

# GLOBAL JOURNAL

## OF MANAGEMENT & BUSINESS RESEARCH

DISCOVERING THOUGHTS AND INVENTING FUTURE

### HIGHLIGHTS

Incorporating Meditation

Fertilizer Sectors Pulls

Financial Analysis

Using Black's Model

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# Incorporating Meditation as a Professional Skill within the Business Curriculum: Theory, Attitudes and Application

By Stephen H. Miller, Dr. Sharon Green

*California State University, East Bay*

**Abstract** - The author suggests that a number of barriers currently exist to the wider inclusion of meditation in the business curriculum: (1) the lingering association that many people have with meditation as a strictly spiritual practice, rather than as a tool that anyone can learn and apply; (2) the concern that students will think meditation is inappropriate as part of professional training and unrelated to their future managerial role; and (3) the lack of knowledge among business professors about how to teach meditation and integrate its practice into the topics of their course. The paper addresses these concerns by reviewing the current research and popular use of meditation; presents the results our research into student attitudes towards seven statements about the value of meditation in the business curriculum; and discusses the practical issues such as when and how to introduce meditation, approaches to integrating meditation with other course topics, and effective responses to typical student concerns.

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# Incorporating Meditation as a Professional Skill within the Business Curriculum: Theory, Attitudes and Application

Stephen H. Miller<sup>α</sup>, Dr. Sharon Green<sup>σ</sup>

**Abstract** - The author suggests that a number of barriers currently exist to the wider inclusion of meditation in the business curriculum: (1) the lingering association that many people have with meditation as a strictly spiritual practice, rather than as a tool that anyone can learn and apply; (2) the concern that students will think meditation is inappropriate as part of professional training and unrelated to their future managerial role; and (3) the lack of knowledge among business professors about how to teach meditation and integrate its practice into the topics of their course. The paper addresses these concerns by reviewing the current research and popular use of meditation; presents the results our research into student attitudes towards seven statements about the value of meditation in the business curriculum; and discusses the practical issues such as when and how to introduce meditation, approaches to integrating meditation with other course topics, and effective responses to typical student concerns.

## I. INTRODUCTION AND CURRENT RESEARCH

If one word can capture the essence of the current business environment it is “change”. Increasingly over the past several decades business professionals have been challenged to “thrive on chaos” (Peters, 1988), survive in a world of “permanent white water” (Vaill, 1996), and prepare for a “dynamic, turbulent, and even chaotic world” (Whetten & Cameron, 2005, p. 491). As noted futurist Alvin Toffler observed about the demands of the twenty-first century, “Change is not merely necessary to life -- IT IS LIFE” (Toffler, 1984).

The capacities that must be developed if business professionals are to achieve and maintain success in this ever-changing environment include the ability to make sense of uncertainty and ambiguity (Weik, 1995), the capacity to respond creatively to new and complex situations (DeGraff & Lawrence, 2002), and the skill to cope effectively with on-going stress (Goleman, 1998). Although increasingly complex decision tools and ever faster information exchange methods provide the opportunity for business to harness the energy of change, it is the decision maker who must comprehend, imagine, and respond in a composed fashion to the demands of the moment; innovative business systems can facilitate, but they can't

decide, create or calm. A major challenge facing educators at this juncture in history is to educate the whole student, not only with facts and procedures from the outside, but with the intra-personal capacities to thrive in the face of uncertainty and change (Goleman, 1998). One psychological/emotional tool to support effective behavior is readily available, has been successfully tested, and is increasingly applied in business settings, but is still met with some suspicion and doubt. The tool is meditation, and although recent research and practice has confirmed its usefulness in the business setting, some of the greatest resistance to inclusion of meditation in the business curriculum comes from the instructors who would present the knowledge and help develop the skills associated with this technique. We would like to address the source of this resistance by first addressing the widely shared assumption of many western academics that meditation is a form of spiritual practice and therefore has no place in a secular educational setting. Second, we will respond to the concern shared by many educators that business students will not be receptive to learning and practicing meditation in a business course by presenting the survey responses from several hundred undergraduate and graduate business students. Finally, we will share our classroom experience with successfully integrating meditation into a graduate-level business course.

Meditation is an ancient practice, and for most of its history has been associated with spirituality and enlightenment rather than the training of business students. Although awareness in the United States of Eastern meditation techniques can be traced to the Transcendentalists in the 19th Century, the more recent surge in the popularity of meditation has been attributed to the Beatles' trip to India in the 1970s to learn Transcendental Meditation (TM) from Maharishi Mahesh Yogi. TM is a technique that invokes mental concentration and physical relaxation through repetition of a phrase or syllable. Maharishi Mahesh Yogi has been one of the most vocal advocates of teaching meditation to managers and doing research on its effectiveness. A representative research report of TM's effectiveness is reported by Schmidt-Wilk (2003) for a Swedish top management team involved in Total Quality Management and by Schmidt-Wilk, Heaton and Steingard (2000) for its impact on spirituality in

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management. Since the research was supported by the Maharishi University of Management, its objectivity is suspect. Von Bergen et al. (1997) reports that the research on meditation's efficacy is poorly designed and lacks experimental controls. Research done outside the influence of the Maharishi University, using well designed controls, has strongly supported TM's beneficial effects for coping with the stressful demands of modern life. For example, a randomized placebo-controlled study of 84 patients with coronary artery disease (Paul-Labrador, et al. 2006) found the participants in the meditation group had significantly lower blood pressure and improved measures of insulin resistance as well as "cardiac autonomic nervous system tone" compared with a control group receiving health education. As reported by Nagourney (2006), results of a study presented at a conference of the Society for Neuroscience clearly showed meditation helped subjects feel more focused, energetic, and alert than did naps, exercise or caffeine. Reed (2006) reported on research done at Harvard Medical School which showed that meditation helps prevent the rate of cortical thinning with age. Older meditators had active cortical regions that were comparable to those of younger non-meditators. Other empirical studies in reputable journals have shown meditation's benefits on productivity (Frew, 1974), time management (Harung, 1998), and leadership skills (Harung, et al. 1995, and McCollum, 1999).

In addition to the growing literature in scholarly journals, the role of meditation in improving management and worker skills has appeared in recent popular magazines such as "Time" (Miranda, 2006, and Cullen, 2006), "Business Week" (Der Hovanesian, 2003), "Workforce" (Luthar, 1999) and "Fitness Magazine" (Bodian, 2005). Concerning meditation's direct benefits to business, an article by Der Hovanesian (2003) in "Business Week" presented findings from the National Institute of Health and the "Mind/Body Medical Institute" at Harvard University. Results showed that meditation enhanced the qualities companies need most from their workers: increased brainwave activity, enhanced intuition, better concentration, and the alleviation of stress from work.

Given recent reports of the positive cognitive, physical and emotional benefits from regular meditation, why is not widely included in the curriculum of business schools? It may be surprising to learn that such respected business schools as Columbia, Stanford, University of Notre Dame, and the London School of Business have included meditation as part of their curriculum. It is curious, therefore, that meditation is not taught more frequently as a skill in business school programs. It is proposed that the following barriers currently exist to the wider inclusion of meditation in the business curriculum: (1) the lingering association that many people have with meditation as a strictly spiritual

practice, rather than as a tool that anyone can learn and apply; (2) the concern that students will think meditation is inappropriate as part of professional training and unrelated to their future managerial role; and (3) the lack of knowledge among business professors about how to teach meditation and integrate its practice into the topics of their course. The first concern with attitudes towards meditation as spiritual practice rather than a personal skill useful to business has been addressed by the preceding review of current research and popular use of meditation. We will now turn our attention to addressing the second barrier.

## II. RESULTS OF RESEARCH ON STUDENT ATTITUDES TOWARD MEDITATION

In an attempt to address the second barrier to the inclusion of meditation in the business curriculum, student resistance, the authors collected survey data over the course of a year from business students in order to evaluate their attitudes toward seven statements about the value of meditation in the business curriculum. A questionnaire was developed, pre-tested, revised and distributed to students enrolled in four courses in the Business Administration program. Both graduate and upper-division undergraduate courses that were required in the curriculum were sampled. In this manner, students who had selected various options within the program (such as Finance, Accounting, Marketing, Quantitative Analysis, Human Resources) were represented. Courses given during the Summer Quarter of 2005 were selected as well as those given during the Fall Quarter of 2006. In this manner, a representative sample of Business Administration students was achieved. Virtually all students in these courses filled out the questionnaire since it was done during class session and students' names were not required. A total useable sample of 209 questionnaires were collected and used for analyses.

Summary results for each of the seven statements are presented, with the sample size and percentage of responses (in parenthesis) shown next to each response. In the sample of 209 students, 52.9% were males, 56.7% were MBA candidates, 49.8% were full-time employed and 25.3% were part-time employed.

1. Meditation can be useful to reduce stress.  
Strongly Agree: 70 (33.7); Agree: 119 (56.7); Disagree: 17 (8.2); Strongly Disagree: 3 (1.4)
2. I would enjoy learning how to meditate.  
Strongly Agree: 54 (26.0); Agree: 119 (56.7); Disagree: 32 (15.4); Strongly Disagree: 4 (1.9)
3. Meditation has no use in the business context.  
Strongly Agree: 23 (11.0); Agree: 60 (28.4); Disagree: 95 (45.7); Strongly Disagree: 31 (14.9)
4. Most people in the work environment are open to meditation.



- Strongly Agree: 2 (1.0); Agree: 80 (38.0); Disagree: 118 (56.7); Strongly Disagree: 9 (4.3)
5. Meditation can help achieve success in the business environment.  
Strongly Agree: 33 (15.9); Agree: 143 (68.2); Disagree: 31 (14.9); Strongly Disagree: 2 (1.0)
6. Meditation is of no value in a Business Administration program.  
Strongly Agree: 17 (8.2); Agree: 65 (30.8); Disagree: 92 (44.2); Strongly Disagree: 35 (16.8)
7. I support meditation offered as part of a course within the Business Administration curriculum.  
Strongly Agree: 42 (20.2); Agree: 115 (54.8); Disagree: 42 (20.2); Strongly Disagree: 10 (4.8)

Summary results for the demographic questions (see Appendix ) indicated that for those who did not practice some form of meditation (Question 8, "No"), 37.5% (N=77) said they would be interested in learning to meditate (Question 11, "Yes"). Of the 132 respondents (62.5%) who had tried some type of meditation ("yes" on Question 8), 10.6% did it daily, 13.3% weekly, and 76% occasionally (Question 9). Reasons for practicing meditation (Question 10) were: stress reduction (61.3%); because it was trendy (4.1%); for religious reasons (21.3%), and other (13.3%). Of the 152 students who practiced some form of stress management (Question 13), multiple methods were sometimes checked. Eighteen indicated "yoga/pilates", none for "Tai Chi", 10 for "aerobics/kickboxing", 70 for "music", 28 for "prayer" and 43 chose "other" (listing mainly such things as swimming, jogging, walking, and exercising). For Question 14, of the 170 benefits of the stress management method identified, only 12 were for "improved grades", 32 for "increase in focus/concentration", 109 for "peace of mind/relaxation", 11 for "increased self-awareness", and 6 for "other".

The overall response from students indicates receptivity to learning meditation and having it included in a business curriculum. The results showed that over 90% agreed or strongly agreed that meditation is useful for reducing stress (Question 1) and that over 82% were personally open to learning how to meditate (Question 2). Eighty-four percent expressed a favorable response to the statement that meditation can help achieve success in the business environment (Question 5) and 75% support the offering of meditation as part of a course within the Business Administration curriculum (Question 7). Given these overwhelmingly favorable attitudes towards meditation as a positive benefit, it is interesting to note that only 60.6% of students felt that meditation is useful in the business context (Question 3) and only 39% felt that most people in the work environment are open to meditation (Question 4). The implications of these results will be addressed in the Discussion section.

### III. ANALYSES OF MODERATING VARIABLES

Chi-square analyses of the moderating effects of the six variables of age (under 30 versus 30 and older), work status (full-time versus part-time/unemployed), gender, ethnic background (Caucasian versus Asian from the Indian subcontinent versus Asian non-Indian subcontinent), management experience (some versus none), and graduate versus undergraduate were completed for a subset of the questions. For "age", the only difference (Chi-square = 12.4, df=1) was on question 3 (there were no significant differences on questions 1, 2, 5, and 7) where 79.3% of those under 30 years old either "Strongly agreed" or "Agreed" that meditation has no use in the business context compared with 56.6% for those 30 years or older. There were no significant differences for the variable "work status" on the selected questions 1, 3 and 4. For the variable "gender", there were no significant differences on questions 1, 2, 3, 5 and 7. It appears that the attitudes towards meditation shown in the results for these five questions are quite consistent regardless of sexual orientation. Considering the variable of "ethnicity", Question 3 had 79.3% Caucasian agreeing or strongly agreeing with it compared to 56.1% for Indian Asian and 56.9% for non-Indian Asians (Chi-square= 5.9, df=2). For question 7, students from the Indian subcontinent overwhelming (90.2%) agreed or strongly agreed that meditation should be offered as part of a course within the Business Administration program, compared with 70.4% Caucasian and 73.2% Asian non-Indian subcontinent (Chi-square=5.7, df=2). There were no significant differences in ethnicity for questions 2 (enjoy learning how to meditate) or 5 (meditation can help achieve success in business). When analyses were done on questions 1,2,3,5 and 7 on those who had some work experience versus those with none, only question 2 was significant (chi-square=5.5, df=1). Those with work experience were more in agreement (89.5%) than those without (77.2%) in their enjoyment in learning how to meditate. For graduate versus undergraduate, significant differences were found on questions 1, 3, and 7 but not question 2 or 5. Eighty-four percent of the undergraduates strongly agreed or agreed that meditation can be useful to reduce stress compared with 93.8% of the graduate students (Chi-square=4.7, df=1). For question 3, 45.5% of the undergraduates strongly agreed or agreed that meditation has no use in the business context compared with 70.8% of the graduate students (Chi-square=13.3, df=1). But when meditation was in the academic context (question 7), over 81 percent of the graduate students supported it being offered compared with 66.4% of the undergraduate students (Chi-square=5.8, df=1).

## IV. SUGGESTIONS FOR TEACHING MEDITATION

The third barrier, the lack of knowledge among business professors about how to teach meditation in a MBA program, will now be addressed. In keeping with our previous discussion of the importance of overcoming students' perception that the business environment is not compatible with meditation, the introduction of meditation should be preceded by the presentation and discussion of its usefulness to managers. Research previously mentioned should be presented as well as examples from companies who do value "alternative" management practices. For example, the Der Hovanesian (2003) mentions that technology organizations such as Apple Computer, Yahoo! and Google were investing in on-site masseuses to relieve work stress. Similarly, Time Warner incorporated meditation classes to help employees deal with the new 12 hour days required after their company down-sizing. A discussion of Daniel Goleman's (1998) work on Emotional Intelligence is an excellent frame in which to introduce the usefulness of meditation. He presents evidence showing that 85 to 90 percent of success at work depends on one's "emotional intelligence", defined as personal and social competence. "Personal Competence" includes self-awareness (knowing one's internal states), self-regulation (managing these internal states) and motivation (emotional tendencies that help one reach goals). "Social Competence" has two dimensions, empathy (awareness of other's feelings) and social skills (adeptness at getting desirable responses from others). Meditation's relevancy to enhancing the personal competency component is most apparent from previous research, thus solidifying its value as a useful skill to learn in the Business Administration curriculum. Another outstanding source is the text Creativity in Business (1986). It has been used for over 20 years at Stanford's Graduate School of Business and provides a wealth of examples from leading business people on how they used meditation and other exercises to increase their company's and their own success.

After developing this context, the point to be emphasized is that meditation has practical value to both workers and managers apart from any religious or spiritual implications. It is important to introduce this content at the beginning of the course, incorporate its value into the course topic, and assign homework that includes students' reactions to the practice of meditation. Making it a course requirement to practice meditation daily will overcome the students' resistance to it as they progress throughout the course. Written papers should be required each week explaining the problems and concerns experienced during that week's practice. The professor should constantly give positive feedback to students' efforts, emphasizing that the key

is not to judge how well they are meditating since this will interfere with its learning. Most MBA students have a very high level of achievement and are hard on themselves if "success" is not soon achieved by quantitative measurement. The "just do it and see what happens" approach peeks their natural curiosity, and the positive feedback given for their efforts will eventually lead to positive results. It usually takes about 4-5 weeks of practice before meditation becomes a regular part of their day and the benefits become apparent. By the end of the course, almost all students will have experienced the beneficial effects of daily meditation.

The actual instructions for how to meditate are quite basic. Whetten and Cameron (2005) discuss the conditions under which various "deep-relaxation strategies" are used in their chapter on "Managing personal stress", with transcendental meditation being one. It's important to frequently remind students to have NO expectations about what is SUPPOSE to happen when they meditate. Tell students to sit up comfortably in their chairs, with their heads balanced in the center of their body and their hands in their laps. They should slowly close their eyes and listen to the following instructions (there also are numerous CDs on "Guided Meditation"):

Rotate your feet left and right (pause for 10-15 seconds before reading each following instruction); now shake your legs back and forth; now shrug your shoulders up and down. Next rotate your head clockwise; then in a counter-clockwise direction. This should be done each time before you meditate to check your body for tension. Breathe deeply through your nose and out your mouth four or five times. Now pay attention to your breath as it goes in and out your chest. Concentrate on your breathing. As thoughts come to your mind, notice them and then return your focus to your breath. If you prefer, concentrate on thinking of a pleasant, soothing sound such as "om", "oh", or "ah". Don't force anything; just relax, watch your breath or focus on your sound. As thoughts appear, think of them as clouds floating by and return your concentration to your breath or sound. Don't worry about how well you are doing or SHOULD be doing it. Have no expectations about anything. Just stay in the present time and focus on your breath or sound."

This suggested meditation scenario should last about 20 minutes; one can increase the length of the pauses to achieve this. After 20 minutes have passed, tell the students to slowly open their eyes, breathe deeply a few times, and then stretch their arms over their heads. Sit quietly for about 30 seconds before telling them to resume their normal activity. Questions should be encouraged and discussed. At the beginning of each subsequent class, it is important to ask for problems raised by their practice since this will reinforce the importance of this class requirement.



