in the context of tariff induced capital inflow to FTZs, but the effects on the real exchange rate were not explored. In this paper, in a dynamic context, the short run and the long run effects of creation of FTZs through tariff induced foreign capital inflow are derived with respect to the level of unemployment, national income, the real exchange rate and the level of outstanding debt. The structure of the static model is in essence similar to that of Datta Chaudhuri and Adhikari (1993) and Hazari and Sgro (1996), but goes beyond them by incorporating outstanding debt and its effects on the supply function of foreign capital. Accordingly, the paper is organised as follows. Section II develops the model and an analysis of the temporary equilibrium of the model is done in Section III and the static or short run implications of creating a FTZ are derived. The dynamics of the model are developed in Section IV and Section V deals with the long run effects of creating a FTZ. Section VI concludes the paper.

II. The Model

We consider a small open economy producing three goods u, r and z. Good z is produced in the FTZ and its entire output is exported. Goods u and r are the products of the urban and rural sectors respectively. Good z is produced with domestic labor, foreign capital and imported input M. Good u is produced with domestic labor, domestic capital and the imported input M. Good r is produced with domestic labor and domestic capital. Whereas labor is perfectly mobile across all these sectors, domestic capital is mobile only between sectors u and r. Foreign capital is used only in z. We assume that goods u and z are traded goods and r is the non-traded good. It is reasonable to assume that the rural sector's output is a non-traded good whereas, by definition, the output of the FTZ has to be exported; u on the other hand can be interpreted as the traditional exportable good.

Since the country is small, all international prices of the traded goods along with the price of the intermediate imported input are given to it and without loss of generality we normalize each of them equal to unity. Assuming constant returns to scale in production, we can then write the zero profit conditions as

$$1 = C_z (W, R^*, 1+T_z) \qquad [1]$$

$$1 = C_u (W, R, 1+T_u) \qquad [2]$$

$$P_r = C_r (W, R) \qquad [3]$$

where R and R^* are the rates of return to domestic and foreign capital respectively; W is the urban wage rate which is fixed at a higher level than W, the competitive wage rate prevailing in the rest of the economy; T_z and T_u are the given tariff rates on the imports of the intermediate good in the FTZ and the urban sector respectively and C_i is the unit cost function in sector i, (i = z, u, r). The nominal exchange rate is assumed to be fixed and set equal to unity.

We assume that the economy has a level of outstanding debt D and the supply of foreign capital is a function of D along with the rate of return R^*, i.e.

$$K^* = K^* (R^*, D), \text{with } \delta K^*/\delta R^* > 0, \delta K^*/\delta D < 0 \qquad [4]$$

This specification incorporates the idea of county rating. Cooper and Sachs (1985), Borenzstein (1990) and Serven and Solimano (1993) note that a highly indebted economy is likely to face credit constraints in the international market in that the supply of foreign capital is going to be negatively related to the level of outstanding debt even if the rates of return on investment are competitive.

With Harris-Todaro unemployment, intersectoral labour movement is governed by expected wage equalization and in equilibrium we have,

$$W = W . \{1/ (1+\lambda)\} \qquad [5]$$

where $\lambda = U / L_u$ and U and L_u denote the levels of urban unemployment and employment respectively.

Let C_{Ki}, C_{Li} and C_{Mi} be the unit requirements for capital, labour and the intermediate imported input in sector i (i = z, u, r). By the Shephard-Samuelson relations, these can be obtained by differentiating the unit cost functions with respect to the corresponding factor price.

Full employment of foreign capital implies that

$$C_{Kz}X_z = K^* (R^*, D) \qquad [6]$$

Where X_z is the output of the FTZ.

Let K and L be the country's endowments of capital and labour respectively. Equilibrium in the markets for domestic capital and labor requires that

$$C_{Ku}X_u + C_{Kr}X_r = \overline{K} \qquad [7]$$

$$C_{Lu}X_u(1+\lambda) + C_{Lr}X_r + C_{Lz}X_z = \overline{L} \qquad [8]$$

where X_u and X_r are the outputs of u and r respectively.

Equilibrium in the market for the non-traded requires that

$$D_r (P_r, 1, Y) = X_r \qquad [9]$$

where $D_r (.)$ is the usual demand function and Y is national income defined as

$$Y = WL + RK + T_z M_z + T_u M_u - rD \qquad [10]$$

R being the fixed rate of interest on outstanding debt.

The change in the level of outstanding debt, $\dot{D}$, will be given by

$$\dot{D} = M_u + M_z + R^* K^* + rD - X_z - E_u \qquad [11]$$

where E_u is the level of net exports from u. For the analysis to follow we will assume, for simplicity, that the change in the level of E_u due to parametric shifts is negligible.

In temporary equilibrium we assume that the economy has not yet reached a stationary level of debt and that the non-traded goods market does not clear instantaneously. The adjustment mechanism in the non-traded goods sector is given by the following equation :

$$\dot{P}_r = \Phi[D_r(P_r,1,Y)-X_r], \Phi'>0, \Phi(0)=0 \qquad [12]$$

Thus for any given values of P_r and D, the solution of the temporary equilibrium proceeds as follows. Equation (2) solves for R and (3) solves for W. Equation (1) then solves for R^* and the level of X_z can be inferred from (6). Equation (5) would solve for λ and Equations (7) and (8) yield X_r and X_u.

III. Analysis of Temporary Equilibrium

We relegate an analysis of the dynamics of the model to the next section and try to analyze the effects of creating an FTZ on the variables in temporary equilibrium. Given P_r, since W will be predetermined by (2) and (3), a reduction in T_z will lead to an increase in R^*. Given D, this would raise the supply of foreign capital K^* and the effects on the other variables would be the same as those derived in Datta Chaudhuri and Adhikari (1993). The results relevant for our analysis can be briefly stated as follows:

(a) $\delta W / \delta T_z = 0$; $\delta R^* / \delta T_z < 0$; $\delta R / \delta T_z = 0$;
(b) $\delta X_z / \delta T_z < 0$ if inputs are substitutes in production;
(c) $\delta X_u / \delta T_z < 0$ if $K_u (1+\lambda) / L_u > K_r / L_r$ and if $S_{KL}^Z > S_{ML}^Z > 0$ where S_{in}^j is the partial elasticity of substitution between the inputs i and n in the jth sector (i, n = K, L, M, j = r, u, z) and $K_u (1+\lambda) / L_u$ is the unemployment weighted factor intensity defined in Khan (1980);

(d) $\delta Y / \delta T_z < 0$ if $\left| e_{Mz}^{Tz} \right| > 1$ and if (b) and (c) hold where e_{Mz}^{Tz} is the elasticity of demand for imports of M with respect to T_z in sector z.
(e) It follows then that $\delta U / \delta T_z < 0$. That is, in the short run, there is a conflict between the twin objectives of increasing national income and employment.

Along with analyzing the short-term effects of a reduction in T_z on the variables of the system, it would be useful, for the analysis to come, to determine the effects of the other parameters in the short-run, namely P_r and D. In our paper, onwards, we will take as standing hypotheses the following :

$K_u (1+\lambda) / L_u > K_r / L_r$; $S_{in}^j > 0$; $S_{KL}^z > S_{ML}^z > 0$; and $\left| e_{Mz}^{Tz} \right| > 1$.