Some common complaints from students about meditation, and appropriate responses to them, follow: (1) "I don't have time to meditate." Twenty minutes a day can always be found and this is excellent practice for managing your time. You can always set the alarm clock 20 minutes earlier in the morning. (2) "I do it at night and fall asleep." Meditation should not be done within a few hours after a heavy meal and never before retiring for the night. (3) "I can't find a place alone to meditate." If you take public transportation to or from work, do it then. After all, people will think you're napping, if they think about you at all! Or you can meditate in your car during lunch hour. One student solved this problem by going to the restroom and quietly sitting there for 20 minutes. (4) "My spouse thinks it's a stupid thing to have to do for a business course". Remember, it's a course requirement, you're in a class to learn new skills, and besides, do you always allow your spouse's opinion to determine your life? (This question should not be asked sarcastically nor rhetorically!) (5) "My mind wanders to other things besides my breath (or word mantra)". This is to be expected. Practice noticing when you are no longer concentrating on your breath or word and return your attention to it. The point is NOT to avoid thoughts but merely to become aware of your thought processes. (6) "How will I know when 20 minutes are up?" Either look at your watch or set a timer (all cell phones have them). After a few weeks of practice, the number of times you look at your watch will dramatically lessen and this is a mark of progress. (7) "Can I play music while I meditate?" If it's quiet background music and this facilitates your concentration, this is fine. If you discover that you are listening to the music rather than focusing on your breath, then don't use it. (8) "Last week I only remembered to meditate twice; what am I doing wrong?" Being aware of your failure to meditate daily is important. Analyze the reasons and situations for your omissions and take steps to avoid them in the future. Remember, behavioral change takes time and effort. Just keep working on it and see what happens.

These recommendations are based on over 40 years of combined teaching experience in a variety of business courses with a highly diverse student population. Only once did a student refuse to practice meditation due to "religious reasons". Considering that many thousands of students have been taught to meditate, this is a remarkable testament to students' willingness to learn this important new skill for increasing management effectiveness.

## V. DISCUSSION

The results of the attitude survey presented above have some interesting implications for how business faculty should approach meditation instruction. On the one hand, the majority of students are very open

to learning meditation and seeing it included in a business course. They believe that meditation is useful for reducing stress and contributing to overall success in business. However, students also seem to share the concern of many of their instructors that meditation may not have a place in the business environment: it's useful, but perhaps not acceptable. This indicates the need to "reframe" meditation as a skill that is practical, and one that is being currently applied by successful business professionals in recognized organizational settings. The concept of "framing" (Fairhurst & Sarr, 1996) suggests that how an idea is presented ("the frame") plays a significant role in whether people will accept or reject an idea. This implies that, for students, the social meaning of meditation within that context of business is dependent upon how it is introduced by the instructor. Common framing techniques include the use of metaphors and stories to give meaning to a concept. Sharing one's own experiences with meditation as well as presenting the experiences of well-known business executives such as Richard Branson (Branson, 2006) and management consultants such as Stephen Covey (Covey, 2004) can provide a legitimate context for regular meditation practice. Presenting information about the use of meditation by such well-known organizations as AOL and Raytheon (Conlin, 2004) can firmly establish meditation as a respectable and acceptable business tool.

The research results also speak to the importance of instilling in students a sense of competency and efficacy in meditation's personal usefulness. Our experience in teaching meditation is that following several weeks of practice students begin to experience the beneficial outcomes of mental clarity, insight, creative thinking, and reduced stress. Again referring to the social psychological literature, in order to create a lasting change in attitudes and behavior it is not enough to simply present information; increasing knowledge does little to change behavior. Changes in behavior follow changes in attitude about the behavior and perceived ability to engage in the behavior (Ajzen, 1988). The most effective way to influence attitudes and perceived competency is to guide someone through the target behavior and support their repeated practice. As perceived competency increases, intention to engage in the behavior increases as well. This strongly suggests that the best way to introduce meditation into the skill-set of future business professionals is to include the practice of meditation in the classroom setting, and allow time for students to process their experiences and reinforce their learning.

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## APPENDIX

### *Meditation & Management Questionnaire*

The purpose of this survey is to understand students' attitudes toward meditation as it relates to stress and time management at school, work, and in personal life. The information collected from this survey will remain completely confidential. Thank you in advance for your assistance!

Please indicate to what degree you agree with the following statements.

1. Meditation can be useful to reduce stress.
 

<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree
<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
2. I would enjoy learning how to meditate.
 

<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree
<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
3. Meditation has no use in the business context.
 

<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree
<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
4. Most people in the work environment are open to meditation.
 

<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree
<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
5. Meditation can help achieve success in the business environment.
 

<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree
<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree

6. Meditation is of no value in a Business Administration program.

- ☐ Strongly Agree ☐ Agree  
☐ Disagree ☐ Strongly Disagree

7. I support meditation offered as part of a course within the Business Administration curriculum.

- ☐ Strongly Agree ☐ Agree  
☐ Disagree ☐ Strongly Disagree

8. Have you ever tried some form of meditation?

- ☐ Yes (Go to Q. 9)  
☐ No (Go to Q.11)

9. How often to you currently practice meditation?

- ☐ Daily  
☐ Weekly  
☐ Occasionally

10. Why do you practice meditation?

- ☐ Stress relief  
☐ Trendy / Fun  
☐ Religious reasons  
☐ Other (please specify) \_\_\_\_\_

11. If your answer to Q. 8 was "No", would you like to know how to practice some form of meditation?

- ☐ Yes ☐ No

12. Do you practice other forms of stress management methods?

- ☐ Yes (Go to Q. 13)  
☐ No (Go to Q. 15)

13. What other form of stress management method do you currently use? Check the best one that applies.

- ☐ Yoga / Pilates  
☐ Tai Chi  
☐ Aerobics / Kickboxing  
☐ Music  
☐ Prayer  
☐ Other (please specify)

14. What is the primary benefit of the stress management method that you identified above? Check the best one that applies.

- ☐ Improved grades  
☐ Increased focus / concentration  
☐ Peace of mind / relaxation  
☐ Increased self-awareness  
☐ Other (please specify)

Please answer the following autobiographical questions

15. Gender:

- ☐ Male ☐ Female

16. Age group:

- ☐ 23 & under ☐ 24 – 29 ☐ 30 – 35  
☐ 36 – 45 ☐ 46 & over

17. Ethnic group:

- ☐ African American ☐ Caucasian ☐ Hispanic  
☐ Middle Eastern ☐ Native Americ ☐ Asian  
 (Indian subcontinent) ☐ Asian Non-Indian  
 subcontinent ☐ Other

18. Degree status:

- ☐ Undergraduate Business Administration  
☐ Graduate Business Administration  
☐ Other

19. Degree option (please specify): \_\_\_\_\_

E.g. Accounting, Finance, HR, Marketing, Operations, etc.

20. Student status:

- ☐ Part-time ☐ Full-time

21. Work status:

- ☐ Unemployed  
☐ Part-time employed  
☐ Full-time employed

22. If applicable, how many years of management experience do you have:

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# The Air Transport Industry in the 21st Century: A Synthesis of the Views of Aviation Experts in the UK

By N. P. Mootien

*University of Technology, Mauritius.*

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**Keywords** : Consolidation, Mergers and Take-Overs, Cost Control, Oil Peaks, Environment and Sustainability.

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*U. K Experts' Views – the Scoping Study*

The purpose of the interviews was to determine various opinions and ideas from academics who have had exposure to and experience of the aviation sector. All the interviewees selected are qualified in their respective fields and have many years experience working and/or teaching air transport at tertiary level. Below is a table with their respective academic and professional qualifications and experience.

## 1. BACKGROUND OF INTERVIEWEES AND THEIR EXPERIENCE IN AVIATION

Interviewees' Names		Academic/ Professional Qualifications	Experience	Current Role
Nigel Dennis	A	1st degree in Maths; MSc in Transport Planning & Engineering; PhD in Transport & Highway Engineering	Attachment with BA and various transport groups in research projects; worked for BAA & DHL at Zaventem hub; Worked on air deregulation & liberalization and airline economics & forecasts.	Head of Air Transport Department, University of Westminster, London
Romano Pagliari	B	1 <sup>st</sup> degree in Economic History; Masters & PhD in Air Transport	Has been an academic at Cranfield University for past 40 years. Area of specialization is airport management and has knowledge of airline development.	

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Keith Mason	C	Degree in Business Management; PhD in air Transport liberalisation	11 years of lectureship & research at Cranfield University.	Senior lecturer, Department of Air Transport, Cranfield University
Peter Morell	D	Economist by training at Cambridge; Masters in Air Transport at MIT; PhD in Air Transport	Worked for AEA on various research projects for 6 years; Aviation consultancy for small island economies; joined Cranfield in 1991	Researcher and consultant Department of Air Transport, Cranfield University
Brian Graham	E	BA Hons. & PhD in Geography, Queens University, Belfast	Principal Lecturer, Ulster Polytechnic; Reader in Geography and later Professor of Human Geography, Ulster University	Emeritus professor in Human Geography, Ulster University
Lucy Budd	F	BA in Geography; MSc & PhD in Air Transport, Loughborough University	Lectureship in Transport Studies	Lecturer in Transport Studies, Loughborough University
David Gillingwater	G	MSc (Econ); PhD in Transport policy	Lectureship at Loughborough since 1984; Leader of the Transport Studies Group, 1999-2002	Senior lecturer in Transport Studies, Loughborough University
Callum Thomas	H	Doctorate in Biology with specialization in Bird Biology	15 years experience at Manchester Airport where he established its Bird Control and Environment Department. Has experience in the management of aircraft noise.	Professor of Sustainable Aviation, Centre for Air Transport and Environment, Manchester Metropolitan University.
Andy Jefferson	I	BSc, PhD in Air Transport, Cranfield University	Worked for 8 years at KLM, UK and Buzz airlines.	Head of Environment, British Airport Authority, Stansted Airport.

Hugh Sommerville	J	BSc Chemistry, PhD in Microbiology	Taught at the University of California Los Angeles and Berkeley. Head of Environmental Affairs, Shell. He was Chairman of the Environmental Groups of both IATA and AEA.	Visiting Professor
Anne Graham	K	BSc, MSc, PhD	Air transport consultant, researcher in transport and tourism for 20 years; member of the editorial board of Journal of Airport Management and the Air Transport Research Society.	Senior Lecturer, Department of Property and Construction, University of Westminster

Although very varied opinions were expressed during these interviews regarding certain topics around the main issues of deregulation and liberalization, there were also many areas of convergence where the interviewees concur that all the various components that make the future of aviation are the same. In other words the experts' concerns and preoccupations are basically the same. It will be seen in the analysis that many issues such as oil prices, environment and energy keep recurring.

*a) The aviation sector currently and in the future*

On this question, the interviewees were all in agreement to say that the current situation is not what was expected by the proponents of deregulation and that things are now beyond control of the various stakeholders. In other words, they no longer have full control of the situation as far as future directions of the industry are concerned. For the developed countries and the airline operators of these countries the developments were much below expectations. Most of these airlines have gone through turmoil and have had to either close down, restructure or went in to merger with the mega carriers (Kenya Airways/KLM, Air Senegal/Royal Air Maroc, Air Afrique). As for the future more problems will occur as we move further in to this millennium of major uncertainties coupled with the current economic downturn. Although the future is not easy to predict, most economists tend to agree that things for the international economy will improve but no one knows when. The same could be said of the aviation industry as it is linked to the various sectors of the local economy (micro economy), the major area of the broader economic sector (macro economy) and what will be the outcome of globalisation (international economy).

Those developments have certainly had their effects on several factors. From a global perspective, the various social, economic and environmental indicators have shown that the future of the industry may

be more uncertain than before. The industry and the economies of countries are interdependent. Society still has high expectations from the industry: better and cheaper services. The environment is a big issue and will be a serious concern in the decades to come. Global warming will be for the years to come a serious threat to the future of the planet. Emissions from the industry, every one agrees, have a very big impact on global warming.

## II. WIDER CONTEXT: SOCIAL, ECONOMIC AND ENVIRONMENTAL FACTORS

We are in a middle of an economic downturn. For Interviewee H "this time the credit crunch is bigger but it was bound to happen sooner or later. But the critical issues are climate change, peak oil and environmental constraints at airports". Therefore, more funds are now needed to finance aircraft operations. This obviously puts more pressure on governments and airline operators alike. For countries where air transport is still very much a luxury and that rely more on the performance of a single flag carrier, things do not look good now and will be even more difficult in the future. For the developed countries also, the airline industry will have to face serious difficulties especially with the fluctuating prices of jet fuel. This recession is worse than the one of the 1930s says interviewee D who has done some major works on energy and fuel hedging for the AEA (Association of European Airlines).

There is consensus that because of the unpredicted nature of the recession, most of the economic forecasts have been nullified. It is probably more difficult now to make predictions with any level of accuracy. But there is also consensus that the international economy will improve although nobody knows when and how fast this will happen. But it is reasonable to concur with Interviewee A who is of the opinion that "Like for other sectors of the economy,

recessions are always bad for air transport as well. The recession will hopefully take at least two years to clear up and we can foresee some more consolidation among the major carriers. We are in the middle of the worst economic downturn of the century and things will be different but are difficult to predict with more accuracy."

Interviewee D seems to agree while stating that "I am sure that there will be a recovery but it depends when: whether it will be an L shape, a V shape or a W shape..." He went on to say that the good news for the moment is that oil prices have gone down although it "will continue to be volatile. Alternative sources of energy will certainly reduce the demand for crude oil; there will still be heavy reliance on crude oil for electricity supplies."

From the above it is obvious that the economic crisis of the moment is a major concern for the world in general and for the industry in particular. There is a fear that the recession would last more than it should. Most of the forecasts have been proved wrong and we are in the middle of economic uncertainties, the prices of oil and the general economic trends in most countries have given rise to some form of pessimism among major players. From the opinions of the interviewees, although the recession could be worse for the aviation sector than other sectors but the aviation sector always picks up faster. Social, economic and environmental factors will continue to weigh very heavily in the equation of supply and demand. The decrease in demand will certainly have rippling effects on world society at large. Consumer behaviour will change as the crisis continues to bite in.

*a) Demand and Usage Trends: Current, Short Term, Long term and Market Niches*

For air transport like many other products it is demand that pulls in supply whereas for other category of products the reverse could be true especially in captive or traditional market or some inelastic products, namely necessities. If there is an acute drop in demand, operators will react by reducing supply with a view to increase load factor. This consequence will occur in the short term. In the long term, the situation may stabilize as the world economic situation improves. Finding new market niches will help keep operators in business while waiting for better days. Such niches will hopefully fill in the seats to make up for lost revenue.

Because of the high elasticity of demand for air travel, demand usually drops in times of recession. This is normally the case for luxury products and for many markets air travel is very much a luxury. As interviewee C confirms "people have cut down on holiday travel and those who are still travelling for holidays are concentrating more on short haul travel. Companies are also restricting travel to cut down on their costs. But a significant proportion will continue to travel on

business." Interviewee A however is of the opinion that "people will continue to travel for obvious reasons. In particular those in the higher income groups will continue to travel. The US domestic market will continue to increase. Fare reductions and the new entrants will not make a big difference." He also shares the same view with Interviewee C that the short haul market will expand. The trends in demand will continue in Europe, he says as 55% of the well-off people account for 85% of air trips. According to him, London airports will handle more passengers although the UK market in general is getting saturated.

There is a touch of pessimism for the developing countries especially those of the African continent. Most of the interviewees are quite convinced that again Africa will lag behind for the obvious reasons of political instability and lack of good governance. Interviewee A supports this view when he says that "a few decades ago, Africa accounted for 5% of world travel but now it is down to 2%". According to Interviewee A, South America is now growing rapidly but will have some difficulties to sustain their operations because of increasing costs. "Asia", he says, "will steam ahead, but there will eventually be some failures. Mauritius falls between Africa and Asia and it will attract more inbound tourism. However, air transport will obviously be a serious casualty of this recession."

Interviewee D who says he is an optimist by nature opines that the economy will pick up. The good news according to him is that "normally the airline industry picks up faster than the other sectors. There is still a huge appetite for travel. Now the Chinese will travel more and more like the Japanese used to do. Demand will not disappear. I know a lot of people are talking about video conferencing and WebEx but this will not cause a remarkable reduction in demand. We do have a good future for the industry. People will continue to go on holidays." Interviewee E seems to be more cautious. "We have to be careful with short and long term trends", he says, "we are going through a recession and the industry will suffer. In the long term [though], the industry will see some growth."

Interviewee G has a totally different take on the present situation and demand in the future. He finds the industry to be 'in a mess' and a state of chaos. According to him the current economic crisis is not responsible for this state but rather it only acted as a catalyst to speed up the process. The economic crisis, he says, cannot be used as a justification for the mess they are now in. He quite candidly points out that "the airlines have, for many years, believed naïvely that the good times will continue. They have been living on borrowed times. They thought that things will continue as before." He adds that "the airline business has very high peaks and very low troughs. At the moment", he says, "nobody has the right answer or the right business model. We'll continue to see continuous deaths of major

airlines and we'll also see some exciting births. There will be some big winners and some big losers." However, according to Interviewee I, although we are going through a very difficult phase, the industry will pick up. Historically, he says, the airline industry has a cycle of 'boom to bust' but this time the credit crunch is biting harder. Most interviewees are rather optimistic that things will improve.

The economic forces of supply and demand will be at the centre of future developments. Supply will be determined by demand but in the short run, operators will have to take piece-meal decisions to increase load factor and break even. In the long run there will be positive changes if the world economy improves. Niche markets will be one of the options for operators to neutralize the negative economic impacts of the industry. Air line operators will have to review their *modus operandi* and change their mind set as the situation now is more or less irreversible unless new management principles are adopted.

*b) Supply: Airlinef actors - Low cost carriers/consolidation/acquisition*

Supply will be determined by several factors: the ability to sustain airline operations with regard to finance and the prices of oil among other things. Most of the interviewers tend to think that the industry is now facing the greatest challenge of its existence: Recession of the world economy, fall in demand, lack of finance for investment and pressure from all sectors – political, social, and environmental. The industry will have to fight many battles on several fronts if it wants to survive. One of these battles will be to regain the faith of bankers.

Finance is an important requirement for the simple reason that the industry is investment-intensive and the credit crunch is imposing serious limitations to credit availability as Interviewee D points out: "Banks are now reluctant to lend and they are also lending at premium rates." Moreover, the industry is very vulnerable to oil price fluctuations. These are most of the points brought up by the interviewees in general. According to Interviewee B, we will see more liberalization over time, but it will come gradually. More consolidation of airlines and the growing presence of low cost airlines will increase supply. He is also of the opinion that the "there will be more open sky agreements and relaxation of rules. Low cost airlines will be more prominent on both the long, short haul and domestic markets. As the economic situation improves, there will be more privatization of the larger airlines. Large alliances will be formed offering more seats, hence better load factors." However, we should here mention an opposite view expressed by Interviewee F who is convinced that "in the UK market for instance, there will be two megacarriers with fragmentation and consolidation. You will continue to have several market segments: the very rich looking for the best products

with all the frills and the bottom edge of the market looking for the cheapest flights."