It can be checked that, given D, a change in P_r will have the following effects on the variables of the model :

$\delta R / \delta P_r = 0$; $\delta W / \delta P_r > 0$; $\delta R^* / \delta P_r < 0$; $\delta X_z / \delta P_r < 0$; $\delta U / \delta P_r < 0$; $\delta X_u / \delta P_r < 0$.

The effect on national income is given by

$$\delta Y / \delta P_r = L.(\delta W / \delta P_r) + \delta(T_z M_z + T_u M_u) / \delta P_r.$$

In the above expression the first term represents the change in wage income due to a change in P_r and the second term represents the change in tariff revenue. It may be checked that with a change in P_r, wage income moves in the same direction and tariff revenue also moves in the opposite direction. Thus, $\delta Y / \delta P_r < \text{ or } > 0$ depending on whether the tariff effect dominates the wage effect or vice versa.

The effect of a change in P_r on $\dot{D}$ can be derived from $\delta \dot{D} / \delta P_r = C_{Mu}(\delta X_u / \delta P_r) + \delta(K^* R^*) / \delta P_r - \delta(X_z - M_z) / \delta P_r - \delta E_u / \delta P_r$

We already have $\delta X_u / \delta P_r < 0$, $\delta R^* / \delta P_r < 0$, $\delta K^* / \delta P_r < 0$. Thus, if $\delta(X_z - M_z) / \delta P_r > 0$ then $\delta \dot{D} / \delta P_r < 0$ where $(X_z - M_z)$ can be interpreted as the value added in the production of X_z.

While concluding this section we can derive the effects of a change in the level of D on the variables of the model taking P_r as given. It may be checked that with a change in D, given P_r, all factor prices and hence techniques of production remain unchanged. We thus have $\delta X_z / \delta D < 0$, $\delta X_r / \delta D > 0$, $\delta X_u / \delta D < 0$ and $\delta U / \delta D < 0$.

The effect on national income is given by

$$\delta Y / \delta D = C_{Mu}T_u (\delta X_u / \delta D) + C_{Mz}T_z(\delta X_z /\delta D) - r < 0.$$

Again we get the result that a lower level of D is associated with higher national income and higher level of unemployment.

The effect of D on $\dot{P}_r$ is given by the following expression

$\delta \dot{P}_r / \delta D = \Phi' [\delta D_r / \delta Y . \delta Y / \delta D - \delta X_r / \delta D] < 0$

Stability of the Stationary State

The analysis of the temporary equilibrium assumed given values of P_r and D. The dynamic system consists of the differential equations given by equations ([2] and [13] :

$\dot{P}_r = \Phi[D_r(P_r,1,Y)-X_r], \Phi' > 0, \Phi(0) = 0$ [12]

$\dot{D} = [M_u + M_z + K^* R^* + rD - X_z - E_u]$ [13]

An equilibrium is characterized by (P_r^*, D^*) where $\dot{P}_r = \dot{D} = 0$. For an analysis of stability linearizing the differential equations around their stationary state values yields the matrix of first partials whose sign pattern determines the nature of stability of the system. These four partial derivatives are readily obtained as

$\delta \dot{P}_r / \delta P_r = \Phi' [\delta D_r / \delta P_r + \delta D_r / \delta Y . \delta Y / \delta P_r - \delta X_r / \delta P_r]$

$\delta \dot{P}_r / \delta D = \Phi' [\delta D_r / \delta Y . \delta Y / \delta D - \delta X_r / \delta D]$

$\delta \dot{D}/\delta P_r = [C_{Mu} \delta X_u / \delta P_r - \delta (X_z - M_z - K^* R^*)/\delta P_r]$

$\delta \dot{D} / \delta D = [C_{Mu} \delta X_u / \delta D - W \delta L_r / \delta D - T_z C_{Mz} \delta X_z / \delta D + r)]$ where

$\delta \dot{P}_r / \delta P_r < 0$ if the tariff effect dominates the wage effect ; > 0 otherwise.

$\delta \dot{P}_r / \delta D < 0$; $\delta \dot{D}/\delta P_r < 0$ if value added in z moves in the same direction with P_r ; > 0 otherwise. $\delta \dot{D}/ \delta D$?

Sufficient conditions for the first three first partials have been already obtained. In so far as the rate of change in the level of outstanding debt is concerned, the effect of an increase in D can be decomposed into two components: (a) the effect of a decrease in demand for foreign exchange due to the reduction in output of sector u and (b) the effect of an increase in demand for foreign exchange due to increase in net demand for foreign exchange by the FTZ and an increase in interest payments. The first effect will be stabilizing while the second effect will be destabilizing which gives us an interesting insight that creation of a FTZ through tariff induced capital inflow can generate destabilizing forces.

For stability, the matrix of first partials has to have Trace (Tr) negative and the Determinant (Det) positive. If the Determinant is negative along with Trace negative then there is a dominant negative real root and the equilibrium would be a saddle point equilibrium. For the analysis to follow, since we will assume stability (including saddle-point equilibrium), the different sign patterns that as feasible are as under:

Case I
$\delta \dot{P}_r / \delta P_r < 0$; $\delta \dot{P}_r / \delta D < 0$; $\delta \dot{D}/\delta P_r < 0$; $\delta \dot{D}/ \delta D < 0$ thus implying Tr < 0 and Det > 0 or < 0 ;

Case II
$\delta \dot{P}_r / \delta P_r < 0$; $\delta \dot{P}_r / \delta D < 0$; $\delta \dot{D}/\delta P_r < 0$; $\delta \dot{D}/ \delta D > 0$ and Tr < 0 and Det < 0 ;

Case III
$\delta \dot{P}_r / \delta P_r < 0$; $\delta \dot{P}_r / \delta D < 0$; $\delta \dot{D}/\delta P_r > 0$; $\delta \dot{D}/ \delta D < 0$ thus implying Tr < 0 and Det > 0 ;

Case IV
$\delta \dot{P}_r / \delta P_r < 0$; $\delta \dot{P}_r / \delta D < 0$; $\delta \dot{D}/\delta P_r > 0$; $\delta \dot{D}/ \delta D > 0$ and Tr < 0 and Det > 0 or < 0

Case V
$\delta \dot{P}_r / \delta P_r > 0$; $\delta \dot{P}_r / \delta D < 0$; $\delta \dot{D}/\delta P_r > 0$; $\delta \dot{D}/ \delta D < 0$ and Tr < 0 and Det > 0 or < 0

Case VI
$\delta \dot{P}_r / \delta P_r > 0$; $\delta \dot{P}_r / \delta D < 0$; $\delta \dot{D}/\delta P_r < 0$; $\delta \dot{D}/ \delta D < 0$ and Tr < 0 and Det < 0.

The Long Run Effects of Creating a FTZ

In this section, we shall examine the effects of a reduction in the tariff rate on the imported input for the FTZ on the steady state values of P_r, D, Y, the level of unemployment and the real exchange rate defined as $e^* = 1/P_r$ where the price of the traded goods and the nominal exchange rate has been set equal to unity.