Interviewee A holds basically the same view when he says that "there will obviously be mergers and acquisitions. Lufthansa is already busy acquiring some small airlines. There will be more of the likes of Air France/KLM/Alitalia. Charles de Gaulle, Orly, Amsterdam and Frankfurt Airports will continue to be the major hubs. Flag carriers will continue to be a major issue especially for the smaller countries with small airlines. But for survival, small flag carriers will be leagued in to larger groups."

Because of the increase in low cost airlines, the flag carriers and other regulated airlines will have to review their methods of operations. Airlines will have to adopt a consolidation approach and pull resources together. Large airlines will have to merge with other smaller airlines and some of the large ones will acquire the small ones with the blessing of their respective governments. The big European airports will continue to develop as hubs and smaller airports will be the spokes.

### III. THE DIFFERENCE BETWEEN THE AVIATION SECTOR AND THE OTHER SECTORS OF THE ECONOMY AND BETWEEN THE AVIATION SECTOR AND THE OTHER SECTORS OF THE TRANSPORT INDUSTRY

This question is set because there is in fact a tendency by all stakeholders to treat air transport separately from the other sectors of the transport industry. There is the feeling that it is a class of its own and most interviewees seem to share this view. Within the economy as well, the air transport industry seems at times to be treated as a separate identity compared to other stakeholder. There are obviously several reasons to explain this: Is the air transport a major player within the economy? Is the air transport sector to be treated as a major partner in the economy or be lumped together with all other service providers etc? It is along these lines that we wanted to prompt some reactions from our interviewees. Practically all of them agree that the industry should be perceived as a separate entity within the transport sector in general but should be an integrated part of the economy in general.

*a) Competition within the transport sector*

One of the important points that came out is that the US, in spite of their free economy, their antitrust laws, still treats air transport differently from the other sectors of the transport industry. On this issue, Interviewee B says that "the US has its own rules. They have a different way of doing things. If jobs are at risk, they will intervene." But he personally does not think that should be treated differently from the other sectors of the industry. Even for the economy in general, "we should leave air transport to the forces of the market.

Airlines should be allowed to fail for others to come in. Too many airlines have been pulled out of bankruptcy by their respective governments. Airlines continue to be symbols of national pride and they need to be assisted in order not to collapse". (Interviewee B). For Interviewee H, air transport is high speed transport over long distance. According to him "aviation has created a global society and the industries created a global economy. Aviation has created patterns of trade which never existed before".

Another point that recurs is that the airline seat is a perishable product but then all transport seats, road or rail or shipping, are as perishable as the airline seat. It is hard to understand why the perishability issue seems to have more attention in the air transport sector than other sectors. Load factor requirement could be part of the explanation for this emphasis on air seats perishability. In the course of these interviews it becomes clearer that most experts, in fact, do treat the sector differently. However, Interviewee C is of the opinion that "there are more similarities than differences. Its mass transportation, subject to the same major constraints of the economy, fuel prices, supply and demand etc. There has been a commoditization of the product like any other." Interviewee D also supports this argument. According to him, "it certainly has a lot in common with surface transport. But it is a little more flexible compared to rail and road which have fixed tracks. Regarding the economy in general, we are at an advantage. If things don't work, we can always take our business elsewhere but if it's a factory, it's not easy to do that". For Interviewee the main similarity is the congestion problems. But he thinks that "changes are easier to make in air transport than in the other sectors of the economy. But we suffer the same problem with the credit crunch... on the recovery side, the low cost airlines are quicker to react and to adjust to new prices."

Most of the interviewees think that the industry should be treated the same as other sectors of the economy and of the transport sector in general. Air transport like any other product should be left to the market forces. Competition will be beneficial for one and all although profitability could be marginal. The perishability of airline seats makes it difficult for airlines to work on high profit mark ups. There are in fact more similarities than differences. Its mass transportation, subject to the same economic conditions; There has been, as Interviewee C puts it, a 'commoditisation of the product'. According to interviewee K, it is the regulation that used to make it different but now it is like any other product. She also went on to say that it is probably the economic recession that still makes the product a luxurious one. Leisure travel, she says, still a luxury for many people.

*b) Is air transport still a luxury, only for the elite?*

Most of the interviewees also argue that the product is by nature different. For Interviewee J the

major difference is that it is a global industry and cannot be treated as a local industry within the economy. There is consensus that it is still a luxury product designed and destined for the elite. Interviewee B asserts that because of the luxurious nature of the product, "it is still only accessible to the rich. Rail and road transport is subsidized but aviation is not." But this is debatable, because it is no secret that many airlines especially the flag carriers are heavily subsidized. It has been seen that airlines which are forced to fend for themselves in times of crisis, very rarely survive. When this argument was put to him, he conceded that "the US has heavily subsidized some major airlines to keep them flying and save jobs."

For Interviewee H "it was and still is for the elite; politically it is a high profile industry and for a lot of people it is still sexy and highly prized!" However, Interviewee C holds a slightly different view. According to him, "in Europe, air travel is no longer a luxury. In other parts of the world, yes it is still perceived that travel is only for a certain class of people, the elite..." Interviewee A has some clear-cut opinions, that "it is still considered as an elite activity. The service is different with the frills and pampering." However, from a purely economic viewpoint, he argues that "the industry is more prone to political problems and international changes and influences." He also confirms one of the points mentioned earlier in this analysis that "air transport has a higher elasticity of demand than road and rail transport. People use the rail and road transport because it is an essential service to get to work. Whereas VFR could be once a year and whenever there is a recession, demand comes down quicker than for road and rail transport." But it is important here to note that air transport according to him has a more efficient structure than many other sectors of the economy but in other respects it is the same (as any other sector).

Interviewee G has a more radical, albeit interesting position. When asked what makes the difference between the two he was quite outspoken: "People say it's the arrogance. It's refusal to recognize that this capacity growth can be constrained. We accept constraints in other sectors as in road and rail." He also feels that air transport has always had some kind of privileged treatment especially the flag carriers. The similarity, he says, is that both surface and air transport are demand driven. He went on to say that one important issue that makes it even different is its 'volatility' within the economic set-up. He also had some interesting view on the vulnerability of the industry to international economic upheavals. "It has been a lead indicator of economic growth but also of decline and recession", he says. He added that "the product has a different market. It is not what we regard as public transport. It has also evolved from the belief that this was a mode of transport reserved for the elite, the very rich and the very important kind." He had some quite



atypical arguments to support his views. "Look at the [now defunct] Concorde! Who in their right mind would design something like Concorde! The problem that the industry is now facing is that the existing model is bust." Along the same lines he also brought some interesting points to highlight the specificities of the airline industry: "It is a service industry relying on face to face communication. It brings people together, in contact and links them around the globe. It increases globalization." He further mentioned the very crucial role of airfreight which most of the experts tend to overlook. He argues that "freight is much underrepresented in the debate and discussions. Freight will have to be an important part in the future business model." But he is of the opinion that aviation still has a bright future if the proper business model and structure are found. People are deluding themselves, he says, if they say they will see the end of aviation.

For many years, the aviation sector has been treated as a special industry; it was associated with adventure, luxury and glamour. Within the economy it self it is still perceived as an industry of a class of its own. But the reality dictates otherwise because the industry is subject to the same ups and downs of the world economy. It faces the same crises as any other industry. At times it is much more vulnerable than the other sectors of the economy. Within the transport industry as well, it is perceived as a privileged sector for various reasons: Symbolism, nationalism, pride associated with the sector. But again, it should be treated at par with other sectors of the transport industry.

#### IV. THE CONCEPT OF DEREGULATION AND LIBERALIZATION IN GENERAL AND WITHIN THE AIR TRANSPORT SECTOR

Here also there was some very diverse view regarding the distinction between deregulation and liberalization in both the air transport industry and the economy in general. For most of them, they are one and the same thing although some found that in the transport sector, and in the air transport sector in particular, there could be some nuances. A general view is that as far as trade is concerned they are the same thing. For one or two people interviewed, they are complementary in the sense that liberalization is more of a corollary to deregulation. This is probably due to the fact that historically deregulation started in the US and when the same movement started in Europe, it was called liberalization which basically means the same thing. For many it is just a question of semantics.

Deregulation has been an important phenomenon for world trade. The first half of the last century was marked by pronounced protectionism at all levels of international trade and more so for the air transport industry. The time for airlines to deregulate was right and it started with the Air Deregulation Act of

1978 in the United States. Although this was limited to the domestic market, it soon spread to the international airlines and obviously to other countries where it was called liberalization.

##### a) Protectionism

More than an attitude, protectionism is a policy whereby an authority, more often a government or a government organ or ministry gives protection to a company or a sector or a product. This is done by imposing a set of laws or regulations in order to protect the company or product against local or overseas competition. This applies also to aviation. It is a truism that most national flag carriers have benefited and are still benefitting from protectionism as a result of government regulations or laws. Hence, Interviewee C is sensible when he quotes Doganis as saying that deregulation is partly a result of too much protectionism. We can also say that liberalization is also a consequence of too much protectionism. As a matter of fact, most airlines in Europe went in to liberalization in order to compete with national carriers which, in spite of government protection were finding it difficult to survive. The case of Panam, Sabena and Swissair are good examples. They were all national airlines that went bust because of competition brought about by deregulation and liberalization.

Admittedly, the term deregulation is more or used only in aviation when it could very well be used for trade in general. This is also partly because in the US, there was the Air Deregulation Act of 1978 that formally and legally set the scene for airline deregulation. But it is obvious that when it comes to trade, national or international, the preferred term is 'liberalization.' Interviewee K explained that basically the only difference in the two concepts was that the "US deregulated overnight whereas in the case of Europe a more cautious approach was preferred."

Interviewee H has a different approach. He is "not convinced that unregulated capitalism is sustainable. What we have seen so far points towards this: Half-full aircraft are flown provided it makes economic sense".

##### b) Deregulation

There is general agreement that it obviously means the absence of or the removal of regulations or rules governing a business. This entails leaving the sector to the forces of the market, i.e. to the movement of supply and demand without government intervention. This is supported by Interviewee C who thinks "that deregulation is very specific. It means taking these regulations away. Control within and between states were taken away. In the US it was regulated by the Civil Aviation Board and the Department of Transportation. The US called it deregulation because the regulations were taken away, making the market freer. Doganis, however, argues that deregulation came up because of too much protectionism."



This is also in agreement with Interviewee A's approach and for him it is "the removal of all regulations regarding price... competition with free access and exit in to the market and leaving the industry to the forces of supply and demand. In the US it was deregulation and liberalization was in Europe." This is the general understanding that it may just be a question of semantic... But Interviewee J was a more specific in saying that "deregulation is trying to burst open the aviation market and moving away from the regulatory framework. In other words, moving away from the Chicago Convention and the Bermuda Agreement".

### c) *Liberalisation*

Liberalisation is more properly applicable to trade in general including aviation. The foundation of GATT [General Agreement on Tariff and Trade] and later World Trade Organisation] is based on the principle of trade liberalization. But in the aviation sector we need to look at the various interpretations. Once more, aviation is being treated as a class of its own. It was noted during the interviews that when talking of liberalization almost all interviewees (except Interviewee A) overlooked the relevance and application of the concept of liberalization to trade in general. The focus was only on aviation.

For interviewee C, "liberalization by contrast (to regulation) means changing the regulations to make it more liberal and competitive. The European liberalization was more concerned with replacing the existing regulations with some other regulation." He was about the only person who held this view. Here Interviewee B seems to have a more relevant explanation when he says that for him "deregulation and liberalization is one and the same thing... except that the US did it kind of overnight whereas in Europe, it was done gradually. This is because the two markets are different. Europe had to have a certain number of 'packages' that is the various stages of deregulation starting first with the domestic market." This is also confirmed by Interviewee A who is of the opinion that "liberalization is almost the same except that in Europe it was called liberalization and it was a slow process in three phases whereas in the US it was more radical and done almost overnight." This is further reinforced by Interviewee D when he says that "deregulation is obviously the removal of all restrictions. Deregulation was overnight whereas liberalization was more of a gradual process. Most Europeans prefer the term 'liberalisation' instead of 'deregulation'". However, for Interviewees E and F the term is used interchangeably. For Interviewee E, "liberalisation' involves "some form of control and it is the degree to which restrictions are removed". He went further to state that he does not find any big difference in the term when it is applied to trade in general. Interviewee F, however, seems to have a more interesting view: "The two terms (deregulation and liberalization) are used interchangeably which can be

very confusing. I can see deregulation as something which originated from the US when President Carter deregulated the airline industry. Liberalization is the European version of it. Removal of barriers to trade in general. In the aviation sector we still do need some form of regulation to protect the consumers because air transport is a public service. Certainly, there was the perception that because the US domestic air industry is so strong that if they [Europe] deregulate radically, the US airline will invade the European market. Liberalisation therefore is deregulation with caveat or guarded regulation if you wish."

It is also interesting to note that once more Interviewee G takes a radical approach. Deregulation for him is "letting the market rip. It is what would call the development of super competition or hyper competition. Nothing should stop me from starting an airline if I have the fund and the knowhow. When we say deregulation, we are assuming that there is a regulatory framework in place and we want to get rid of it. I think what we need is a phase of reregulation. Deregulation has not worked. Liberalization provides the basis and justification for deregulation. If I want to run an airline I do it. Nobody can put any barriers in my way. I know best. If I want to pay poverty wages, that's my right as long as I don't go against the law. It provides a very selfish way to look at the world."

Because of the antitrust laws and because of protectionism, the industry could not be competitive. In order to sustain a certain level of costs on low load factor, it was necessary for airlines to practice very high prices. They were a situation where they could dictate prices. But this was not in line with the U.S policies of trade liberalization. The very base of the US economy has for centuries stood on free trade and the refusal of protectionism. Deregulation was a concept whose time had come and air transport had the same treatment like other sectors of the economy. Because of the proximity and the very close links between the US and Europe, it was obvious that this wave of deregulation would sooner or later reach the European continent. The fear of the unknown and the apprehension against American dominance in the sector, viewed as an invasion, called for a cautious approach on behalf of the Europeans. It is now understandable why the Europeans preferred the term 'liberalisation' rather than 'deregulation.'

## V. THE CONTEXTUAL AND HISTORICAL FACTORS THAT LED TO AND ARE LEADING TO THE PROCESS OF DEREGULATION IN THE AIR TRANSPORT INDUSTRY

To understand the context in which the process of deregulation and later and eventually liberalization, it was necessary to go to its history. The historical background is important because it allows us to analyse the process in its proper context and not in a vacuum.

Although there is agreement that the whole process of deregulation was 'overnight' like many of our interviewees, the process of liberalization has been a long and tedious one; it is also a process that keeps progressing and it looks like it will be an ongoing one for many years to come. This process has moved from US to Europe and later to the Middle and Far East, Oceania and now to Africa. This in itself is quite a phenomenon in the history of international air transport. Moreover one should understand that although the whole process dates back from the American Deregulation Act of 1978, the American society had already been influenced by the antitrust laws already existent prior to the process of deregulation.

#### a) *The Historical Context*

##### i. *The Pioneers and First Entrants*

There is a lot of coherence and consistency in the historical facts brought up by our interviewees. Most of them were accurate in the dates and periods as far as the history is concerned. Interviewee A gives a good glimpse in to the history of the movement:

"It all started in the US in 1978 when the American government decided to remove regulations on the domestic market. This was a movement from 'control' to 'no control'. New entrants came in, namely Air Florida, South West Airlines, Air New York, People Express. Few years later, this was extended to the international flights whereby US airlines could fly to European destinations: the so called sky liberalization or open sky. Airlines could offset any route as long as they were registered in the US." This then must have been the major step that triggered a whole set of further liberalized airlines between Europe and the US. Interviewee A went on to say that "Countries like the Netherlands were happy to sign such bilateral agreements. KLM could fly anywhere in the US. (In fact KLM was historically the first airline in Europe to take advantage of such agreement and to open its sky to US airlines). These agreements suited the US which can also fly anywhere in the country with which the agreement was signed. But cabotage was an issue as the US could not fly domestically in other European countries." Nevertheless, Interviewee F argues that "in 1993 the European airlines had cabotage right which meant that they could treat the European market as a domestic market."

##### ii. *The Opponents of Liberalisation*

While academics, tour operators, the then EEC (now EU) were pushing for the process, incumbent airline operators for various reasons of personal and vested interests were against. Some governments were skeptical while the unions were against because they feared for the loss of jobs. Some were also rather cynical in saying this approach was more ideological than anything else and could not be sustainable. Interviewee G goes further when he said that it was not

only an ideology but "a dogma that competition will always bring superior results... and like all ideologies and dogmas, they have their uses and their expiry date."

##### iii. *Was the Industry a Big Cartel?*

Although historical facts were more or less undisputed during the interviews, interpretations sometimes differ. The circumstances that led to the process are at times given interpretations as per the perception or background of the interviewee. Hence according to Interviewee C, "the industry was a big cartel, working on a cost plus approach. There was no incentive to improve service. There was also the belief that the mere threat of opening to new entrants was in itself enough to pressurize the airlines to offer better service. Deregulation was very positive for the customers in the US." However, here Interviewee C may not be too accurate in his perception when he says that "there was a trickle down to the other regions of the world. Once the process started, it kind of trickled down to other parts of the world where airlines were forced to offer better service." This could only be applied to Europe and this also with certain reservations as we know that there was a lot of reluctance and resistance to follow the US in on this track. But it is proper to say like Interviewee B that "there was a general view that market mechanism had to be introduced and that prices will go down and service will improve."

##### iv. *Hub and Spoke*

The 'hub and spoke' system is one whereby some busy airports are identified to be the main transit airports that feed airlines with passengers for onward destinations. This is done with a view to consolidate and improve load factor and reduce costs. Interviewee F is explicit in this because the hub and spoke system was a result of the deregulation process: "With the hub and spoke system, long haul flights were being operated by the regulated airlines and the small deregulated airlines would take over for the dispatch to the other destinations."

##### v. *Cabotage and the Domestic Market within Europe*

In 1993, the European airlines had cabotage right which means they could treat the European market as a large domestic market. This was quite a landmark in the development of air transport industry in Europe.