Totally differentiating equations (12) and (13) at equilibrium characterized by $\dot{P}_r = \dot{D} = 0$ we obtain:

$$\begin{pmatrix} \delta D_r/\delta P_r + \delta D_r/\delta Y.\ \delta Y/\delta P_r\ -\ \delta X_r/\delta P_r & \delta D_r/\delta Y.\ \delta Y/\delta D\ -\ \delta X_r/\delta D \\ C_{Mu}\ \delta X_u/\delta P_r\ -\ \delta\ (\ X_z - M_z - K^*R^*)/\delta P_r & C_{Mu}\ \delta/\delta D - W\ \delta L_z/\delta D - T_z C_{Mz}\ \delta X_z/\delta D + r \end{pmatrix} \begin{pmatrix} dP_r^* \\ dD^* \end{pmatrix}$$

$$= \begin{pmatrix} \delta P_r/\delta T_z \\ \delta D/\delta T_z \end{pmatrix} dT_z$$

or,

$Ax = b$, where A is the matrix of first partials already obtained for the stability analysis. Also observe that

$b_1 \equiv \delta \dot{P}_r/\delta T_z = \delta D_r/\delta Y.\ \delta Y/\delta T_z - \delta X_r/\delta T_z < 0$ and

$b_2 \equiv \delta \dot{D}/\delta T_z = C_{Mu}\ \delta X_u/\delta T_z - \delta(\ X_z - M_z - K^*R^*)/\delta T_z$ where sign $\delta \dot{D}/\delta T_z =$ sign $\delta \dot{D}/\delta P_r$ which can be positive or negative. The long run effects of creating FTZs under alternative stability configurations are summarised in Table

Table I: The Long Run Effects of Creating FTZs under Alternative Stability Configurations

Sign of	Case i $b_2 < 0$	Case ii $b_2 < 0$	Case iii $b_2 > 0$	Case iv $b_2 > 0$	Case v [§] $b_2 > 0$	Case vi $b_2 < 0$
dP_r^*/dT_z	?	-	-	?	-/+	?
dD^*/dT_z	?	?	?	?	-/+	-

[§] depending upon Det being > or < 0.

Case iii is a situation where the system of differential equations is overall stable. Under the assumption that b_2 is positive i.e., increase in value added in z due to a reduction in T_z (thus implying an increase in net supply of exports) dominating the increase in net demand for imports coming from u, the real exchange rate would depreciate. The sign of dD^*/dT_z is indeterminate which implies that it could be negative which is counter-intuitive. Creation of a FTZ aimed at reduction in trade distortions and increase in exports should ideally reduce the level of outstanding debt. Instead, the opposite result is surprising and calls for explanation. And this is where the role of the non-traded good becomes important.

It can be checked that a reduction in T_z has the immediate effect of increasing excess demand for the non-traded good as expansion in the FTZ and sector u draws away labor from sector r reducing output and employment. On the other hand, under our standing hypotheses, since national income increases, demand for r increases from pure income effect. This increase in P_r, in the second round of effects, depresses the returns

to foreign capital thus straining the inflow of foreign capital and the expansionary effects of creating a FTZ. Further, given $b_2 > 0$, it also causes greater reduction in value added and hence in net supply of foreign exchange than demand for foreign exchange. On overall balance, because of stability, P_r^* would have to rise. However, D^* could increase.

Next, in the context of another overall equilibrium, consider an interesting possibility given in Case v where Tr < 0, Det > 0, $\delta P_r/\delta P_r > 0$ and where $b_2 > 0$. Here, creation of a FTZ increases both P_r^* and D^* and the real exchange rate falls. D^* would necessarily increase since in the final equilibrium P_r^* increases and thus the contractionary forces from the non-traded goods sector through labor reallocation would tend to overcompensate the expansionary forces of creating a FTZ. Indeed, this is the case where the non-traded goods sector is partially unstable and it is increase in D^* which stabilizes the economy as this neutralizes the contraction in the non-traded goods sector which was initiated by the expansion in the FTZ.. Thus an increase in outstanding debt due to a reduction in T_z should not be counter-intuitive as the latter can release destabilizing forces through the non-traded goods sector and it is increase in D^* which can stabilize. In fact, if the

system is overall stable, then we would have the desired results of creation of FTZ that both P_r^* and D^* will fall in the long run. The real exchange rate would consequently appreciate.

We can now derive the long run effects of creating FTZs on the level of unemployment and national income. It can be checked that

$$dU/dT_z = \delta U/\delta P_r^* \cdot dP_r^*/dT_z + \delta U/\delta D^* \cdot dD^*/dT_z + \delta U/\delta T_z$$

Since the signs of $\delta U/\delta P_r^*$, $\delta U/\delta D^*$ and $\delta U/\delta T_z$ are all negative, if $dP_r^*/dT_z > 0$ and if $dD^*/dT_z > 0$, then unemployment will increase in the long run. In so far as national income is concerned, in the temporary equilibrium if the tariff effect dominates the wage effect then national income will also increase in the long run and there could again be a conflict between the twin objectives of increase in employment and national income. An interested reader can derive the results for the other alternative cases presented above.

IV. Concluding Remarks

Our analysis reveals that creation of FTZs can generate destabilizing forces in the long run and as a consequence the level of outstanding debt would have to increase to bring about stability. Thus, in an economy with non-traded goods which shares resources with the traded goods sector, trade policy measures like creation of FTZ can, through resource allocation, thwart the original objective of creating such a zone. Indeed, it is an interesting insight that the effect of trade promotion taken in isolation may not have the desired results and consequent inter-sectoral resource reallocation that it causes has to be taken into cognizance. That is why, trade policy measures have to be coupled with internal economic measures in the non-traded goods sector such that they do not emerge as constraints at a later date. In terms of a stylized model, our analysis also gives conditions under which the level of outstanding debt can be reduced and efforts should be made such that these conditions are met in reality.

Notes

[1] See Borenszstein and Ghosh (1989).

[2] See Buffie (1989), Cardoso and Fishlow (1989), Celasum and Rodrik (1989), Collins and Park (1989), Dornbusch (1980), Morales and Sachs (1989), Nunnenkamp (1986), Park (1985), Woo and Nasution (1989).

[3] See Chang (1991), Congdon (1988), Woo and Nasution (1989).

[4] See Eaton and Taylor (1986), Kruger (1985), Kuczynski (1983), Woo and Nasution (1989).

[5] See Beladi and Marjit (1992a, 1992b), Datta Chaudhuri and Adhikari (1993), Young (1987), Young and Miyagiwa (1987). Chaudhuri (2000), Ohara (2000) and Yi (2000).

[6] See Harris and Todaro (1970).

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GROWTH AND PERFORMANCE OF SMALL SCALE INDUSTRIES IN INDIA

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Abstract

Since economic reforms in India the policy changes have been taking place at two different levels i.e., Global and National levels, which have implications for the functioning and performance of SSI's in India. In India SSI sector has been recognized as an engine of growth. SSI sector mainly being a labour intensive sector, not only generate greater employment but also enhances the per capita income, they also go a long way in checking rural-urban migration. Growth of SSI sector can be recognized by the increase or growth in production, employment and exports in the country. Further this sector has become a major means of rural development in India. The broad objective of this paper is to examine the growth and performance of the small scale industries in India. Accordingly in this paper an attempt is made to study the different aspects of small scale industries like the growth, production, employment, exports, investment etc during the pre and post globalization (economic reforms) in India. A comparative study is being made to find the changes before and after economic reforms.

Key Words: SSI, Economic Reforms, Employment, Labour and Per Capita Income

I. Introduction

In India since the beginning of 1990's policy changes have been taking place at two different levels i.e., Global and National levels, which have implications for the functioning and performance of SSI's in India. In India SSI sector has been recognized as an engine of growth. SSI sector mainly being a labour intensive sector, not only generate greater employment but also enhances the per capita income, they also go a long way in checking rural-urban migration. Growth of SSI sector can be recognized by the increase or growth in production, employment and exports in the country. Further this sector has become a major means of rural development in India.