#### b) *Outcome*

##### i. *Are There Risks of Reregulation?*

Interviewee B is quite categorical in saying that reregulation is not on the governments' or airlines agenda. "There is no momentum to reregulate", he said, "If you look at the US air transport industry, they achieved something. What was not achieved is the viability. There were heavy bankruptcies. The antitrust had been too tough and did not allow the industry to consolidate."

## ii. *Consolidation of the Industry*

Consolidation or the lack of it has been quite a recurrent issue during these interviewees. Most of them seem to agree that things in the US happened so quickly that there was no real planning and the lack of consolidation caused some kind of damage to the financial health of the various airlines. This is probably one of the reasons why other parts of the world, especially Europe and Asia were hesitant and resistant to these changes. Interviewee B went even further to explain that consolidation is neither reregulation nor a form of protectionism: "Consolidation", he said, "is not protectionism. It is to make the industry more stable financially".

## iii. *Consumer Benefits*

While it is usual for this kind of process to bring some casualties, the airline industry was no exception. There were obviously winners and losers. The big winners were the consumers. Flying became more accessible to the lower classes of the social stratum. This is confirmed by Interviewee B: "Generally the benefits have been more for the consumers rather than for the airline operators. Prices have gone down. More and more people have been able to travel and they are still able to travel which before was impossible. There has therefore been some kind of democratization of air services."

The process also gave rise to two important outcomes: the low cost and the charter airlines that really changed the landscape of the international air transport industry.

## iv. *Low Cost Airlines*

This type of operations which is still thriving today, is the marginal profitability approach where emphasis is on the core product, i.e. air seats at the cheapest possible prices without the usual 'frills'. Good examples are Ryan Air and Easy Jet. There is a market for this type of consumer who needs to arrive at a destination regardless of the level of service provided the product is safe for the consumer. Interviewee B believes "There is still a future for the low cost airlines. But the idea of low cost will change. The business model will change. Low cost airlines did not come from the charter market."

## v. *Charter Flights*

Interview B also makes a good distinction between low cost and charter flights: "Chartered airlines sell in bulk to tour operators and travel agencies but also to individual passengers. Some of these charter airlines are also owned by tour operators, e.g. Thomas Cook, Thompson and TUI. They offer IT (inclusive tours) packages. They sell in block and in bulk."

## vi. *Low Costs vs. Charter*

There is still a debate of what really makes the difference between the low cost and the charter.

Interviewee I gives a clear explanation:

"In 1992, we started to see the rise of the low cost with Easy Jet and Ryan Air. The incumbent flag carriers also stated to offer competitive products. There was competition with BA and AF. This resulted in a lack of slots and capacity. Predominantly, Easy Jet decided to use other airports instead of the main airports: Luton, Stansted and Gatwick. British Airways even set up a low cost airline called GO but they could not sustain it and it was taken over by Easy Jet. The same thing happened with BUZZ set up by KLM and taken over by Ryan Air. Interestingly, Lufthansa has been doing very well and was not really affected by the new entrants. The Charter has modified their product. They have a dedicated product. They now offer a seat only product and this is like a low cost product. The other product is what we call premium economy and this is competing with the low cost. I don't think that the charter is a bigger threat to the low cost than the flag carriers."

One can say that now the Charter is more of a hybrid type of operation as Interviewee F said "they are trying to be all things to all people".

## vii. *Product Differentiation*

Interviewee B: "There is a need to differentiate the product. Some people are still ready to pay a little bit more for a better service. The industry has become unviable and continues to lose money. Some airlines are still reducing prices because of competition. Before, airlines offered a uniform and standardized product. Now a lot of airlines are offering differentiated products. The history of the international air transport is replete with interesting facts that have shaped the industry and continues to do so".

The historical context is important in determining who really was at the starting point of the process. There were several factors that led to a desire for change: The high prices of air travel made it difficult for anyone to travel; it made travel a luxury for the well-to-do elite. As purchasing power increased and as more and more people started to find holidays abroad accessible there was pressure to review air transport management and operations. The air seat became a product requiring some form of democratization. We saw earlier and most of the interviewees agree that the starting point was the US. This is understandable since the US had always adopted a free market and competitive approach to business. The big question was why airlines should fall out of the parameters of free enterprise. The Air Deregulation Act of 1978 promulgated by the Carter administration kick started the process which would have some very serious bearings on international air transport worldwide. Naturally, there were proponents and opponents of deregulation. Those who opposed went in to mergers and acquisitions in order to survive. Many of these mergers and acquisitions developed in to cartel in order

to keep up fares. In order to cut down on costs the many airlines found in the hub and spoke system of operations a way to maximize resources and increase revenue. The freedoms of the air rights and cabotage were extended to third parties based on bilateral agreements. Many airline operators realized that deregulation was here to stay and they might as well 'bite the bullet' and find ways to consolidate the industry to their own benefits. This is how air travel prices went down and travelling became more accessible to the lower rungs of society and consumers derived sizable benefits as a result of competition. The industry has also witnessed a new strategy to face acute competition in the form of product differentiation. We should also place in this same historical context the rise of the low cost and charter flights.

## VI. THE KEY DRIVERS AND MOTIVATIONS BEHIND AIR DEREGULATION & LIBERALIZATION

We discussed above some of the historical facts that brought about the process of deregulation and liberalization. But there are also some interesting facts that gave more impetus to this process; in this section, we will look at the drivers and motivations behind the process. Some of the points mentioned here could be a mere repetition of some of the historical fact. During the interviews it was rather difficult to separate the two sets of ideas, i.e. the historical facts and the drivers behind the process. However, few of the interviewees did make a distinction.

The main motivation for the airlines was to get a bigger share of an almost saturated market; the main driver for the consumers was cheaper flights and more accessibility to certain routes. As Interviewee A puts it, "there was a need for more competition, reduction in fares and better flexibility in routes scheduling. There was also pressure from consumer groups and opinion leaders. New investors thought that there were lots of money in airline business and wanted to get it.

### a) *Consumer welfare*

The welfare of the consumer was at the centre of some of the preoccupations of the various governments and pressure groups. There was a need also to democratize travel and make it more accessible to the lower income groups. Interviewee C brings in a new argument in saying that there was a school of thoughts that maintain that "regulation should be limited to safety only" and the main concern of stake holders were consumer benefits and more productivity and that the "industry should be left to the market forces."

### b) *The elimination of trade barriers*

The elimination of trade barriers was an inevitable development with the advent of GATT [General Agreement on Tariff and Trade] and later World

Trade Organisation. With the incoming of several regional groups such as OAU [Organisation of African Unity, now African Union], Non-aligned movement, EFTA [European Free Trade Agreement], it became necessary for the world trade community to bring some order at the international level. Interviewee A is also of the same opinion. According to him "the elimination of trade barriers drove the market (of air transport) to deregulation. Countries which had a fair share of the tourism market were also pushing for a more liberal approach to air transport." He also finds the 'rigidity of schedules' as another factor that pushed in the same direction. The European Commission, he said, was trying to 'sell' the concept of deregulation not only for air transport but for the other products as well.

### c) *Outcome of the process*

Most of the interviewees held the view that for many years it was the Americans who benefitted the most of the process. There was some resentment. The Europeans were reluctant because they thought that they will be once again the losers because the Americans are economically powerful. This is confirmed by Interviewee E who still felt that the "the benefits were mostly for the US. They had the most powerful airlines. They could serve more countries." Interviewee F also supports this view: "Margaret Thatcher was a real advocate of the process of liberalization. She said she wanted to 'return the family silver back to the family'. But Europe felt that there was no coherence in the process. There was a frustration because people in Europe felt that the Americans were having a better deal than their European counterparts".

It is interesting here to point out that Interviewee G added a third dimension to the process: Privatization. He even said he was surprised that this 3rd dimension was not covered by our list of questions. He is of the opinion that the moment that the World Bank interfered in the whole process, things took a different direction. The process of deregulation, he says, "was led by the US, helped by Europe and then the World Bank discovered it. The World Bank is almost forcing around the world. The new business model will only survive if the customer has a product of quality at a price he can afford. I can give you some examples: South West, Jet Blue and Virgin that are very customer focused."

As we have seen earlier, there were several drivers and motivators behind the changes. There was a need to improve the product and service and at the same time making them more accessible. Consumer benefits and welfare became an important issue. Moreover the elimination of trade barriers in the aftermath of the GATT and the advent of the World Trade Organisation turned air services in to mere commodity products subject to the same rules and regulations of international trade.



## VII. THE KEY PLAYERS AND PEOPLE INVOLVED IN THE PROCESS

Various stakeholders played their role in the process: Some had some very direct interests namely the airlines themselves, governments and consumers. Indirectly the economic operators all had an interest especially the tourism and freight industry.

### The Role of Government

Governments obviously had a key role as they were the ones to pass and implement laws in order to do away with regulations. One can say that the government had a leading role in both the US and Europe and the rest of the world. This is confirmed by most of the interviewees. Interviewee B for instance holds that "there were a lot of lobbies: local lobbies as well as lobbyists protecting one particular airline."

#### a) Lobbies

He went on to say that apart from airlines the others who pushed for liberalization were: academics, opinion leaders, government, politicians and some airport operators. Interviewee A went further in adding to the list the following: policy makers, airport authorities, regulators of the air space. Lobbyists for Heathrow and lobbyists for Gatwick.

#### b) Other Key Players

According to most of our interviewees, the other key players were: the Carter administration, consumer organisations, unions, CAB [Civil Aeronautics Board], ICAO [International Civil Aviation Organisation], IATA [International Air Transport Association], AEA [Association of European Airlines] and the EU.

The key players in fact were the stakeholders in the industry: Government was concerned as the airline industry was more than ever before a powerful economic force. It had become an essential service for the economic development of countries but also for the world. There was need for some form of intervention if not downright protectionism. International organisations, especially those mentioned above, were prominent in their activities to speed up or defer changes.

## VIII. THE MECHANISMS USED TO IMPLEMENT DEREGULATION / LIBERALIZATION IN THE AVIATION SECTOR

#### a) Legislations

The Air Deregulation Act of 1978 in the US was the legal trigger in getting the process started. This law eventually had a rippling effect practically all over Europe. However, the mechanism in Europe was more gradual in the form of the three 'packages' with broad target dates: 1987, 1990 and 1993. Removal of all restrictions was to happen over this period.

#### b) Bilateral Deregulations and Agreements

These agreements which are still applicable

today set the rules for the exchange of facilities between two countries giving accesses to each other's facilities namely, landing rights based on the various 'freedoms.' But as Interviewee A points out at the initial stage "bilateral agreements were declared illegal by the European Commission. But before the process of deregulation in Europe we had what Interviewee B calls 'bilateral deregulation'. He further emphasized that "before the first package (1987) the UK had already deregulated with US, Ireland and the Netherlands." Interviewee C went even further to say that "liberalization was also taking away previous bilateral agreements. New bilateral agreements were signed by UK, Netherlands and Ireland." The idea, he says was to have free market, free access and free capacity constraints."

#### c) Allocation of Slots and Grandfather's Rights

Allocation of slots has for many years been a headache for both airlines and airport operators. Slots are authorizations to land and take off at airports at specified times of the year. This is done with a view to satisfy all airlines because of space constraints, infrastructure constraints and congestion at airports. This is normally allocated by airport authorities in consultation with airlines. Most interviewees agree that allocation of slots is an important aspect of airport operations and it is necessary to have a fair distribution of such slots as there is naturally more demand for slots during the high seasons. This is also confirmed by Interviewee C who stated that "slots regulations were to be applied and Grandfather Rights reviewed". The latter are rights of landing and takeoffs inherited by airlines that have been in operation for several years before the application of the deregulation process. Interviewee C is more explicit as there is according to him the "argument as to who owns the slots: the airlines or the airports. Airlines who had slots could sell them. The stronger airlines could buy more slots than the small ones."

Interviewee F also mentioned that Heathrow was the most constrained airport in Europe regarding the allocation of slots. According to her, "there was a need for a Pan European approach because of the chaotic and incoherent way the process was going on. There were the Grandfather Rights and the limited number of slots to be allocated. There was the case of some aircrafts flying in and out empty in order not to lose the slots because of poor load factors".

#### d) Operators' Expectations

We mentioned earlier that the process in Europe was to be stretched over a certain number of years based on the packages themselves based on the three stages. This probably explains why the results, positive in some cases and negative in others, were not immediate like in the US. All the interviewees agree that there were very high expectations in all quarters: among the consumers, the airline operators, governments and stakeholders in the tourism and freight industry.

According to Interviewee A, "airline operators expected a growth of at least 4% and consumers expected prices to fall by 1/3. But this did not happen as was expected."

#### e) Outcome

There were obviously a certain number of consequences as a result of the process. There was more accessibility and more freedom for operators to maneuver. As Interviewee D pointed out "airlines no longer had to file their fares with the governments. Airlines had to apply for slots. Inside the EU, Grandfather's Rights disappeared. But there still was a need for some form of control. They had to keep some regulations for the new entrants in the market. There was still the licensing process and some kind of regulatory process". For Interviewee E, "privatization of airlines and airports also became more possible as a result of the process."

The mechanisms were many at various stages of the development process. Legislation in the US and in Europe was probably one of the most important mechanisms. This is now to down play the role of the famous three packages, i.e the various stages of gradual liberalization as the EU was rather apprehensive to make radical change to enforce the liberalization process. The gradual liberalization started with bilateral deregulation and agreements. Since most of the major airlines had kept their grandfather rights, it became necessary for the airline associations to get in to regular negotiations for a fair allocation of slots.

## IX. THE PAST, PRESENT AND ACTUAL EXPECTATIONS ACROSS THE SECTOR

### a) Consumer's Expectations

As we mentioned earlier, consumer expectations were high: a freer market, lower fares and better service. Consumers felt that more competition will eventually lead to satisfy such expectations. There were more opportunities for airlines to succeed but also to fail so that other entrants can come in. According to Interviewee D, "there was also the hope of more and better consumer benefits and better fare structure".

### b) The Operators' Expectations

Expectations among operators were also high: more demand for travel; profitability and viability of the industry; more consolidation of the market and the industry; more routes and better flight schedules; higher load factors; increased of and growth in air traffic; Interviewee F felt "there was a huge amount of trepidation for some carriers. For them it was unknown territory. But there was also a large amount of optimism and excitement." Economic operators also saw in these developments a way to increase productivity which would be a boost for the economy. Interviewee F went on to say that "for the EU, there was hope for cross border trade and making Europe itself as one attractive

destination that will bring more foreign currency to the respective countries of the continent."

### c) Market Dominance

Like in other areas of business there were preys and predators. Some tried to dominate the market. Apart from the new entrants trying to make a breakthrough, some of the scheduled airlines also took advantage of these changes namely, BA, KLM, Aer Lingus and Lufthansa. This is confirmed by Interviewee B when he says that these airlines took advantage of franchise agreements to dominate the market. Interviewee F went further in saying that "Charters were trying to market themselves as low cost carriers operating scheduled flights. A good example was Monarch which was trying to fly as scheduled, charter and low costs. They tried to be all things to all people. It was a kind of hybrid type of operation."

Various stakeholders had different expectations to suit their needs. The consumers wanted a better product at a cheaper price. They got a lower quality product at a price they could afford from the low cost and charter operator. This is supported by the desire for 'no frills' flights. For many consumers it was more to 'arrive than to travel'. In other words, the destination became more exciting than the journey as such. The expectations of the operators were diverse: the proponents of deregulation and liberalization expected a drop in fares and a rise in demand for travel. The opponents were hoping to buy time by merging and hoping that the process will not last and that the industry will have to revert to the old system. But this did not happen. The process was an irreversible one.

## X. THE REAL FACTS AS A RESULT OF THOSE EXPECTATIONS

From the interviews, one gathers that there were high expectations and forecasts but a lot of the things that actually happened were not among the predictions. For many operators expectations fell much below what were forecasted. Admittedly, many of the things predicted actually happened: Growth of airlines; larger aircraft to carry more passengers; increased air traffic; more competition; cheaper fares;

Some things for which there were high expectations but did not happen: Very high profitability; expansion of airlines; more employment; better services on board all airlines; sustainability of airline business

Some things were never expected but did happen: Failures of airlines to sustain their operations in the long term. Heavy closures and loss of jobs;

### a) Successes and Failures

The above is rightly summed up by Interviewee C when he said that "there were lots of failures and lots of start-ups and growth of larger airlines in to mergers. One major merger was KLM/AF [KLM/Air France] and



later with AZ [Alitalia]. The biggest problem in the airline industry is that we don't allow airlines to fail. Air transport will thrive better in a globally free market." He also disagreed that this expectation of failure should be treated as a fatality for the industry. On the contrary, it may be healthy for the industry in general although it does bring some instability in the industry at some time in point.

As Interviewee I pointed out: "In fact the flag carriers thought that they could compete if they adjusted the product and also they had the Grandfather Rights and the advantage of previous bilateral agreement with the various governments. Nevertheless, they found it very difficult." There is an explanation for this on which most people agree: Because of the nature of the product (elite, luxury), because airline operators were a class of their own and so were their products, and very often because of the monopolistic advantage they have in many countries, they had no consideration for cost control. It was a highly investment intensive business providing a highly priced, high margin product, i.e. high costs, high selling price and high profits. Consequently, when the low costs came in offering marginal cost and marginal profit product, the well-established flag carriers went totally off their pedestals. The mistake made by some of them was to think that this was an ephemeral situation and the market will settle down to where it was before.

But the airline operators did not review their cost structure. Yet they still had a competitive edge because they had well-defined contracts and bilateral agreements and the grandfather rights. Admittedly, they also had to bear the costs of handling and maintenance which made it difficult to compete. The low costs subcontracted all such services which made them cost efficient. This is confirmed by Interviewee I who thinks that there will still be the flag carriers around because of the feelings of nationalism. "The survival of the flag carriers is tied to the state of the economy. There is a feeling of nationalism as well: the Dutch for KLM, the British for BA, the French for AF and the Germans for Lufthansa. The British may be the last to do away with this concept."

#### *b) Consolidation*

This is an issue that has been recurrent in these interviews. Most of our interlocutors seem to regret that consolidation which should have been a priority did take a back seat. Both interviewees B and C made it clear that the consolidation phase has been and is still taking a long time. According to interviewee C, "essentially there are three large blocks – Asia, US and Europe – more consolidation will bring them together. The fear of having a cartel should not restrict the consolidation. If we have a free market, it will lead to 3 major alliances." But he conceded however, that there is more consolidation in the regional markets.