The definition of small scale industries in India has undergone changes since Independence. With the passing of Micro, Small and Medium Enterprises Development (MSMED) Act in June 2006, various components of this SSI sector have been given a clear cut definition. A SSI (Manufacturing enterprise) is one where investment in plant and machinery should be between Rs.25 lakhs and Rs.5 crores.

Globalization refers to the free movement of factor inputs as well as output among countries. Globalization is defined as free cross- border flow of goods and services. Globalization has a descriptive component, as well as a perspective component and the latter is more important than the former (Bibek Debroy; 2002). Globalization of Indian economy led to the movement of capital, commonly known as Foreign Direct Investment (FDI) and free movements of goods etc, which has a vital impact on small scale industries in India. The process of globalization of Indian economy till 1990's was constrained by the barriers to trade and investment liberalization of trade, investment and financial flows initiated in the nineties has progressively lowered the barriers to competition and hastened the pace of globalization.

Globalization in India has allowed companies to increase their base of operations, expand their workforce with minimal investments and provide new services to a broad range of consumers. Thus the process of globalization in India has been an integral part of the recent economic progress made by India. We are also seeing the entry of foreign brands of consumer products. They pose a major challenge to similar Indian products, on account of their aggressive

marketing, not always backed by superior product quality. They capitalize on the widely held Indian belief that anything foreign is, ipso facto, superior to the home grown variety (N.Rangachary; 1996).

The important role being played by the SSI sector in Indian economy would be clear from the fact that this sector presently accounts for around 40 per cent of the gross turnover in manufacturing sector, 6.9 per cent of the net domestic product and 34 per cent of the country's exports (Industrial Economics, A.K.Sharma, pg.258, 2006).

In the backdrop of the above analysis, the broad objectives of this paper is to examine the growth and performance of the small scale industries in India. Accordingly in this paper an attempt is made to study the different aspects of small scale industries like the growth, production, employment, exports, investment etc during the pre and post globalization (economic reforms) in India, along with a brief review of literature to begin with.

II. Review of Literature

Boswell (1973), Schumacher (1973), Anderson (1982), Mead (1987), Boyer (1998), etc recognized the importance of SSI for economic development of less developed countries and revealed that it is essential for the less developed countries to develop industrial sector to achieve their economic goals of development. Bibek Debroy (2002), Dasgupta Anupam (2005), Basem M. Lozi (2006) Dr.Adyaprasad Panday (2007),

Rangachary.N (2008), in their studies found that since 1991, economic reforms (LPG) has led to competition, they suggested some majors to overcome the challenges and the problems of globalization (LPG) like developing core competencies among entrepreneur's, standardization, quality management and consciousness etc. Nagayya.D (2000), M. Jaya Krishna (2003), Nayak S.Nayantara (2008), highlighted that, in the era of liberation and globalization. Decentralization and inclusive growth backed-up by public private mix policy in SME sector bring in sustained development of SME's sector. Hence revealed the needs of the policy of protection by one of the aggressive promotional efforts to give the small scale sector.Krishna A Goyal (2006) observed that globalization in India had a favorable impact on the overall growth of the economy including SSI. Mulagund C.Laxman (2002) maintained that the SSI units should learn to think and act adaptively in the present complex and dynamic global competitive environment.

III. Analysis & Discussion

Growth of SSI Units

There has been a significant growth in small scale industry sector in terms of number of SSI units in India. The total number of SSI units has increased significantly, as in 1973-74 there were 0.42 millions of SSI units, which increased to 6.79 millions in 1990-91 and again increased to 13.37 millions of SSI units in 2007-08. Since less capital is required of establishing small enterprises they are growing faster.

Chart-1
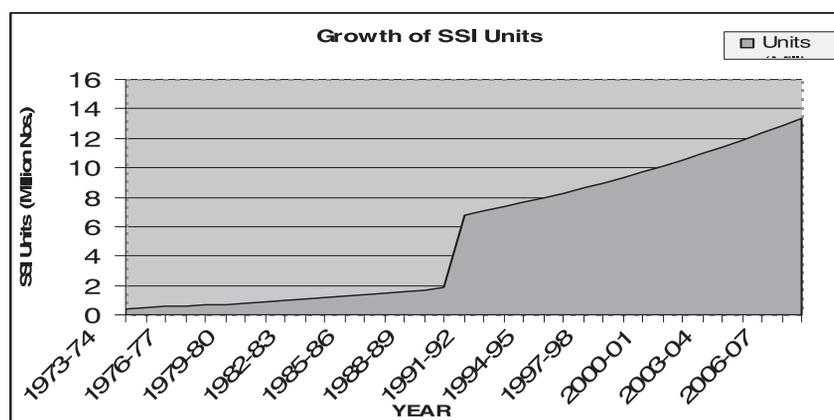
Source: Reserve Bank of India.

Chart-1 shows the trend line of growth of SSI units in India. We find the tremendous change that took place during 1989-90 to 1990-91, where in, during this period growth rate of SSI units was 73.07 percent, i.e. the numbers of SSI units were 1.82 millions in 1989-90, suddenly increased to 6.79 millions of SSI units in 1990-91. To justify, we can say that the expectations of entrepreneurs were boosted with the plan for introduction of proposals of New Economic Reforms (LPG), which led to increase in the establishment of SSI units in India.

Table 1-Growth of SSI units in India during Pre and Post Reform

Period	C.V	AAGR
Pre reform period (1973-74 to 1990-91)	105.6	12.62
Post reform period (1991-92 to 207-08)	20.06	4.06
Overall (1973-74 to 2007-08)	84.62	8.46

Source: Authors calculation based on data's of Reserve Bank of India.

Table 1 reveals the phenomenal variations in the growth of SSI units during Pre and Post-reforms period. During pre-reform i.e., 1973-74 to 1990-91 the annual average growth rate of SSI units was 12.62 percent with growth variation of 105.6 percent (Coefficient Variation).As against this the annual average growth rate of SSI units during post-reforms i.e. 1991-92 to 2007-08 was only 4.06 percent and the variation in the growth of SSI units was 20.06 percent which was very less compared to pre-reform period i.e., 1973-74 to 1990-91.

Compared to post-reform period there was less consistency in the growth of SSI units as the greater value of C.V (105%) during pre-reform period (20.06% C.V). As mentioned above the expectations from New Economic Reforms (LPG), were high by entrepreneurs side which made them to set-up more SSI units in India.

SSI Investment in India

Investment is the life blood for the establishment of SSI units in the country. In case of less developed countries there is vital need to increase the investment in industries for their economic development. In this regard 1991 policy of economic reforms opened the doors for private and foreign investors. Hence after 1991 there is significant increase in the total investment towards SSI's. In 1973-74 the total investment made in SSI sector was Rs.2296 crores, which increased to Rs. 93555 crores in 1990-91 and then increased to Rs.207307 during 2005-06.

Following chart no.2 shows the trend line of growth of SSI investment in India. There is significant growth in the SSI investment after 1991 reforms. During pre reforms period the SSI investment never crossed Rs.95,000 crores. However the process of economic reforms since 1991 increased the SSI investment level significantly.

Chart-2

Source: Reserve Bank of India and Annual Reports 2003-2004, 2005-06 Ministry of Small Scale Industries, and Handbook of Industrial policy and statistics 1999.

Table-2 reveals that there was less consistency in the growth of SSI investment during pre-reform compared to post reforms. The annual average growth rate of SSI investment during post-reforms (1991-92 to 2007-08) is 5.1 percent and the coefficient variation in the growth of SSI investment is 22.0 percent which is significantly more stable or less variable, compared to Pre-reform period (1973-74 to 1990-91) where annual average growth rate was 11.8 percent with growth variation of 179.5 percent (Coefficient Variation) which is very high. We can reveal that the vital reason for the less consistency or more variation in the growth of SSI investment level is the immediate rise in the investment level in 1989-90 and also most significantly increased expectations of FDI.

Table 2- SSI Investment in India during Pre and Post Reform

| Period	C.V	AGR
Pre reform period (1973-74 to 1990-91)	179.5	11.8
Post reform period (1991-92 to 2005-06)	22.0	5.1
Overall (1973-74 to 2007-08)	95.2	8.5

Source: Authors calculation based on data's of Reserve Bank of India and Annual Reports 2003-2004, 2005-06 Ministry of Small Scale Industries, and Handbook of Industrial policy and statistics 1999.

SSI Production

The following chart No.3 reveals growth in production level of SSI. There is definite increase in the production level of SSI. During 1973-74 the total production at current prices was Rs. 7200 crores which increased to Rs. 78802 crores in 1990-91 and in 2007-08 it went up to Rs. 695126 crores. During pre-reform (1973-74 to 1990-91) we find a very slow growth of SSI's production and in the year 1990-91, while entering the new era of reforms, the growth rate of production was negative to the tune of -40.44 %. The growth rate of SSI production was very significant during 1980-81. And during post-reforms we also find that the growth rate is somewhat consistent and moving in upward direction.

Chart-3
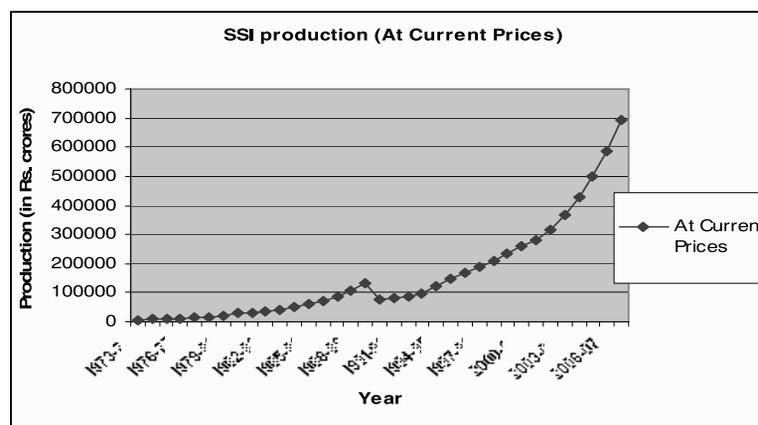
Source: Reserve Bank of India.

Table- 3 reveals that during post reform period variation in the growth rate of SSI production was 64.7 percent, which shows to some extent a uniform or consistent growth rate of SSI production as against pre reform period(81.30% C.V) which is less consistent compared to post reform period (64.7% C.V). Even though in the post reform period we find that there is less annual average growth in SSI production, but its growth is more consistent compared to pre-reform period.

Table-3: SSI Production (Rs. In Crores) at current prices

| Period	C.V	AGR
Pre reform period (1973-74 to 1990-91)	81.30	16.6
Post reform period (1991-92 to 2007-08)	64.7	13.8
Overall (1973-74 to 2007-08)	109.2	15.2

Source: Authors calculation based on data's of Reserve Bank of India

The table also reveals that average growth rate (AGR) during post reform period was 13.8 percent, which is less than 16.6 percent during pre-reforms period.

Employment

Small scale industries are labour intensive and have high potential for providing employment to human resources in India. By providing employment directly and indirectly it basically acts as a source of livelihood to people depending on them. The SSI sector generated employment to as many as 249 lakh people, of which around 33 lakhs (13%) employees are women. In terms of total workforce based on 2001 population census, SSI employment constitutes a share of 6.2 percent (Birendra Kumar Jha, 2008) of total employment.

Chart-4
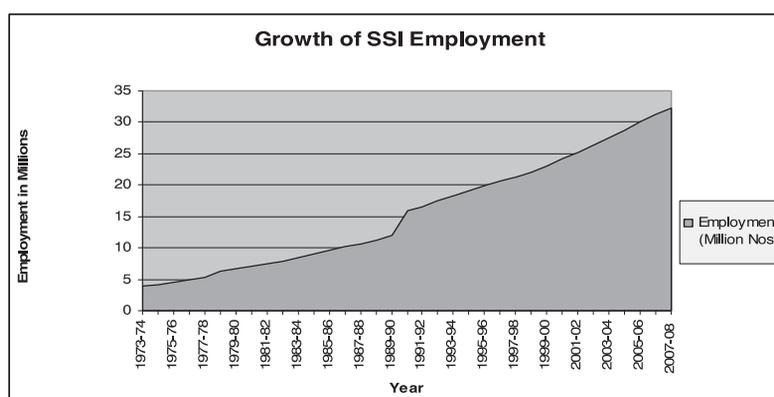
Source: Reserve Bank of India.

Chart 4, reveals the growth of employment level in SSI sector in India. In 1973-74, SSI sector provided employment to around 3.97 million people which increased to 15.83 million in 1990-91, 22.91 millions in 1999-2000 and 32.23 millions in 2007-08. Thus, employment in SSI sector has increased significantly. In 1990-91, a year prior to entering the new industrial policy and LPG era, there was sudden increase in the number of employment in the SSI sector i.e. in 1989-90; 11.96 million people were provided employment which increased to 15.83 millions in 1990-91. During post reforms the number of employees has still increased and it is double that of 1990-91, i.e. 32.23 millions in 2007-08.

Table 4- SSI Employment in India during Pre and Post Reform

| PERIOD	C.V	AGR
Pre reform period (1973-74 to 1990-91)	38.9	8.7
Post reform period (1991-92 to 2007-08)	20.9	4.3
Overall (1973-74 to 2007-08)	56.8	6.5

Source: Authors calculation based on data's of Reserve Bank of India

Similar to that of above discussed trends of production, employment etc. here we discuss the similar changes during pre and post reform era in relation to SSI employment. Table no.4 reveals that during pre reform period (1973-74 to 1990-91) employment level in SSI sector grew at the annual average growth rate of 8.7 percent, with 38.9 percent of coefficient variation in its growth. And in post reform period (1991-92 to 2007-08) with 20.9 percent of coefficient variation in the growth of employment level in SSI sector the annual average growth rate was 4.3 percent. There is less variation in the growth rate of employment in SSI during post reforms compared to pre reforms. Thus average annual growth rate in the total period considered for this study i.e. over all (1973-74 to 2007-08) is 6.5 percent.

Production per Employee in SSI Sector

We find in the following chart-5, fluctuating increase or growth in the capacity of production per employee in SSI at (1993-94 Prices) since 1970. In 1973-74, production per employee was Rs. 86000 which increased to 1, 59,000 in 1989-90. The increase in employment during 1990-91 was 32.35 percent but the growth in the production was negative i.e. -55.38 percent. Hence, production per employee decreased Rs. 54000 i.e. decreased around -66.04 percent in 1990-91.