#### *c) Market Supremacy*

Most of the interviewees also agree that because of the chaotic situation in which the process was launched, there was some kind of law of the jungle, survival of the fittest. This gave rise to some predators wanting to take over or eliminate the small ones in order to dominate the market. As Interviewee C put it, "the new bilateral agreements brought about some conflicts after some of the mergers." Interviewee A went even further in saying that "airlines especially the larger ones were trying to dominate the market. There was a feeling that the deregulation packages were not delivering executive competition across the board. There was a lot of competition among airlines but they were much below expectation especially regarding price reduction. There was a lot of mergers and franchising.

#### *d) Low Cost Airlines*

Nobody saw the arrival of the low cost airlines and it is now no secret that the low cost airlines were the ones that really made a remarkable change in the air transport industry. One can say that the like Interviewee B "that it was the low cost airlines that brought major changes that started to meet the expectations." It looks like this is now the stage where there is more or less agreement that prices are acceptable and service is also up to the level that one can expect for this type of product. This is further supported by Interviewee B who opines that "we have now reached a situation of maturity. Now there is more rationalization of routes network. The market is now fairly competitive but we (the Europeans) have reached a situation of maturity just like the US." Various people in the field still believe that we have now reached the level of saturation. But there will continue to be more entrants and more exits. For transport economists, this is not necessarily an unhealthy situation as better products and services will emerge.

#### *e) Consequences*

Interviewee D takes a more positive approach as he believes that there were some positive developments. He even believes that some of the expectations were exceeded. Although many people may disagree with him when he said that "employment expanded (we know that there were some heavy losses of jobs as well – Italy (Sabena), Switzerland (Swissair), more airlines have come in to the market (but many have also been pushed out – Panam, Continental), the respective governments were happy the way things were going". On a more realistic note, he conceded that "some airlines like Sabena, Swissair, AZ had failed. Government had been pouring money in to these airlines to keep them going." In fact this is also supported by interviewee E who went further to say "that many of the airlines went bankrupt and there was no consistency in the product and service."

The hub and spoke system which we have already mentioned earlier was also an important development which came up as a result of airport congestions. It became necessary for airline operators and airlines to adopt a system of transit and feeders whereby traffic was diverted to larger airports with better infrastructure and with possibilities of transfer to final destinations. In other words, this involves the convergence of heavy traffic in to main airports (hubs) with onward connection to other destinations. This system which is still in use today at big airports (Frankfurt, Zaventem, and Heathrow) is appropriate in easing airport congestions. This system also works hand-in-hand with the slot allocation system already discussed earlier.

The fact that for many years, scheduled airlines have had relatively good time prompts Interviewee G to voice out some different views which is worth mentioning: "Lots of the major airlines really never believed that the these good time will end. They also thought that they will be more profitable by biting in to each other markets." He also brought Michael Levine's theory of the contestability of the market: easy entry and easy exit. He also mentioned Milton Friedman who, he said, had a great influence in these developments. The airlines like other businesses had their booms and slumps.

There is general consensus that the process of liberalization opens the doors for a lot of opportunities for new entrants to come in for a quick buck. But many of the airline operators had more of predator behaviour ready to pounce on small airlines which in this 'jungle' found it difficult to survive. In fact, for many among them it was 'survival of the fittest' and 'might was right'. Consequently, there were some successes but a lot of failures as well. Countries maintained their flag carrier's concept as a matter of national pride but with a cost. They had to heavily subsidize their own national airlines. Some of those operators were wise enough to go in to some form of consolidation especially among the scheduled airlines.

## XI. THE REASONS FOR THE MAJOR DIFFERENCES BETWEEN EXPECTATIONS AND REALITY

Early, we discussed the various scenarios where expectations fell much below what was predicted. We also mentioned the many cases where such expectations were in fact realized. But there was obviously a big gap between expectations and reality which has been more of a disappointment for stakeholders who had an interest and probably bigger hopes that things would change in their favour. According to Interviewee A, some operators were overoptimistic. They expected too much from an already saturated and constrained market.

### a) *Resistance to Deregulation*

It is widely accepted that some people are naturally resistant to change. This is what Interviewee F calls "historical legacy and historical inertia: It's been like this, we leave it as it is. Some airlines didn't want to change. They were still very protectionist in their approach". Interviewee G mentioned "the political power behind this resistance and the resource behind this political power." For many decision and policy makers the 'status quo' was still preferable to a journey in to the unknown. Interviewee J holds, however, "that there is an attitude in scheduled airlines that people like to fly out of certain airports. The traditional hub and spokes arrangement of scheduled airlines have survived. But all this has contributed to better one-way capacity".

### b) *Exogenous factors*

Some factors were beyond the control of the decision makers and other stakeholders namely governments and airline operators. This was rightly mentioned by Interviewee C who found that "there was not enough freedom and still too much protectionism. Oil prices were and still are outside our control." According to him it was not always possible to deregulate at the speed they wanted: "The more you liberalize in one region, the harder it is for other regions to deregulate, especially as some of the deregulated airlines were failing. There is a valid argument to offer some protection for a short time." He thinks that the tendency to preserve the inheritance of the flag carrier concept is hard to change. "Take the example of Singapore, he said, such a small country such a big airline!"

### c) *Constraints*

There were some other constraints that made the process difficult. One of the reasons mentioned by various interviewees is the volatility of the industry. This point was raised by both Interviewee C and G but former explained that "what makes the industry volatile is that it is tied to the general economic activity." Obviously there are other explanations to explain this volatility. We already discussed earlier that the elasticity of demand for the product is also an important factor as well as the fact that it is still perceived as a highly luxurious product; seasonality can also explain this volatility as well as political instability and other natural events like outbreak of diseases (H5N1, AH1N1, Chikungunya etc).

Interviewee B feels that "the packages were not delivering as expected. The low cost airlines made things different to what actually happened." As this was also mentioned earlier, no one had foreseen the advent of the low cost airlines; this is also Interviewee A's view. Interviewee B went further to say that "there was some consolidation at the beginning but this trend did not continue. There was instead a lot of merger activity." Interviewee C also shares this view: "there was also an expectation of larger consolidation but this is taking a

longed time than expected"; he also observed that ex-third countries are still tied down to bilateral agreements.

#### d) Outcome

Interviewee A found that "the end of protectionism left airlines at a loss". This is also an argument that kept coming up as the operators were not prepared for this kind of change and most important of all, they had too high expectations. For Interviewee E, there were adjustment problems all the time. Their teething problems were lasting too long and showed the vulnerability and fragility of the industry. Many of our interviewees insisted that this was due to the lack of consolidation and the refusal that the good times had come to an end and a new paradigm shift had occurred. This is confirmed by Interviewee E who regretted that "the models of deregulation and liberalization were based on the old set up" and "the regulators themselves did not really understand what was actually happening". Interviewee F also confirmed that "there was resistance to these changes. Certain countries were not ready to open their markets to airlines that would compete with their own flag carriers." Interviewee G is rather sterner in his observation when he said that "the expectations were always ridiculously high, ridiculously ambitious and ridiculously optimistic. All nice things have an end. They did not have a strategy for when the good times will end."

According to Interviewee I, "there was a difference between expectations and reality because the airlines 'were on a long learning curve for a longer time that was expected, especially with the teething problems.'" He also holds, like the other interviewees, that no one had foreseen the impact of the low cost airlines. "The low cost", he says, "has stimulated a new kind of passenger and a new type of market." Some of the short haul routes were being serviced by the big airlines at a loss, but when taken over by the low costs became profitable. He also gave the example of the little town of Bergerac which is services only by low cost and had had become very viable.

Events were not up to expectations for several reasons. There was naturally resistance to change in general but specifically there was resistance against deregulation the American way. In spite of the EU competition commission insistence for more competition, there was some fears among the then twelve members of the Union. There were some constraints beyond the control of the operators. Different legislations in different countries delayed the process. Since it was a new phenomenon, there was some kind of wait and see approach. This slowed down the process somehow and this explains also the three packages approach mentioned earlier.

## XII. THE FUTURE TRENDS FOR THE AVIATION SECTOR

We have seen earlier the various points mentioned by the interviewees regarding growth. Historically, the airline industry like many businesses have known booms and slumps like Interviewee B said and some peaks and troughs as per Interviewee G. According to most interviewees it is now becoming more and more difficult to speculate on the future. This is so because of the volatility of the industry as Interviewee G said earlier but also because of the unstable exogenous factors such as the prices of jet fuel and the present international economic disorder.

#### a) Growth in Air Traffic & Volume

Interviewee C holds that in general, there will indeed, be growth but at a much lower level than we have seen so far. Interviewee B is more precise in his approach. He believes that "Brazil, China and India will grow in volume. There will be more stability in Europe and North America."

#### b) Sustainability, Viability and Profitability

One of the main issues for the airline business has for many years been that of sustainability. Air transport is cost intensive: Equipment, capital and labour intensive. High operational costs in a situation of almost perfect competition do not guarantee viability and profitability especially if airlines have to just work on marginal profitability. For Interviewee B, to achieve an acceptable level of viability and profitability, "the structure should change. No remarkable profitability will be seen unless there are some structural changes". He also went on to say that tourism destinations will be restricted to the number of hotel rooms and more hotel room will obviously mean more flights but not necessarily at a price that will guarantee viability for airlines. But Interviewee A seems slightly more optimistic when he stated that "the business has an innate ability to restructure" but he went on to say that "we really don't know what's in store for the big planes."

For Interviewee D, "there will be some growth and in both passenger and freight traffic." But he was not too specific in what regions or areas of the world such growths will occur. Interviewee H foresees that "the regulation regarding climate change and the rising prices of oil will drive up the cost of travel."

#### c) Environmental Concern

Almost all interviewees showed a remarkable concern for the environment in the future. For Interviewee E, like all the others, "environment will continue to be a big issue." There is also a consensus that more and more fuel efficient aircrafts will be on the agenda and this is not only for the reduction of fuel expenses but also for the environmental protection. According to Interviewee F, the new US change in

environmental policy will also influence the aviation industry concerned for the environment.

Interviewee H who is an environmentalist and a biologist before developing an interest for aviation is of the opinion that “we are not going to prevent the 2 degree rise as we thought we could. We have lost control and we’ll have to adapt to it. When the Kyoto protocol was signed, international aviation was excluded because it was seen as a special case. Only domestic aviation was included because it was easier to apportion the level of emission within one country. It was difficult to decide which portion of emission was to be accounted for at departure and arrivals. But now international aviation is not a special case any more”. He went on to say that now because of the open sky, you may have 10 aircrafts flying to the same destinations instead of 5. Eco-efficiency is decreasing and emission is increasing. A jumbo jet carries 5 tons of catering. Half a ton of fuel has to be carried for this. We now need different business practice. Duty free items don't have to be carried on onboard. Unsustainable! Unsustainable! You should be able to buy at airports at departure and collect on arrival. One litre of whisky needs one litre of fuel to carry it over 5000 miles. If the industry is sensible and sensitive to the issues of environment, it will look at all this, which is not the case now.” His arguments are sensible and convincing. And he also said that “low cost airlines’ are more eco-efficient because of no frills. But then the cheaper the flights the more people travel.” This looks more like a vicious circle and a no-win situation. Our interlocutors have yet some more suggestions: “Passengers who carry very little or no luggage should be given a rebate on their tickets. We need to give the customer the opportunity to buy an eco-friendly product. We are in an educated democracy and we don't have to always wait for the government to do things for us by for example increasing the future price of oil”. However, he still thinks that government has a crucial role in further educating the people. “Global aviation”, he says, “contributes to 2 to 3% of CO<sub>2</sub> emission. And if you add contrails that contribute to emission and pollution caused by cars coming to the airport, it is around 6 to 7%. Aviation is climate costly.”

#### d) Technology

While there is a lot of hope that technology could come to the rescue in various aspects of the industry and its management and efficiency, at least one interviewee kind of downplayed this aspect. Interviewee C for instance holds that “technology will have a rather limited input within the next 25 years.” But in general, most interviewees have a lot of faith in technology which hopefully will help the industry in providing better and more efficient equipment. This is more so for aircraft that will be expected to be more fuel efficient and less of a threat for the environment. Interviewee E opines that “if we have more fuel efficient aircrafts, we’ll pay less in terms of environmental taxes.” For Interviewee G, there

will be a remarkable technological advancement but “technology comes with a price. Technology will be used as a competitive weapon. Those who can afford will use this consciously to dominate the market and to drive out competitors; particularly in long haul journeys of over three/four hour flights and longer where you will see the real benefits of technology”. Interviewee F is definite in saying that we will see more fuel efficient aircrafts but she also ventures to say that we may also see ‘pilotless aircrafts’! Interviewee D is also of the opinion that it will be possible to fly planes without pilots but he then asks the question: “How many passengers will agree to travel in an aircraft without pilots?”

#### e) Oil Prices and Alternative Sources of Energy

Oil prices continue to be a Damocles Sword on the heads of airline operators. This is almost an obsession for most airlines. Most of our interlocutors agree that oil prices will continue to be a weapon in the hands of oil producers, especially those of the OPEC cartel but international economics will dictate some levels of fluctuations but as well as some stability depending on the international economic situation. For Interviewee E, oil prices will continue to rise and those who hedge on fuel prices will continue to lose money. Almost all of the interviewees feel that alternative sources of energy for aircraft will not be found in the next 25 years although they may release pressure on other traditional users of crude oil like the electricity suppliers. This in turn may also bring down the prices of oil as a natural reaction to a decrease in demand for traditional fuels. Interviewee D also supports this view. According to him “the airline industry will probably be one of the last users of kerosene as it is still a more attractive source of energy in terms of price. If other alternative sources of energy become attractive may be then the price of fuel will be more interesting for airlines. Aviation has been looking for alternative sources for a long time, especially hydrogen fuels.” But Interviewee J has some reservations because according to him there are already questions about water vapours emitted and which could also cause some concern for environmentalists. Interviewee C is rather positive in thinking that “within 25 years, there will be more production of energy through alternative sources outside the air transport industry. There will sure be more investment in the development of fuels”. But Interviewee A thinks that “biofuel is not a solution as some people tend to think. There is still a risk that the fuel freezes at very high altitude.” Interviewee H also thinks that bio-fuels and artificial fuels will only prove a short term solution. Because of the quantity required, these will never be a viable solution. Hydrogen fuel will also be costly and you’ll have to have a hydrogen fuel station at each airport. Nuclear energy will be politically unacceptable. People living around the airport will not agree to it. It is a decision for society to use alternative sources of energy for domestic and industrial purpose and leave the carbon fuel to aviation”.



### f) *Removal of Barriers to Liberalisation*

There is a agreement that further deregulation and liberalization will obviously be beneficial to the industry in general. Naturally, the opponents of the process may have a different view. For Interviewee C "if there is further deregulation, more barriers will be removed, things may look better. But this will require airlines to fail. The logical way forward to the process of liberalization is multilateral agreements between North America and Europe which will then be exported to Asia".

### g) *Some General Predictions*

There is no great optimism for the near future. "May be in the next 10 or 15 years", says Interviewee C on an apathetic note, "but then, we have been saying the same thing for years." According to Interviewee A, there will continue to be chaos as new entrants enter the market. Interviewee E believes that the recession will continue to cause job losses, but "the airline industry normally picks up faster. But it will take some time. There will continue to be a permanent decline". The last comment may sound contradictory but it reflects the dejected moods regarding the future of the industry.

Interviewee F is more specific. She anticipates more consolidation. However, she is of the opinion that more subsidies will have to be given to weak airline to provide for air services as an essential public service. "Airlines will continue to be bailed out by their respective governments to prevent bankruptcies and job losses; some airlines will continue to be dependent on loans to survive." According to her there will be more regional routes and more mergers and takeovers.

As straightforward as ever, Interviewee G makes the following rather glum forecasts: "Continuing turbulences, continuing shake-ups, continuous failures". Airlines will have to change the way they operate, he says. "They can't blame the governments, legislators or the market. They should have a look at themselves and ask the question: Are they fit for the purpose? They can then focus on their strengths".

The future of the aviation sector is not as bleak as some people may think. It is just that it has gone through very long and protracted periods of transition. Growth will occur at a diminishing rate and this is largely due to the prevalent economic crisis. But air transport being an essential service, it is here to stay and develop for many more decades to come. Sustainability will be linked with profitability but constrained by environmental factors. The two major aircraft producers namely Airbus and Boeing have already gone in to the designing of new equipment based on the latest technology in order to decrease noise and emissions especially at take off and landing. Some of the future developments will obviously come with costs to the operators on the basis of polluter pays. This kind of cost however will obviously be passed on to the consumer. Now that most airlines have learnt the lessons of the past they are bound to

tread carefully and find all ways to anticipate problems and go in to a process of consolidation and product differentiation.

## XIII. THE KEY ISSUES/CHALLENGES FACING THE INDUSTRY IN THE FUTURE FOR THE NEXT 25 YEARS OR SO

This was a challenging question for the interviewees especially most of the forecasts and predictions had been dealt with in the previous question. Here of course, we are looking at the challenges for the industry in the next 25 years. This makes the question slightly different. Some of the points, however, keep recurring: Environment, fuel prices, recession and competition.

### a) *Environment as a Challenge*

It is a recognized fact that with global warming for which the aviation industry is also partly responsible, environment will continue to be a threat to the planet. The aviation sector will be under pressure to review its ways of operation. Most Airlines will be subject to tough laws and the EU has already set the scene with its regulations regarding the level of emission, decibels at airports and the age and conditions of aircrafts. For three interviewees at least notably Interviewee A, B and E environment may be the biggest challenge for the industry. The big questions according to Interviewee B will be: "To what extent the can expand and grow without damaging the environment and increasing global warming and to what extent also the industry will have to pay its way especially regarding the environmental costs". According to Interviewee D, communities living around airports will be a cause for concern because of noise pollution. This is also the concern of Interviewee E who thinks that the industry will be further constrained. He gave the example of "the third runway at Heathrow which will de facto be constraining." For Interviewee H, "water will also be a serious problem, added to this you have peak oil, climate change, environmental and capacity constraints at airports; aircraft noise, local residents, local air quality". He went on to say "that "airports will have smaller capacity than their actual infrastructure. 80% of airports are now working below capacity because of capacity constraints".

### b) *Rationalisation of Routes*

By the look of things it would seem that the bigger problems will be on the supply side with serious constraints on the suppliers of air services. While consumers will continue to press for cheaper fares, it will be difficult for airlines to operate within a situation of oligopoly. This is also the view of Interviewee D who holds that the airlines will have to review their modus operandi. He also thinks there will be problems of infrastructure as airlines go on trying to cut down on costs of operations.