Chart -5
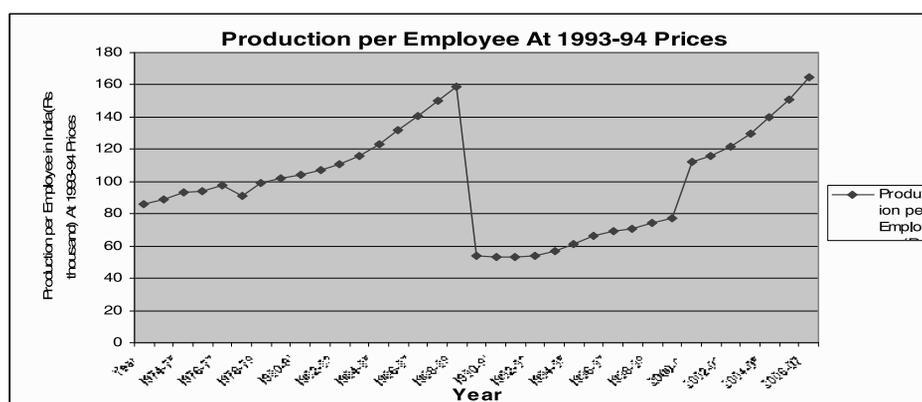
Source: Ministry of Micro, Small & Medium Enterprises, GOI

During pre-reforms, there were two negative points showing the fall in production per employee in SSI sector in India, i.e. in 1978-79 (-7.15 %) and 1990-91 (-66.04%). But during post reforms there is no such noticeable negative change in the production per employee. After 2001-02 there is a sizeable increase in the production capacity of employee.

Export Performance

SSI is generally described as the most dynamic and vibrant sector of the economy. At present it contributes around 35% of India's total exports. Since 1970 there is tremendous increase in the SSI exports i.e. in 1971-72 total SSI export was of Rs. 305.8 crores (15% of total exports) which increased to Rs. 9664.2 crores in 1990-91 (29.7% of total exports) and in 2005-06 it went up to Rs.150242.03 crores. The growth in SSI exports and its share in total exports are presented in the following table-5.

Table 5- Share of Small Scale Industries in Total exports from India

	(1971-1972 to 2005-2006)									(Rs. in Crore)
Year	Total Exports	% age Increase	Exports from SSI Sector	% age Increase	% age Share of SSI Sector	Year	Total Exports	% age Increase	Exports from SSI Sector	% age Increase	% age Share of SSI Sector
1972-73	1971	22.6	305.8	97.3	15.5	1991-92	44041.8	35.3	13883.5	43.7	31.5
1973-74	2523.4	28	393.2	28.6	15.6	1992-93	53350.5	21.1	17784.8	28.1	33.3
1974-75	3332.9	32.1	540.7	37.5	16.2	1993-94	69547	30.4	25307.1	42.3	36.4
1975-76	4042.3	21.3	532.1	(-) 1.6	13.2	1994-95	82674.1	18.9	29068	14.9	35.2
1976-77	5142.3	27.2	765.8	43.9	14.9	1995-96	106464.9	28.8	36470.2	25.5	34.3
1977-78	5484.3	6.7	844.8	10.3	15.4	1996-97	117525	10.4	39248.5	7.6	33.4
1978-79	5726.3	4.4	1069.2	26.6	18.7	1997-98	126286	7.5	44442.2	13.2	35.2
1979-80	6458.8	12.8	1226.3	14.7	19	1998-99	141603.5	12.1	48979.2	10.2	34.6
1980-81	6710.7	3.9	1643.2	34	24.5	1999-00	159561	12.68	54200.5	10.7	34
1981-82	7805.9	16.3	2070.6	26	26.5	2000-01	202509.7	26.92	69796.5	28.8	34.5
1982-83	8907.8	14.1	2045	(-) 1.2	23	2001-02	207746	2.59	71244	2.07	34.29
1983-84	9872.1	10.8	2164	5.8	21.9	2002-03	252789.97	21.68	86012.52	20.73	34.03
1984-85	11493.7	16.4	2540.8	17.4	22.1	2003-04	291582	15.35	97644	13.52	33.49
1985-86	10894.6	(-) 5.2	2769.1	9	25.4	2004-05	355339.52	27.94	124416.56	27.42	33.15
1986-87	12566.6	15.3	3643.7	31.6	29	2005-06	456417.88	21.6	150242.03	20.76	32.92
1987-88	15741.2	25.3	4373	20	27.8						
1988-89	20295.2	29	5489.6	25.5	27.1						
1989-90	27681.5	36.4	7625.7	38.9	27.5						
1990-91	32553.3	17.6	9664.2	26.7	29.7						
Source: Ministry of Commerce & Industry, Govt. of India.											

Following chart 6 and 7, we can find the growth in the SSI exports and the percentage share of SSI export in total exports. From 1970-71 to 1979-80 the share of SSI export was below 20percent in total exports of India. But after 1980-81 the percentage share of SSI export in total exports crossed 24 percent.
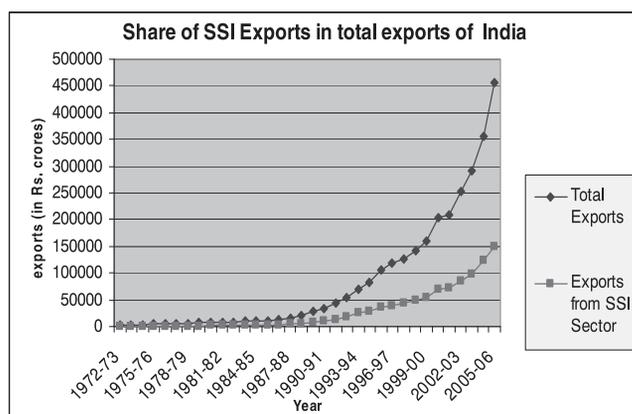
Chart-6

Chart-7

Share of SSI Exports in total exports of India

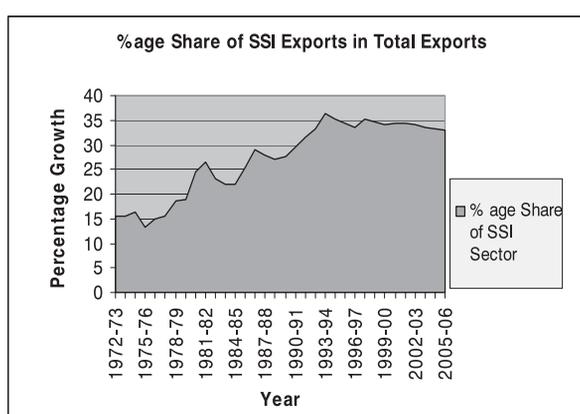%age Share of SSI Exports in Total Exports

Table-6 explains the export conditions during per and post reforms. While during pre reforms **(**1972-73 to 1990-91), the annual average growth rate of SSI exports was around 29.0 percent, with 98.2 percent of C.V which shows more variation or less homogeneity in the growth of SSI exports compared to pre-reform period (65.5% of C.V). In 1986-87 the contribution of SSI sector in total exports was maximum of 29 percent and this period is the vital phase which bought real change in SSI exports. Then after reforms (1991-92 to 2005-06) the percentage share of SSI export in total exports is above 30 percent. It is fluctuating in between 31 percent to 37 percent of total exports. The variation in the growth rate from 1973-2006 is 138.6 percent with annual average growth rate of 25.1 percent.