### c) *Challenges for Governments*

As government is one of the most important stakeholders, the bigger challenge is often for politicians and policy makers. Governments will obviously have to continue to meet the expectations of operators and consumers alike. Because of the essential nature of the service, governments, especially those maintaining the flag carrier concept, will continue to fork out subsidies to keep the services going. This is Interviewee E's view and he went on to say that "the market will become saturated very quickly and the credit crunch will continue be a big challenge because of the shortage of liquidity for further investment.

Interviewee G sees the global aviation shifting to the Gulf, with Dubai or Abu Dhabi becoming the hub and Asia Pacific airports becoming the spokes. This scenario according to him will be due to the powerful OPEC countries who will decide to whom to sell its oil in a situation of scarcity as oil is a finite resource. He also sees an on going important role for Brazil, China and India who will have a bigger control on the world economy which will eventually influence the airline industry worldwide. According to Interviewee I, "the challenges will now be more difficult to meet. Finding new markets and bigger volumes will be more difficult. Unless we see an expansion of the Russian market or the North African market. The traditional markets are quite saturated and stagnant right now. There could be some low cost long hauls on the Malaysian, Indian and Indonesian markets."

### d) *Load Factors*

The low costs, according to Interviewee I, will have no load factor problems although this will continue to be a problem for regulated airlines. He supports this view because for him "already in a period of recession, the average load factor for the low cost flying out of Stansted is 75%. They also practice overbooking in order to avoid no shows. Normally all airlines have a 10% over booking because of the high costs of bumping passengers. Low costs will avoid such costs as it will defeat their purpose of cutting down on costs. Usually, only economy class passengers on regulated flights are bumped.

Like many other industries the airline industry will have its share of challenges for the future. According to most of the interviewees one of the biggest issues will certainly be the environment. The industry will have to bear the cost of its 'contribution' to the global warming and climate change. These challenges will also be for respective governments especially those who will try to maintain the scheduled airlines. There will be more rationalization of routes in order to be more cost effective.

## XIV. THE POSSIBLE SOLUTIONS TO THESE ISSUES AND WHICH ARE WORTH INVESTIGATING

Our interviewees made some very interesting suggestions and proposals that the industry would be well advised to consider. One of the most important and recurrent points is that of consolidation within the industry. Although this may sound rather abstract, most of our interlocutors support this view with concrete proposals.

### a) *Change in Mindset*

In order to change the aviation scenery and landscape in to a viable and profitable endeavour, it is necessary and imperative that operators adopt a new mindset. Most of our interviewees are quite objective on this. They are of the opinion that the liberalization process could have achieved more if only there was a more realistic and rational approach. Earlier, we mentioned the rationalisation of routes and the necessity to treat airline business like any other business, without the aura it has always seemed to have. The words 'structural changes' and 'consolidation' have been like leitmotifs during these interviews. Surely, they cannot all be wrong! Interviewee C even talked about 'better ways of management and more intelligent ways of running airlines'.

### b) *Mergers and Acquisitions*

This is not a new idea although Interviewee A still sees this as a solution. More mergers according to many observers will only push the industry in to a cartelization and we will all be back to square one. Mergers have worked when some big airlines have taken the small ones under their wings until the latter can fly independently. The joint venture between KLM and Kenya Airways is a case in point. After a decade of a merger with KLM, Kenya Airways can now fly on its own and is at present one of, if not the, leading airlines in Africa.

### c) *Differentiated Product & Services*

There seems to be a paradox in Interviewee A's suggestion of differentiated product and service and standardised product and service. Differentiated product in marketing is precisely a non-standardised product. This was also Interviewee B's contention earlier but he was more consistent. There is a need for a differentiated product at a higher price that is justified by the kind of product for people who can afford. Standardised product and services at standardized prices may not be the answer for the up market traveler who is still looking for the 'frills' in spite of the recession. We have shown earlier and this has been supported by some of our interviewees that in spite of the international economic downturn, people will still travel for business, conferences, VFR and less for holidays.

Interviewee G has a different stand when he says that “the airlines should do their mea culpa. They should have a long and straight look at themselves”. He also suggests that they go in to some type of SWOT [Strengths, Weaknesses, Opportunities and Threats] analysis to answer questions about their strengths and weaknesses. “Ask ourselves what business we are in”, he suggests, “what are our strengths and weaknesses? What kind of business model do we need to actually fit that role?” He also foresees big mergers and star alliances as he calls them. According to him, “the concept of flag carrier is absolutely ridiculous.”

Admittedly in terms of solutions, none of our interviewees came up with impressive ideas that will really make a breakthrough in the industry. However, it is fair to consider the various proposals made. There will be a need for a major change in mindset especially among governments and airline operators alike. Mergers and acquisitions may not have been an ideal solution but it has worked well for some airlines. Differentiated products and services are also new ideas worth considering in facing acute competition.

## XV. THE FUTURE THREATS AND OPPORTUNITIES FOR THE AVIATION SECTOR

We mentioned earlier the need for a SWOT approach and this may be a good occasion for airlines to also look at the threats and opportunities to improve the situation for the industry at large. There will indeed be some serious threats as also expressed by our interviewees.

### a) *Exogenous Factors*

These are factors beyond the control of the operators in the industry. Interviewee C is quite clear in his opinions. He mentioned terrorism, environment, government intervention, fuel prices and what he calls ‘wholesale changes in consumer behaviour. Interviewee A added SARS, AH1N1, new taxes and globalisation to the list.

Interviewee C does not see globalization as a threat. Instead he sees some interesting opportunities. He again sees an opportunity in differentiated products and services. “We need more distinct airlines and aircrafts. Now all airlines look the same. There is a need for more product differentiation: different product for different people. At the moment there is too much standardization of the product. There is a place for premium and non-premium products on the market. We now have too much homogeneity in the product”

### b) *Endogenous Factors*

On this count Interviewee B is more optimistic. He sees “more opportunities as a result of further deregulation; more expansion with airlines flying to more destinations. For example, BA will set up a headquarters

in New York to service Brazil and other South American destinations.” Interviewee F holds that “consolidation and fragmentation of the industry will bring opportunities for new entrants to enter the market.” There is a general agreement that Brazil, China and India will emerge as big players which in turn will change the way Europeans and Americans run their airlines. Interviewee G finds “geopolitics as a threat because we will have power blocks based upon energy generators, water owners and those who can afford clean air. Air transport will have to plug in to that kind of future”.

A SWOT approach done by individual airlines and governments will certainly highlight some of the major threats facing the industry as well as identify the opportunities. The aviation sector while being quite vulnerable to economic changes has also proved to be among the quickest to recover. Like many other enterprises the sector has many weaknesses but much strength as well. One of the strengths is the nature of the product and the faith that consumers still have in the industry in spite of many failures in the past.

## XVI. THE FUTURE OF THE AIR TRANSPORT WORLDWIDE AND IN SMALL DEVELOPING COUNTRIES

Here I must say that while most of our interviewees were loquacious about Europe, the US and Asia, only Interviewees A and G really had some ideas about Africa. Even then, one could detect in their attitude what some sociologists and anthropologists would rightly or wrongly call ‘afro-pessimism’. All along the interviewees, in spite of several prompters, Africa took a back seat. This is indeed rather surprising as we know that some countries of Africa namely, Kenya, South Africa, Nigeria still have an important place in the European political agendas at the level of individual countries of Europe and the EU.

### a) *Future Developments*

There will obviously be many developments, positive or negative and hopefully more positive than negative ones. The air transport has never been a static industry. The nature of the business and that of international economics and globalization will dictate such developments. Interviewee C spelt out few of these developments that should give faith and hope to the operators again: Global growth and consolidation; development of new niches; he gave the example of Mauritius which he seems to know well where hoteliers and the NTO are looking for more markets. There will be, according to him, a leadership role for Air Mauritius in the region but MK will have to provide a better service comparable in standard to the hotel services in Mauritius which, he says, are excellent.

Interviewee B sees the small developing countries retaining their own airlines and there still continue to be mergers for economies of scale. He

believes that growth will eventually come after the recession but we will not see remarkable growth in the mature markets. Interviewee A also concurs in saying that "there will be no high growth rates. We have reached a certain level of maturity. If you look at the pie chart of air transport, the US will continue to be no.1, Europe no.2 and Asia no.3 and this trend will continue. Globalisation will continue to be a threat to some sectors including aviation". For Interviewee J, there will be "some growth in Europe but more in the emerging markets. The UK market and some other European ones are mature markets. There will be no big growth."

#### *b) Environmental Issues*

This will continue to be on top of the agenda for everybody in the industry but also for governments and other stakeholders. Interviewee C contends that since there is not yet a valid substitute for oil, there will be more control on licensing, noise and carbon emission.

#### *c) Global Alliances*

For Interviewee E, the tendency worldwide will be that of consolidation and global alliances. But no matter how big the carriers are, he says, they still belong to states.

#### *d) Developing Countries*

There is agreement that developing countries will continue to have difficulties in running airlines. As Interviewee E puts it, "it is already difficult for small developing countries to maintain and manage a fleet of aircrafts". Interviewee J also believes that "the developing countries will have to look very hard if it is at all possible to make money from aviation. There is more money to make out of tourism than aviation". An observation is that the poorer the country, the more difficult it is for it to own and manage airlines. Countries like Madagascar, the Comoros and Malawi have had great difficulties to have a stable airline. But Interviewee F takes a slightly different stand. She holds that some stable developing countries will see some growth but some other ones will stagnate. "If you have a viable air service network, it will be important for further economic development", he said. Interviewee G also does not see a great future for Latin America and Africa, Brazil being an exception. "Can't see Africa emerging", he says, "they will be ever dependent on the big two. I could imagine a situation where china decides to invest massively in its civil aviation and doing trade deals with Africa and Latin America in exchange of oil..." But Interviewee I has a more optimistic approach for the developing countries: "The opportunities are there for the developing countries. They can learn from the lessons of Europe and the US and avoid their mistakes. There are opportunities for growth. It's all market dependent. You really have to know and understand your market."

#### *e) Aircrafts Developments and Technology*

As far as aircraft manufacturing is concerned the industry will continue to rely on the big two: Airbus

and Boeing who, according to Interviewee G, will continue to dominate the market as a duopoly like they have done for several years. As far as consolidation is concerned, there is the fear that China, India, Brazil and probably South Africa will team up to make a single block. This was expressed by at least two interviewees, namely Interviewee E and G who even see Russia as part of the block. This is expressed as a geopolitical development by Interviewee G who thinks that "if China becomes a big player (which it already is!), then Russia will also lead in the technology". But according to Interviewee B, "India and China are not really a threat as far as aviation is concerned. The real threat will come from the region of the Middle East. The threat will be more from the Middle East airlines. They have the following advantages: location, their position as intermediate markets and rebate on oil prices". In other words they have a far better competitive edge than any other block.

The industry still has a future if certain measures are taken and the mistakes of the past are not repeated. Future developments in technology will also contribute to the progress of the industry. From an international point of view, the industry will continue to develop in a positive way. Unfortunately, because of the disparity among the various countries especially between the north and the south, growth will also be much skewed. African airlines and some of the Caribbean operators will continue to find it difficult to surf the tide. While the EU has tough laws regarding new aircraft technology, developing countries will continue to operate with old equipment leased or purchased from the ones being gradually phased out of Europe.

## **XVII. THE FUTURE OF DEREGULATION AND LIBERALIZATION FOR THE AVIATION SECTOR**

This is a question to wrap up the interview and to have a general view of what the future has in store for the industry as far as deregulation and liberalization are concerned. Admittedly, it is obvious from the expert interviews and the literature that these had been and continue to be very crucial phenomena for the industry. All of our interviewees held that we have now reached a point of no return for the industry and it has no choice but to continue on this path. For Interviewee J, "this is a political area with much debate and slow progress. The flag carrier concept will still be something smaller countries will cling to for survival. But it's vital that the industry be looked at on a global basis".

#### *a) Re-regulation?*

According to all interviewees the process is now unstoppable and unpreventable. This is confirmed by Interviewee C who just cannot see a return to other forms of regulation or just reregulation. Actually, most of the interviewees see this as an irreversible situation.

Reregulation according to them will only make matters worse. According to Interviewee C, the American airline industry is now in a better position with the new Obama government: "As you can see Obama is saving the car industry and people are saying that if he is saving the car industry, he must be able to save the airline industry". Interviewee B also confirms that "deregulation will continue. The EU is also taking a stand on this. For Interviewee A "the trend will continue and the industry will not go back to regulation. But airlines always operate cartels in one way or the other". Some people contend that since we are in a mess because of regulation, we should go back to regulation. But practically all our interviewees think this is too simplistic a way to look at the situation which should be looked at globally and not in isolation. But Interviewee A points out that "as the economy improves, people will have to pay more to travel". He also mentioned the case of Alitalia whose resilience has been rather amazing. "Alitalia has been the cat with nine lives" he says, "whatever the EU says, they are not going to do away with Alitalia. But smaller companies will have to make some tough decisions. Sometimes it is better to sell when it is still worth something. SAS employs 20,000 people in the Scandinavian countries. The government will have to subsidise only to save jobs". But the point of interviewee F, however, is worth mentioning when she is the only one to say that "the US has gone to the extent it can go now... Regulation could come back. The whole thing may have come full circle. There could be some form of protectionism coming back. Some Europeans have more of a Pan European outlook." For Interviewee G, "it will continue but in a more cautious way. We'll have smart regulation. It will continue but it will be smarter." But for Interviewee I, "we may see an element of reregulation on certain routes that are less viable. Many airlines will not survive under a totally deregulated regime. Apart from that, it is a process that will continue but will probably have to change its nature. The scenario will not be the same any more. But the excitement this time will be outside the US and Europe."

Deregulation and liberalization are both here stay for many more years to come. As mentioned earlier, this is now an irreversible situation. This is a process which all future development will have to reckon with. It is obvious that this is a situation where the fittest will continue to survive. Operators will venture to change threats in to opportunities and weaknesses in to strengths. The developing countries will continue to lag behind and if they cannot beat the situation, they will continue to pull resources with the mega carriers. Mergers and acquisitions will continue with some airlines moving out to make way for new entrants with new technology and new management methods.

## XVIII. CONCLUSION

This interview of the experts in aviation has shown that while air transport used to be glamorous and management was not very concerned about the various issues that may determine the future of civil aviation. It has now become imperative to take stock of the situation. The paradigm has changed and people's mindset also has undergone drastic changes over the decades. The passenger today, apart from being very conscious of their rights to comfortable but cheap travel are also quite touchy about issues of environmental protection, ecology and biodiversity. The increase in the level of carbon emission and global warming has gained conspicuous attention and airline operators and owners will have to rethink their management strategies for the future. This interview also brings up some interesting new ideas for these operators to consider in their future fora.

## REFERENCES RÉFÉRENCES REFERENCIAS

The methodology of this paper did not make provisions for references. However all interviews are based on face-to-face contact and are on audiotapes. This is an edited synthesis of the transcripts of these tapes.



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## Financial Analysis of Cable and Wire Industry 2001-2010 (Case of Pakistan)

By Yasir Hassan, Farooq Shahid, Daniyal Ahmad, Faisal Nadeem, Faizan  
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**Abstract** - The purpose of this study is to analyse the financial data of cable and wire industry over the decade. In this analysis we see that the performance of cable and wire industry with the help of financial data of cable and wire industry from 2001 to 2010. It will do this by the dependent and independent variables like paid-up-capital, sales, profit after tax, assets, equity and number of shares. With the help of graphical representation which will make it easy for us to analyse when the industry was flourishing the most.

**Keywords** : financial data, flourishing, graphical representation.

**GJMBR - A Classification** : FOR Code: 150306, 140209, JEL Code: L63, L94



FINANCIAL ANALYSIS OF CABLE AND WIRE INDUSTRY 2001-2010 CASE OF PAKISTAN

*Strictly as per the compliance and regulations of:*



RESEARCH | DIVERSITY | ETHICS



# Financial Analysis of Cable and Wire Industry 2001-2010 (Case of Pakistan)

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## I. INTRODUCTION

Pakistan is manufacturing good quality and reliable electronic items which meet international quality. The electronic goods manufacturing companies in Pakistan also exports the best quality electronic goods in various countries around the world. It is one of a good profit earning sector in Pakistan. Now a day there is great competition in this industry. Different companies are offering different kinds of goods which are increasing competition in this sector. There are so many kinds of electronic goods that are making a man's life easier day by day. There is also one drawback of electronic items like big machineries that it is creating unemployment all over the world because so many works are done by the machinery and the men are being unemployed. To operate the machinery we also need different kinds of wires which are also manufactured by the industry at a big scale. Different kinds of raw materials are required to make these wire sum of which are imported from different countries. The main raw materials rubber, copper, silver, aluminum etc. some different kinds of wires are stated below:

1. Cold Heading and Forging Wires.
2. Mild Steel Wire.
3. Wire Cloth and Welded Wire mesh.
4. Barbed Wire.
5. Heavily Galvanized Cable Armoring Wire.
6. Stitching Wire.
7. Wire for Industrial Purposes.
8. Fencing.

9. Aluminum Conductor Steel Reinforced.
10. Cycle Spoke Wire.
11. Galvanized Core Wire and Strands for ACSR Conductors.
12. Wire and Wire Products for Reinforcement of Elastomers.
13. Galvanized wire.
14. Prestressed Concrete Wire and Strand.
15. Stainless Steel Wires.
16. Mechanical Spring Steel Wire.

Different wires are required for different machines. Heavy machines are operated with wires with high power wire and small machines are operated with a low power wire. Machineries are also big source of pollution. Environment is getting polluted due the use of different kinds of crude oils. Many organizations are working on it to come over the pollution created by the use of machines.

## II. LITERATURE REVIEW

The industrial segment of the electrical industry has carved out some time-tested methods of distribution. But the flood of new products and the intensified price competition in many lines is threatening established marketing channels. The author discusses the challenge to the middlemen engaged in the distribution of these products. It is less than the span of two lifetimes since Michael Faraday demonstrated the principle of the electric motor. The evolution of Faraday's crude device into the 450,000 KW turbine generators being designed today typifies the growth of the electrical industry. In the United States alone the annual production of electrical goods and equipment of all types is in excess of \$20 billion. The greatest growth has occurred during the last twenty years. Generating capacity in the United States is now four times as great as it was in the mid-thirties, and kilowatt-hour consumption is six times larger. EDWIN H. LEWIS (Cambridge: The Technology Press, Massachusetts Institute of Technology, and New York, John Wiley & Sons, Inc., 1957) [3].

For the purposes of this paper I will consider "distribution" to mean the wholesale or distributing function which is being efficiently, effectively and economically performed today by hundreds of

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organizations in all phases of industry. Inasmuch as my thirty years in business have been devoted to the distribution of electrical equipment I must, therefore, narrow my talk to cover the distribution of electrical supplies and appliances. Basically, however, our business doesn't differ materially from that of other distributors. As a matter of fact, I think it can be said that it typifies better than any other our American system of distribution just as the electrical industry by and large represents a cross-section of all American industry. It is interesting in this connection to note that there is no electrical section of the War Production Board. There is a steel section, a copper section, and so on. The reason there is no electrical section is that in the electrical industry there are represented over fifty other industries from steel to lumber. (HERBERT METZ 1944) [4]

The development of cable television has been subjected to a comprehensive and complex array of federal, state, and local regulations; and many new proposals for regulation are being discussed. This paper attempts a critique of the emerging pattern of regulation. The author analyzes the major policy choices and concludes that only limited regulation can be justified. He proposes a new federal statute that would carefully delimit the respective roles of federal, state, and municipal regulators of cable television. The government has not left development of cable television to the free market. Extensive regulation of rates, programs, ownership, and other facets of cable television service has been proposed and, in large measure, already implemented. A critique of the emerging pattern of regulation would seem to be timely. (Richard A. Posner 1972) [5]

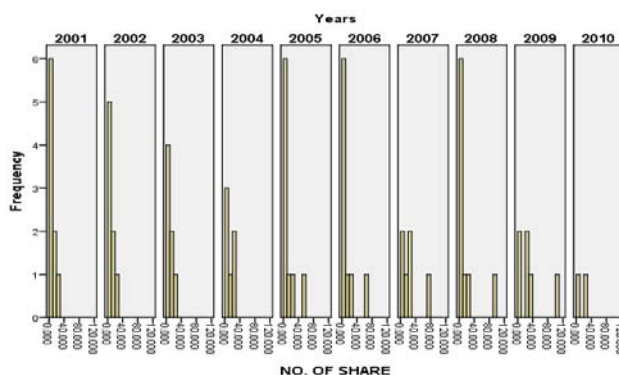
### a) Empirical Results

To analyse the no. of share we use histogram. Histogram is one of the basic tools to show the graphical analysis.

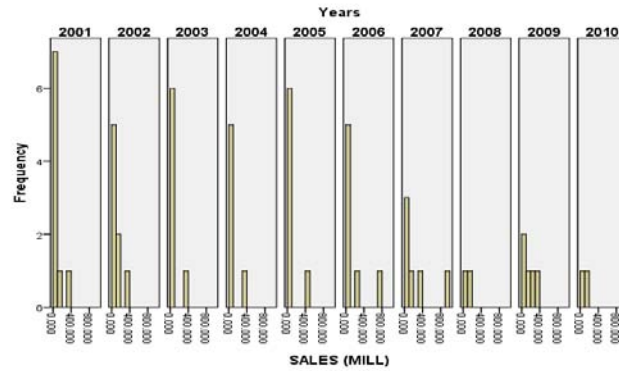
Transitional corporations (TNCs) are producing an ever greater share of the world's output of electrical goods. They also account for a very large share of the international trade in such goods, much of which is on an inter-firm basis. A study prepared at the request of the UNCTAD Secretariat by, Richard S Newfarmer examines how the behavior of TNCs in the electrical industry affects the development and trade of developing countries. ("The International Market Power of Transnational Corporations: A Case Study of the Electrical Industry" by Richard S Newfarmer; UNCTAD/ST/MD/13.) Excerpts from the summary and conclusions of the study are reproduced below. The general objective of this study has been to show how electrical trans-national conglomerates mobilize and use economic power in international and foreign markets and to understand its effects upon developing countries. In particular, it has focused attention on formal and informal interdependent behavior whereby concerted market tactics and uneasy oligopolistic equilibriums replace vigorous price competition in many markets. (Economic and Political Weekly) [6]

## III. METHODOLOGY

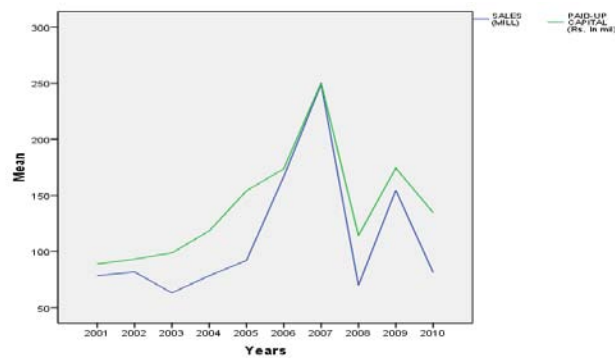
First of all we collected financial data from kse site and applied different tests on it. In this study ANOVA is used for comparing the means of different variable from year 2001 to 2009. Different types of tests. Through anova test we compared the variables of different years from 2001 to 2010. Least significance difference test is applied to compare means of different years. We also applied multiple regression test to predict the dependent and independent variables.



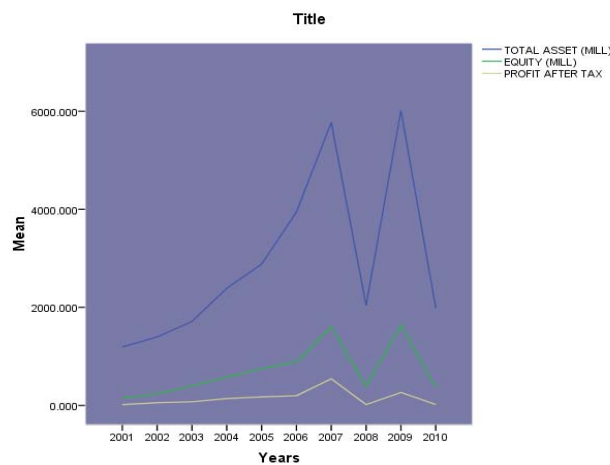
This graph show us that no. of share has a major down fall. From year 2009 cable and wire industry faced crises.



From year 2006 sales of industry has decline. But in year 2005 sales at his highest point.



This area chart shows us the Paid-up-capital is slightly increase from 2001 to 2003 and significant increase come in 2003 to 2006 after that there is huge increase come at year 2007. But in that period Paid-up-capital at very low from year 2007-2008 and in 2009 it have increased and in current situation its declining. Compare to that behaviour of sales is little bit different in few years. From year 2001-2005 sales at its decline point.



This line chart show us three variables. This graph show us that profit after tax has zero or less than zero mean by decline all of the years. Equity has slightly more than zero mean and total assets are low from the very beginning but suddenly decrease in year 2007 and rise in period 2008-2009.

## PAID-UP CAPITAL (Rs. In million)

Years	Standard Deviation	Mean	Coefficient of Variation
2001	67.167	88.870	75.579
2002	70.471	93.167	75.639
2003	75.432	98.621	76.487
2004	86.813	118.342	73.358
2005	163.575	124.487	131.399
2006	201.274	173.845	115.777
2007	261.700	250.322	104.545
2008	350.456	254.949	137.461
2009	376.527	323.199	116.500
2010	113.224	134.562	84.143
TOTAL	176.664	166.036	106.4006503

Paid Up Capital was consistent in 2004. Coefficient of Variation is applied for checking the consistency level.

## NO. OF SHARE

Years	Standard Deviation	Mean	Coefficient of Variation
2001	6.717	8.887	75.579
2002	7.047	9.317	75.639
2003	7.543	9.862	76.487
2004	8.681	11.834	73.358
2005	16.357	12.449	131.399
2006	19.042	13.521	140.830
2007	26.170	25.032	104.545
2008	30.498	16.997	179.435
2009	37.653	32.320	116.500
2010	11.322	13.456	84.143
TOTAL	17.10307231	15.367	111.2938713

No. of share is consistent in 2004 just as Paid –up-capital.

## EQUITY (MILL)

Years	Standard Deviation	Mean	Coefficient of Variation
2001	521.074	150.395	346.469
2002	650.548	233.843	278.199
2003	684.637	399.364	171.432
2004	816.125	579.997	140.712
2005	1120.131	746.723	150.006
2006	1256.104	885.362	141.875
2007	2197.657	1608.891	136.595
2008	374.694	386.015	97.067
2009	2966.143	1631.642	181.789
2010	507.196	360.172	140.821
TOTAL	1109.430947	698.2404763	158.8895208

Equity is consistent in year 2008.

## TOTAL ASSETS(MILL)

Years	Standard Deviation	Mean	Coefficient of Variation
2001	1554.664	1191.636	130.465
2002	1742.658	1395.243	124.900
2003	2177.074	1712.484	127.130
2004	2758.343	2389.045	115.458
2005	3497.809	2882.721	121.337
2006	4972.652	3943.708	126.091
2007	7131.222	5773.443	123.518
2008	1845.745	2040.762	90.444
2009	10256.642	6011.196	170.626
2010	2339.898	1986.392	117.796
TOTAL	3827.670659	2932.662895	130.5186036

Total assets are consistent in year 2008 same as equity.

## SALES (Million)

Years	Standard Deviation	Mean	Coefficient of Variation
2001	1424.215	1028.920	138.418
2002	1634.998	1263.856	129.366
2003	2094.101	1671.006	125.320
2004	2860.852	2467.958	115.920
2005	4854.023	3442.194	141.015
2006	7288.295	4983.312	146.254
2007	8557.154	6752.809	126.720
2008	2527.801	2007.524	125.916
2009	15598.602	8352.036	186.764
2010	2596.260	1963.014	132.259
TOTAL	4943.630082	3393.262941	145.6895669

Sales are consistent in year 2004.

## PROFIT Before TAX

Years	Standard Deviation	Mean	Coefficient of Variation
2001	156.433	36.532	428.214
2002	194.044	76.188	254.690
2003	226.938	125.832	180.350
2004	294.858	196.711	149.894
2005	451.578	273.439	165.147
2006	554.596	333.992	166.050
2007	1351.775	757.335	178.491
2008	279.885	133.088	210.300
2009	864.412	459.536	188.106
2010	41.741	22.791	183.145
TOTAL	441.6260054	241.5444775	182.8342382



Profit before tax is consistent in year 2004.

#### PROFIT After TAX

Years	Standard Deviation	Mean	Coefficient of Variation
2001	114.224	16.924	674.921
2002	156.482	54.761	285.753
2003	134.157	73.476	182.587
2004	166.759	138.117	120.738
2005	298.528	172.765	172.795
2006	287.412	197.426	145.580
2007	970.588	541.963	179.087
2008	200.301	99.558	201.191
2009	557.506	290.062	192.202
2010	37.861	18.734	202.100
TOTAL	292.3820596	160.3785665	182.3074405

Profit after tax is consistent in year 2004.

#### ANOVA<sup>9</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	7.581E5	8	94768.711	62.562	.001 <sup>a</sup>
Residual	6059.232	4	1514.808		
Total	7.642E5	12			
2 Regression	7.581E5	7	108303.187	88.968	.000 <sup>b</sup>
Residual	6086.612	5	1217.322		
Total	7.642E5	12			
3 Regression	7.580E5	6	126337.515	122.582	.000 <sup>c</sup>
Residual	6183.827	6	1030.638		
Total	7.642E5	12			
4 Regression	7.579E5	5	151578.725	168.013	.000 <sup>d</sup>
Residual	6315.295	7	902.185		
Total	7.642E5	12			
5 Regression	7.569E5	4	189237.026	208.502	.000 <sup>e</sup>
Residual	7260.815	8	907.602		
Total	7.642E5	12			
6 Regression	7.541E5	3	251375.599	224.395	.000 <sup>f</sup>
Residual	10082.123	9	1120.236		
Total	7.642E5	12			

## b) Hypothesis

## i. Sales

$H_0: \mu_{2001} = \mu_{2002} = \mu_{2003} = \mu_{2004} = \mu_{2005} = \mu_{2006} = \mu_{2007} = \mu_{2008} = \mu_{2009} = \mu_{2010}$

$H_1$ : At least one mean is significantly different

## ii. Profit After Tax

$H_0: \mu_{2001} = \mu_{2002} = \mu_{2003} = \mu_{2004} = \mu_{2005} = \mu_{2006} = \mu_{2007} = \mu_{2008} = \mu_{2009} = \mu_{2010}$

$H_1$ : At least Two mean is significantly different

Since the p-value is less than 0.05 for sales, it means the null hypothesis will be rejected in the favour of alternative hypothesis in other words we are going to  $H_0$

and reject  $H_1$ . Similarly Sales, Equity, Total Assets and have the p-values which amount is less than 5%.

Paid-Up-Capital, No. OF SHARE, PROFIT BEFORE TAX and PROFIT AFTER Tax showing no differences in their means since 2001 to 2010.

The least significance difference test (LSD) is applied for checking that which year's mean is significantly different from each other.

The least significance difference test (LSD) is applied for checking that which year's mean is significantly different from each other.

Paid up Capital  
LSD

Years (I)	Years(J)	Mean Differences	Sig.
2001	2009	-234.32816666666668	.032
2002	2009	-230.031875	.039
2003	2009	-224.57721428571432	.050
2004	2009	-204.85616666666667	.084
2005	2009	-198.7115	.067

According to LSD test it can be observed that the mean value of year 2001 and 2010 is significantly different. It verifies with p-value which is less than 0.05.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	161.733	11495.735		.014	.989
NO. OF SHARE	.025	7.040	.001	.003	.997
EQUITY (MILL)	-.789	.643	-.314	-1.227	.244
TOTAL ASSET (MILL)	.273	.212	.374	1.289	.222
(BANK) / FINANCIAL CHARGES	11.795	6.342	.359	1.860	.088
TAXATION	6.189	3.469	.619	1.784	.100
PROFIT AFTER TAX	-.541	.847	-.128	-.639	.535
CASH DIVIDEND	93.416	103.034	.287	.907	.382
CODES = 5 (FILTER)	-10.194	27.583	-.056	-.370	.718
2 (Constant)	196.430	5521.657		.036	.972
EQUITY (MILL)	-.790	.519	-.314	-1.521	.152
TOTAL ASSET (MILL)	.274	.153	.375	1.792	.096
(BANK) / FINANCIAL CHARGES	11.778	3.711	.358	3.173	.007

	TAXATION	6.198	2.172	.620	2.854	.014
	PROFIT AFTER TAX	-.542	.739	-.129	-.733	.476
	CASH DIVIDEND	93.126	58.265	.286	1.598	.134
	CODES = 5 (FILTER)	-10.182	26.299	-.056	-.387	.705
3	(Constant)	673.052	5216.693		.129	.899
	EQUITY (MILL)	-.903	.416	-.359	-2.171	.048
	TOTAL ASSET (MILL)	.304	.127	.416	2.390	.031
	(BANK) / FINANCIAL CHARGES	11.470	3.513	.349	3.265	.006
	TAXATION	6.135	2.099	.613	2.923	.011
	PROFIT AFTER TAX	-.505	.711	-.120	-.711	.489
	CASH DIVIDEND	83.201	50.709	.256	1.641	.123
4	(Constant)	754.171	5128.770		.147	.885
	EQUITY (MILL)	-.973	.397	-.387	-2.449	.027
	TOTAL ASSET (MILL)	.322	.123	.441	2.623	.019
	(BANK) / FINANCIAL CHARGES	11.412	3.454	.347	3.304	.005
	TAXATION	5.156	1.558	.516	3.310	.005
	CASH DIVIDEND	82.729	49.862	.254	1.659	.118
5	(Constant)	5557.157	4459.606		1.246	.231
	EQUITY (MILL)	-.899	.416	-.358	-2.161	.046
	TOTAL ASSET (MILL)	.253	.122	.346	2.080	.054
	(BANK) / FINANCIAL CHARGES	9.752	3.482	.296	2.800	.013
	TAXATION	7.137	1.054	.714	6.772	.000

a. Dependent Variable: SALES (MILL)

Now the model can be written as:

Sales =  $b_0 + b_1(\text{Bank}) / \text{Financial Charges} + b_2 \text{ Profit After Tax} + b_3 \text{ Equity} + b_4 \text{ No. of Shares}$   
 Backward method is used in multi linear regression for

this model.

Model is showing that total asset, bank charges and profit after tax are best describing the sale.

#### ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
PAID-UP CAPITAL (Rs. In mil)	Between Groups	3.949E5	9	43873.390	1.079	.393
	Within Groups	2.278E6	56	40678.726		
	Total	2.673E6	65			

FACE VALUE	Between Groups	.000	9	.000		
	Within Groups	.000	61	.000		
	Total	.000	70			
NO. OF SHARE	Between Groups	3.360E3	9	373.329	.928	.508
	Within Groups	2.455E4	61	402.461		
	Total	2.791E4	70			
EQUITY (MILL)	Between Groups	1.514E7	9	1681870.816	.936	.503
	Within Groups	8.801E7	49	1796130.304		
	Total	1.031E8	58			
TOTAL ASSET (MILL)	Between Groups	1.644E8	9	1.827E7	.884	.546
	Within Groups	1.013E9	49	2.067E7		
	Total	1.177E9	58			
(BANK) / FINANCIAL CHARGES	Between Groups	3.284E8	9	3.648E7	.934	.505
	Within Groups	1.915E9	49	3.908E7		
	Total	2.243E9	58			
SALES (MILL)	Between Groups	1.921E5	9	21343.694	.613	.780
	Within Groups	1.707E6	49	34826.766		
	Total	1.899E6	58			
PROFIT BEFORE TAX	Between Groups	2.806E6	9	311732.220	.946	.494
	Within Groups	1.746E7	53	329427.419		
	Total	2.027E7	62			
TAXATION	Between Groups	4.165E5	9	46282.402	1.342	.235
	Within Groups	2.103E6	61	34483.570		
	Total	2.520E6	70			
PROFIT AFTER TAX	Between Groups	1.374E6	9	152677.756	1.014	.441
	Within Groups	7.979E6	53	150553.873		
	Total	9.353E6	62			
CASH DIVIDEND	Between Groups	1.511E5	9	16785.526	.394	.933
	Within Groups	2.301E6	54	42607.561		
	Total	2.452E6	63			
STOCK DIVIDEND	Between Groups	2.226E3	9	247.340	1.227	.299
	Within Groups	1.068E4	53	201.541		
	Total	1.291E4	62			

TOTAL DIVIDENT	Between Groups	1.068E5	5	21367.130	.372	.864
	Within Groups	2.009E6	35	57409.083		
	Total	2.116E6	40			
No. of SHARE HOLDER	Between Groups	1.025E5	2	51263.095	.107	.900
	Within Groups	5.277E6	11	479718.788		
	Total	5.379E6	13			

Sales is considered as a dependent variable while Equity, Total Asset, Paid-Up Capital and No. of Share, Profit After Tax are independent/explanatory variables.