Table 6- Exports of SSI Sector in India

	C.V	AGR
Pre reform period (1972-73 to 1990-91)	98.2	29.0
Post reform period (1991-92 to 2005-06)	65.5	20.6
Overall	138.6	25.1

Source: Authors calculation based on data's of Ministry of Commerce & Industry, Govt. of India.

It is the abolition of license-quota permit system, amendment to MRTP etc integrated Indian market with the world market. Hence exports of SSI rose, but SSI export sector is not as much significantly growing as expected. It has been noticed that the six product groups viz, engineering goods, basic chemicals, leather and leather products, marine products, processed food and readymade garments contributed about 80% of the exports from SSI sector during the period from 1981-82 to 2000-01 (Neetu Bala, 2007).

Sickness of SSI

During 3rd Census of SSI RBI fixed criteria to measure the sickness of SSI unit. The unit that makes delay in repayment of loan over one year, decline in output over last three years etc is considered to be sick industry. During pre reform period there was 10.56 times increase in the number of sick SSI in the country. But after the liberalization period the number of sick SSI units has decreased to 0.68 times (C. Francis 1997). In 1981-82 there were 25342 sick SSI units which increased to 2,45,575 in 1990-91, 3,04,235 in 1999-2000. However from 2000-01 the number of sick units started declining i.e., there were 1,77,336 sick units in 2000-01, 85,187 in 2007-08. But in 2008-09, there was small increase in sick SSI units to 1,03,996.

Table-7 Sickness of SSI in India

Year	No. of Sick SSI's	Sick SSI's as % of total SSI's
Pre Reforms (1981-82 to 1990-91)		
1981-82	25342	2.6
1982-83	58551	5.5
1983-84	78363	6.7
1984-85	91450	7.3
1985-86	117783	8.7
1986-87	145776	9.9
1987-88	204259	12.9
1988-89	240573	14
1989-90	218828	12
1990-91	221478	11.4
Post Reforms (1991-92 to 2008-09)		
1991-92	245575	11.8
1992-93	238176	10.6
1993-94	256452	10.8
1994-95	268815	10.5
1995-96	262376	9.6
1996-97	235032	8.2
1997-98	221536	7.3
1998-99	306221	9.8
1999-00	304235	9.5
2000-01	249630	7.4
2001-02	177336	5.1
2002-03	167980	4.8
2003-04	138811	3.6
20004-5	138041	-
2005-06	126824	-
2006-07	114132	-
2007-08	85187	-
2008-09	103996	-

Source: Ministry of Commerce & Industry, Govt. of India.

Following chart no. 8 shows the trend line of the number of sick SSI units. The SSI which was not able to withstand competition has gradually become sick (Vidyasuresh and P.Seshidhar, 2007). Hence, from 1990-91 to 1999-2000 constantly the number of sick units increased.

Since 2000-01 the sickness in SSI sector is declining subsequently. It is due to the governmental policies and government measures for protection of interests of small enterprises the sickness in SSI sector is being declining. According to Economic survey 2004 and census of RBI revealed some of the important causes for SSI sickness like lack of demand, shortage of working capital, non availability of raw material, power shortage, labour problems and marketing problems (Vidya Suresh and P Sashidhar, 2007).

Chart-8
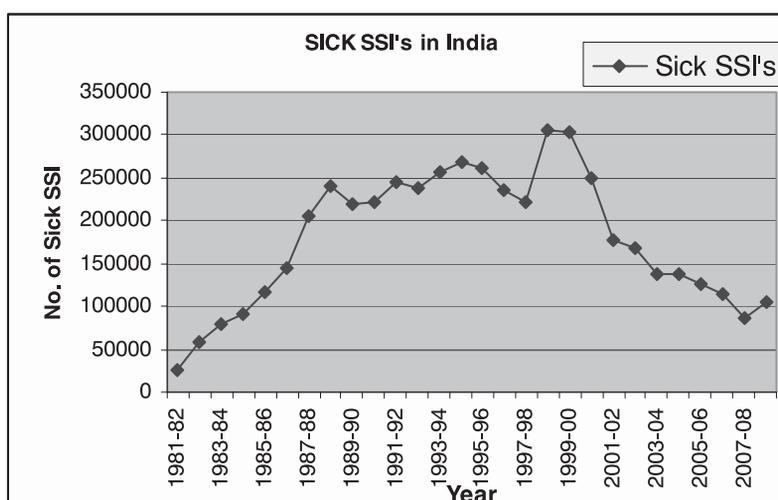
Government and Non Government organizations in SSI Development

The new developments since 1991 Industrial Policy brought magnificent change in the Indian SSI sector. This sector in early 1990's and even today to some extent is facing a tough challenge for its survival and growth, as LPG laid global competition in front of SSI's. There is urgent need to restructure and reformulate the very programmes and policies dealing with small scale industries to meet the emerging challenges of liberalization and globalization (Neetu Bala, 2007). Hence both Central and State Governments are taking measures to protect and develop small scale industries in India.

Government has reserved certain products for manufacture in small scale industry sector in areas where there is techno-economic justification for such an approach. Recognizing the importance of credit in SSI growth government has implemented and framed some programmes like Central Credit Guarantee Fund Scheme (CGFS), Prime Minister Employment Generation Programme (PMEGP) etc and even credit facility to small enterprises is provided through State Financial Corporations (SFC's). Not only financial assistance is provided by central government, but many other facilities like Entrepreneurship Development Programmes (EDP) training, Skill training to artisans etc are provided. National Small Industries Corporation (NSIC) and different industrial departments are providing raw materials required for SSI at lower prices etc. Thus government through its various agencies is undertaking measures to protect and develop small industries in India.

Central government organizations and departments, Ministry of Small Scale Industries through different agencies like National Small Industries Corporation (NSIC), Small Industries Development Organization (SIDO), Micro, Small, Medium Enterprises Development (MSME) department, Small Industries Development Bank of India (SIDBI), National Small Industries Development Corporation (NSIDC), and even through Khadi and Village Industries Corporation (KVIC) etc implementing governmental programmes and undertaking measures in developing SSI in India. Other than these, some organization and centers which are supported by central and state government like Entrepreneurship Development Institute of India(EDI), National Institute of small industry Extension Training (NISIET), National Institute of Entrepreneurship and small business

Development Institute(NIESBUD), Indian Institute of Entrepreneurship (IIE) etc, are also promoting and developing SSI's and also training new and old generation entrepreneurs.

IV. Findings

An attempt is made in this study to know the impact of economic reforms (LPG) on different aspects of SSI sector like its numbers of units, productivity, investment, employment, exports level and sickness etc. A comparative study is being made to find the changes before and after economic reforms. The following are some of the important findings of the study.

The proposals of new economic reforms during 1990-91 led to increase in the number of SSI units in India. There was sudden increase in the number of SSI units in 1990-91 (chart 1). During post reforms the variation in the growth rate of SSI units is very less (20.06%) compared pre-reform period (105.6%). This sudden growth may be due to the increased hope of new opportunities and success of new economic reforms in India. The proposal of disinvestment and relaxation of license system motivated the entrepreneurs in setting-up SSI's.

Similarly, the same proposals of disinvestment and relaxation of license raj system brought a dynamic change in investment and employment level of SSI sector during 1990-91. There was a significant increase in both these aspects. During post reforms period there is definite increase in the investment level (Chart 2), but to some extent the increase or growth is slow, as the annual average growth rate is 4.06% which is less, compared to pre-reform period (12.62%). And in case of employment the annual average growth rate is 4.3% in post reforms period, which is less compared to pre-reform period (8.7%).

No doubt, 1990-91 period gave a boost to increase in SSI units and investment. But in case of SSI production, there was a negative growth of-44.44%. But during post reforms there is positive growth since 1991-92 (chart 3). Decline in the production in 1990-91 led to decline in the capacity of production per employee in SSI sector in India (chart 5) i.e. there was negative growth (-66.04%) in the capacity of production per employee.

Annual average growth rate of SSI exports was 29.0% during pre –reforms, which was more compared to post reforms period (20.6%). The exports during post reforms period are above 31% of total exports every year, this is a significant contribution of SSI sector in India. SSI industries like engineering goods, basic chemicals, leather and leather products, marine products, processed food and readymade garments are contributing significantly in the exports from SSI sector. Hence SSI sector may also be called an export oriented sector in India.

As mentioned in table 7, the percentage and number of sick SSI units during pre reforms increased (1981-82 to 1990-91) and during post reforms there was severe sickness till 2000-01 in SSI sector. It is due to the governmental policies and measures for protection of interests of small enterprises, the sickness in SSI sector is being declining. And as revealed by RBI, important causes for SSI sickness are lack of demand, shortage of working capital, non availability of raw material, power shortage, labour problems and marketing problems etc.

Suggestions

To enable the SSI to face the global competition and challenges and enable them to overcome the problems they have to face, several measures should be taken in this regard.

Appropriate national policies and programmes to be formulated and implemented for building up the technological capacity, competitive strength, R&D in quality and production management of SSI etc. Along with this measure to provide financial or credit facilities (mainly working capital to needy and established SSI units) at low interest rate, management and product quality control skills of entrepreneurs to be developed through EDP and skill trainings, development of the existing SEZ's (Special Economic Zones) with well developed basic infrastructural facilities etc, are much needed measures to avoid sickness among SSI's and for upliftment of SSI sector.

V. Conclusion

In this LPG era, as a less capital intensive sector, there has been a significant growth in small scale industry sector in terms of number of SSI units, employment, production, investment, exports etc in India. SSI's often act as ancillary industries for the large scale industries providing them with raw materials, vital components and backward linkages. Indian Businessmen are to face new challenges in this globalization era, as we are seeing the entry of foreign brands into the country which poses a major challenge to the

similar Indian products. Hence, in this liberalization and globalization era, SSI's must be competitive for their survival and growth; otherwise they will perish resulting in colossal waste of scarce resources, unemployment and retard the process of industrialization.

Government and NGO's should take measures to recognize and overcome the domestic problems faced by SSI sector like that of working capital, non availability of raw material, power shortage, labour problems and marketing problems etc and should promote the SSI sector in developing themselves in innovation, research and development and enabling them to face foreign competition and hold dominant place in global market for their products.

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Title of the Book - Brick by Red Brick
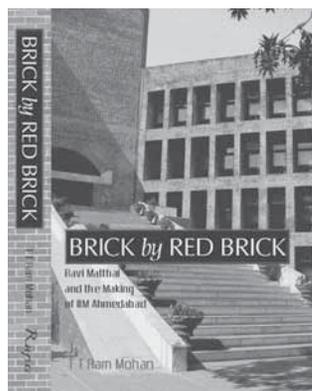
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The author takes us back to the initial years of independent India when the stalwarts like the then Prime Minister Jawaharlal Nehru were involved in nation-building. Simultaneously these great leaders also focused their attention on building great institutions in the areas of defence, steel, agriculture, public health, education etc. That such leaders thought of building IITs and IIMs in the fifties and sixties, when there was practically very little industrialization, speaks volumes of their vision and dedication.

The author highlights the immensely useful roles played by various governmental and non-governmental as well as Indian and foreign organizations that were involved in establishing the first two IIMs. Harvard Business School (HBS), Ford Foundation, University of California Los Angeles (UCLA), The Planning Commission of India and the ministry of Scientific Research & Cultural Affairs made tremendous contribution towards providing shape and vision to IIMA in its formative years. Vikram Sarabhai who had built several great institutions like ISRO, Physical Research Laboratory (PRL) , etc also played a major role as honorary director of IIMA during 1961 – 66 and this is well documented in the book.

The book attempts to go into details of the contribution made by Ravi Matthai, the first director of IIMA towards building this great institution. Interestingly, Ravi Matthai was the unanimous choice of very eminent set selectors even though he had no academic experience and would have to head a team of faculty members, many of whom had been trained in HBS. In fact the greatest challenge was that there was no pool of trained and experienced faculty members in India at that time. Ravi Matthai overcame this by visiting foreign countries regularly, spotting the talents there and convincing them to come to teach at IIMA. Ravi Matthai understood that the faculty played a key role in the development of the institute and extended a great deal of academic freedom to them. He also went on to create conditions that encouraged faculty to excel in their individual capacities as well as in their collective domain.

Even though the decentralized structure at IIMA was an import from the west, Ravi Matthai was able to adapt the same to the Indian needs and culture. The book establishes the fact that IIMA owes its present position as a leading national institute in the fields of teaching, consultancy, research and executive training to the genius of Ravi Matthai. He was far from being doctrinate in his approach to institution-building. Flexibility and improvisation were his watchwords. Rules and formal authority were deliberately underplayed and team work encouraged.This book must be read by all stake holders in the field of education and particularly by those involved in institution-building.

The book was reviewed by : Prof. S.Sankar, Dean, Management studies, Rajalakshmi Engineering College, Chennai, Tamilnadu, India. Email - sankaranagar@yahoo.co.in
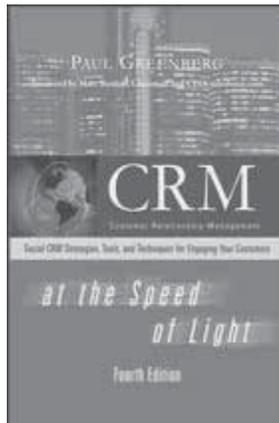
Book Title: CRM at the speed of light.

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The book on "CRM at the speed of light" written by the CRM guru Paul Green berg highlights about social CRM , strategies involved, tools and techniques for engaging your customers. The book CRM at the Speed of Light, Fourth Edition, reveals best practices for a successful Social CRM implementation. Greenberg explains how this new paradigm involves the customer in a synergetic discussion to provide mutually beneficial value in a trusted and transparent business environment.

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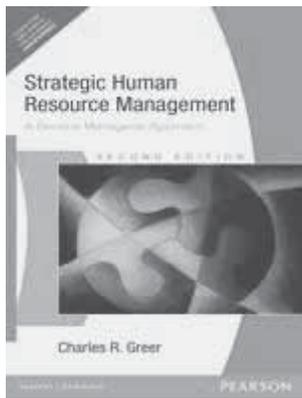
Book Title :   Strategic Human Resource Management: A General Managerial Approach.

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The book Strategic Human Resource Management: A General Managerial Approach refers to everything about the relationship between strategy and human resource management. It is useful for academicians, industry experts and management students undoubtedly. The book also has discussed several case studies of strategic Human resources management in industries.

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