In results, Sales (dependent) and Bank / Financial Charges, Equity, Profit After Tax, Total Asset, Paid-Up Capital and No. of Share are independent variables, with the help of backward method sales is best described by (Bank) / Financial Charges, No. of Shares, Equity, Profit After Tax. And these have positive effect on Sales.

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#### IV. CONCLUSION

Using the analysis the cable and wire industry we came up with the different conclusion and results. Research study shows us the cable and wire industry has decrease. Many of the company which is working from a long time become default because of few companies in Pakistan industry making huge profits taking the opportunity of monopoly. Using the data of decade we find out cable and wire industry profit before tax and after tax has increased. Graphical representation show us how can we make more good decisions in future production.

There are few safety protocol involve with the wire industry which are needed to be over looked. Because of few companies in Pakistan industry there is not much of a perfect computation in current market. So that why government has to focus on wire industry because of major elercity company like WAPDA needed huge quantity of wire since the WAPDA in nationalize so wire cost them for chant. If government focused on wire and cable industry it makes them cheap wire in high quality. Than cable and wire industry will grow.

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# Le management du coût social de la restructuration du secteur public: des lignes de conduite pour les pays Africains

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**Résumé** - Cet article traite la manière selon laquelle l'État doit gérer les effets sociaux associés à la privatisation des entreprises publiques (EP). Dans les pays africains un tel sujet prend beaucoup plus d'ampleur et d'importance étant donné que les conditions sociales de base sont d'ores et déjà si dégradées et si critiques (pauvreté, chômage, inégalité, etc.). Dans de telles circonstances le gouvernement est invité à jouer deux rôles fondamentaux, primo cerner les effets sociaux liés à la privatisation du secteur public et secundo alléger les coûts sociaux que supportent les individus ou les groupes d'individus suite à ladite privatisation. De même le gouvernement doit veiller à ce que son intervention soit efficace économiquement afin de permettre au processus de privatisation et de restructuration des EP d'atteindre ses objectifs escomptés.

**Mots clés** : Privatisation, emploi, efficacité.

**GJMBR - A Classification** : FOR Code: 150312 JEL Code: L32, L52



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**Mots clés :** Privatisation, emploi, efficacité

## *The management of the social cost of the restructuring of the public sector: lines of conduct for the African countries*

**Abstract :** This article discusses the manner in which the state should manage the social effects associated with the privatization of public enterprises (PE). In African countries such a subject is much larger in scale and importance as the basic social conditions are already so degraded and so critical (poverty, unemployment, inequality, etc.). In such circumstances the Government is invited to play two roles, firstly identify the social effects related to the privatization of public sector and secondly reduce the social costs borne by individuals or groups of individuals following the privatization. Similarly, the Government must ensure that its intervention is economically efficient to allow the process of privatization and restructuring of the EP to achieve its objectives.

**Keywords :** Privatisation, employment, efficacy.

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## I. INTRODUCTION

Durant les trois dernières décennies, la privatisation des entreprises publiques (EP) a connu un essor remarquable touchant aussi bien les pays développés qu'en voie de développement. Ceci s'explique par le fait que la privatisation ne soulève plus, à l'heure actuelle, les mêmes risques et les mêmes soucis que craignaient auparavant soit les gouvernements ou les différents groupes socio-économiques. De nos jours, il existe une conviction quasi unanime qui stipule que la privatisation n'est plus fondée sur des raisons idéologiques ou théoriques, mais plutôt sur des raisons pragmatiques. Autrement dit, il est devenu clair que la privatisation est, l'une des principales politiques économiques, qui remédie et amoindrit les difficultés du secteur public ; ce constat n'a cessé de se consolider depuis le déclenchement de la crise d'endettement de 1982 qui a mis l'accent sur la réalité selon laquelle le secteur public est la cause fondamentale des différents déficits et déséquilibres macro-économiques (déficit commercial, déficit budgétaire etc.).

Et bien que la privatisation<sup>2</sup> ait commencé dans les pays développés, ceux en voie de développement n'ont pas tardé à s'aligner avec la tendance mondiale prônant le libéralisme économique et la privatisation du secteur public comme des stratégies motrices à tout développement. Ce mouvement d'ensemble s'expliquait, par deux raisons fondamentales. D'une part, la conscience accrue, de ces pays, des problèmes et difficultés de leurs modèles de développement basés sur l'interventionnisme étatique et la planification centralisée. D'autre part, il est devenu clair que les problèmes du secteur public ont atteint un seuil critique où il fallait adopter des changements structurels surtout dans un environnement mondial caractérisé par l'intensification de la concurrence nationale et internationale.

Toutefois, il est important de remarquer qu'au-delà du simple transfert de la propriété publique aux investisseurs privés, plusieurs objectifs sont visés et maintes contraintes sont soulevées. Au niveau des

objectifs nous pouvons citer, à titre illustratif et non exclusif, que la privatisation permet l'augmentation de l'efficacité aussi bien de l'économie en sa globalité (aspect macro-économique) que celle des entreprises privatisées (aspect micro-économiques). Également, elle contribue à la rationalisation du comportement de l'État en vue d'une utilisation économique des ressources publiques rares. De même, la privatisation massive d'entreprises d'État peut constituer une occasion par excellence à la création d'une dynamique concurrentielle. Parallèlement à ces objectifs il est supposé, également, que la privatisation risque de produire des contraintes qu'il faut prendre en considération pour réussir le processus du changement. Il s'agit principalement des contraintes sociales (licenciement, baisse des salaires, pauvreté, accroissement des inégalités etc.), financières (marchés financiers peu développés, absence d'investisseurs stratégiques, problèmes d'évaluations des actifs privatisables etc.) et politiques (troubles sociaux, la perte de l'appui politique du grand public, les revendications syndicales etc.).

A ce niveau d'analyse notons que les objectifs recherchés et les contraintes soulevées ne sont pas identiques pour tous les pays. Autrement dit, la fixation, a priori, des objectifs doit tenir compte essentiellement des caractéristiques économiques, politiques et sociales du pays. De même, l'intensité des contraintes et leurs importances pour les décideurs politiques ne peuvent pas faire l'objet d'une unanimité parce qu'elles sont largement dépendantes du niveau de développement du pays aussi bien, sur le plan économique qu'institutionnel. Par conséquent, il serait difficile de s'accorder sur un modèle de privatisation pré- établie étant donné que chaque pays constitue un cas particulier par rapport aux autres.

Ainsi, vu cette forte dispersion au niveau des pays, le sujet de la privatisation a été étudié sous différents angles et facettes sans aboutir à une ligne de conduite unique. Les querelles sur ses causes, ses conséquences, ses techniques et ses effets sociaux et économiques restent jusque là viable. Et même les théories qui ont essayé de dégager des réponses sont restées encore loin de susciter l'accord universel des chercheurs et des investigateurs dans le domaine économique. Ces divergences théoriques s'expliquent essentiellement par la nature même de la problématique de la privatisation qui se trouve imbriquée au sein de la problématique de l'État toutes les fois qu'elle (c'est-à-dire la privatisation) signifie le recul et l'amoindrissement du rôle de l'État dans la vie économique. Conséquemment et du fait que le rôle de l'État et sa taille optimale constituaient, jusque là, des sujets de

débats entre les économistes, il paraît logique qu'il y aura une transposition de ce débat au niveau de la problématique de la privatisation.

Dès lors, du moment que le sujet de l'État n'a pas convergé vers une unanimité scientifique au niveau de sa taille et de son rôle économique, il est, a priori difficile de penser que la privatisation aboutira à une telle unanimité malgré l'ample effort qu'avaient fourni les institutions financières internationales pour que tous les pays aient une conviction ferme aux bienfaits des politiques de privatisations. Mais, en dépit de toutes ces divergences, la réalité actuelle paraît être rassurante pour les partisans du libéralisme économique et de la supériorité de la régulation marchande par rapport aux autres formes de régulation économique. La privatisation se mondialise dans un cadre spatio-temporel sans précédent, ouvrant les portails à une restructuration économique des secteurs publics, une réallocation de ressources productives, des mutations sectorielles et à de nouvelles politiques de réglementation. Toutefois, le succès relatif qu'a connu la privatisation au niveau économique n'était pas souvent accompagné par le même succès au niveau social. Ce constat nous permet de poser la question suivante : la privatisation est- elle par essence anti- sociale ? La réponse à cette question est, multidimensionnelle, étant donné que si les économistes s'accordaient sur l'effet négatif de la privatisation sur l'emploi, dans le très court terme, ils se désaccordent sur le sens de cette relation dans le moyen et le long terme (effet dynamique).

Sur le plan théorique nous notons que la littérature économique penchant sur la privatisation et malgré sa richesse quantitative, comme le témoigne le nombre important d'ouvrages et d'articles et de rapports, souffre, cependant, de trois problèmes essentiels. Primo, cette littérature ne s'est intéressée guère à la relation privatisation - emploi comparativement aux multiples études qui se sont penchées sur l'étude de la relation privatisation - efficacité. Cette asymétrie d'intérêt traduit la volonté de maintes institutions internationales que de chercheurs académiques à l'exaltation des bienfaits des politiques de privatisation sur l'efficacité tout en fermant les yeux sur ses retombées sociales tout et en les considérant comme éphémères ou à la limite comme le « juste » coût de l'inefficacité productive et allocative de l'EP. Cependant, la réalité ne s'accorde pas, souvent, avec cette thèse étant donné que la négligence des effets négatifs de la privatisation sur l'emploi et la non- prise en compte des mesures économiques pour les alléger risquent de menacer le processus de restructuration et par conséquent de retarder ou même annuler les objectifs visés. Il s'ensuit que l'évaluation simultanée, de ces deux relations, paraît une action fondamentale pour connaître les différents aspects qui caractérisent les politiques de privatisation.

<sup>2</sup>Selon BOS. D [1991] la privatisation se définit comme étant le transfert d'actifs détenus par des agents publics au profit d'agents privés. Selon Cook et Kirkpatrick, [1995] elle se définit comme le transfert d'avantages productifs du secteur public au secteur privé

Secundo, nous remarquons que la majeure partie des travaux empiriques est caractérisée essentiellement par leurs grandeurs macro-économiques ce qui n'a pas permis de savoir lesdits effets au niveau des entreprises individuelles. De plus, les études concernées ont penché sur une analyse ponctuelle et instantanée ne couvrant, généralement, que l'année durant laquelle la privatisation a été déclenchée. Toutefois, ce type d'analyse peut fausser la réalité, étant donné, qu'il faut opter pour une vision dynamique qui peut quantifier les effets des politiques de privatisation dans le temps.

Tertio, outre les deux problèmes ci-dessus mentionnés, nous remarquons que la quasi-totalité de la littérature existante s'est intéressée à un groupe spécifique de pays (pays développés, ex pays socialistes, pays de l'Amérique latine) ; toutefois les études sur les pays africains et arabes sont encore rares et loin de répondre aux principales questions connotées aux politiques de privatisation.

Le présent travail ne constitue pas une réponse systématique à toutes les critiques que nous avons exposées mais plutôt une simple réflexion portant sur une analyse théorique des conséquences sociales de la privatisation (Section II) et une taxinomie des principales lignes de conduite qu'un gouvernement peut suivre afin d'alléger l'intensité du coût social que subi la communauté (section III).

## II. LES CONSÉQUENCES SOCIALES DE LA PRIVATISATION

Dans les pays africains l'État a contribué fortement dans les domaines sociaux et économiques afin de réduire les inégalités, la pauvreté et augmenter le bien être social. En effet, l'action de l'État dans le domaine social a porté, essentiellement sur la lutte contre le chômage, l'établissement d'une couverture sociale, l'augmentation des revenus salariaux et la protection des classes pauvres et démunies. En revanche, il est fort probable que lors de la privatisation des entreprises publiques, les avantages sociaux ci-dessus mentionnés disparaîtront quand celles-ci deviendront privées tout en cédant la place à d'autres opportunités qui se créent. Ceci veut dire qu'il y aura une nouvelle répartition de la richesse qui peut être l'origine d'une dégradation du « bien être » d'un ou plusieurs groupes sociaux. A ce stade, l'action de l'État paraît primordiale pour contrecarrer les effets ou l'impact de ceux qui perdent leur « ex - bien être ». Mais, il est toutefois à remarquer que l'impact de la nouvelle répartition de la richesse (généré par la privatisation des entreprises publiques) sur les groupes sociaux dépend, dans une large mesure, de plusieurs facteurs qui concernent la situation financière de l'entreprise sujette de privatisation; les méthodes de la privatization

(privatisation interne, privatisation externe ou privatisation de masse), les conditions macro-économiques, la vitesse de la privatisation... etc.

Ceci nous confirme l'idée selon laquelle l'étendu de l'impact social ne peut pas se faire dans le cadre d'un modèle général et pré - établi mais plutôt dans le contexte d'études concrètes portant sur le cas par cas. Toutefois, il est possible d'analyser les idées communes qui interviennent généralement dans un processus de privatisation.

D'une manière générale l'EP est liée directement ou indirectement à certains groupes qui bénéficient probablement de ses actions économiques et sociales. A titre illustratif et non exclusif nous pouvons citer les travailleurs, les consommateurs<sup>3</sup>, les fournisseurs et parfois même l'État. Conséquemment, après sa privatisation l'ex E P connaîtra probablement un changement au niveau de la gestion et qui devra être en conformité avec les nouvelles données et contraintes qui surgissent et dont la plus importante l'absence du soutien et de la tutelle de l'État. En d'autres termes, les nouveaux acquéreurs soucieux de rentabiliser leur entreprise vont essayer d'agir afin d'accroître aussi bien son efficacité productive qu'allocative. Du côté de l'efficacité productive, les nouveaux propriétaires essaient de maîtriser leurs structures du coût afin de maximiser le profit. D'un autre côté, pour augmenter l'efficacité allocative (défini à l'optimum comme l'égalité entre le coût marginal et le prix du marché  $C_m = P$ ), les nouveaux acquéreurs vont allouer les ressources productives de telle façon que la productivité marginale des facteurs soit la plus élevée possible.

Cette nouvelle stratégie basée sur le critère « d'efficacité économique » est à l'origine de l'impact social. Ce dernier est plus ou moins opérant à travers le temps dans la mesure où il engendre des effets immédiats et des effets à plus ou moins long terme, tout dépend de la nature et de la manière de la réaction des différents agents économiques. Par ailleurs, et comme le souligne V.V. Ramanadham (1994) l'impact de la privatisation dépend, en large mesure, de la taille du secteur public privatisé. En effet, trois cas sont envisageables :

### a) *Une seule entreprise publique est privatisée*

Dans ce cas, l'impact est jugé faible donc supportable avec l'hypothèse que le poids de l'entreprise privatisée sur le reste de l'économie est faible (il ne s'agit pas d'une entreprise publique en situation de monopole, ou évoluant dans un secteur stratégique).

Ceci nous révèle la réalité selon laquelle l'impact social de la privatisation peut ne pas être contraignant si le nombre des privatisées est faible et que leur poids l'est aussi. En revanche, la réalité est beaucoup plus complexe parce que la situation macro-économique nécessite parfois une justesse totale et

<sup>3</sup>Ceux qui consomment le produit de l'EP.

une privatisation de masse. Cette dernière peut constituer un souci pour les pouvoirs publics vu que cela engendre un processus cumulatif d'effets sociaux. Si nous considérons une seule entreprise à privatiser, nous pouvons dire que les travailleurs et l'État seront touchés directement et instantanément. Les travailleurs, subissent probablement un licenciement (total ou partiel) qui précède ou accompagne le changement de la nature de la propriété. Quant à l'État, son budget sera renfloué par les recettes de vente de l'entreprise, mais il supportera directement ou indirectement certains coûts tels que les coûts financiers (coût de l'assainissement financier, coût de dégageant de personnel...etc.).

Pour les autres groupes, qui sont reliés à l'ex EP (consommateurs, fournisseurs...etc), l'effet attendu ne sera significatif qu'à plus ou moins long terme. En effet il faut attendre une période de temps pour que ces effets surgissent à travers les prix, la demande des « inputs », le niveau de la production ...etc.

*b) Toutes les entreprises publiques appartenant à un secteur économique sont privatisées*

Lorsqu'un secteur entier est privatisé, l'impact semble être considérable et multi- directionnel. D'une part, il peut y avoir un changement total au niveau des pratiques et de la rationalité des entreprises de ce secteur (en cherchant d'être plus efficace). Mais il est toutefois à remarquer qu'à ce niveau d'analyse se pose le problème des secteurs qui doivent être privatisé en premier lieu ainsi que le critère de ce choix. En effet, selon M. Husain et R. Sahay , il vaut mieux privatiser tout d'abord les petites entreprises pour au moins deux raisons fondamentales : étant donné qu'elles ne constituent pas une contrainte pour le bon déroulement du processus (nous pouvons trouver suffisamment de demandeurs pour les actions privatisées d'une petite entreprise mais probablement pas lorsqu'il s'agit d'une grande entreprise).

- Il est plus pratique dans le cas d'absence d'un marché financier développé de commencer par la privatisation des petites entreprises étant.

- Ce type de privatisation peut amener à une distribution plus équitable des entreprises à privatiser.

Les deux auteurs, ci-dessus mentionnés, avancent, encore que le secteur qui doit être privatisé avant l'autre doit par conséquence fournir et générer le plus des gains en efficacité allocative. Il s'agit en effet des secteurs qui ont quelques difficultés financières et qui gagnent de la propriété privée surtout lorsqu'ils ont les capacités pour réagir aux chocs auxquels ils font face.

Par voie de conséquence lorsqu'un secteur en difficulté est privatisé alors ceci signifie que l'impact social sera plus étendu par rapport au cas où (une seule entreprise est privatisée)

*c) La totalité ou la majorité des entreprises publiques sont privatisées*

Lorsque nous étudions l'impact social de la totalité des privatisations, il faut tenir compte de deux variables additionnelles. La première concerne le changement au niveau de la politique budgétaire étant donné que le budget de l'État sera alimenté en grande partie par des ressources supplémentaires. De plus, certaines dépenses cessent telles que (subventions d'équipement, subventions d'exploitation ...etc.); ceci peut être une source de redistribution par le budget de l'État favorisant ou défavorisant les autres agents économiques. La deuxième variable concerne le transfert des profits et des bénéfices en faveur des nouveaux propriétaires des entreprises privatisées quand celles-ci sont bénéficiaires. Cela signifie, par conséquent, qu'une nouvelle politique de redistribution de revenu est appliquée et qu'il faut donc cerner ses impacts dans un processus de privatisation.

A ce stade d'analyse une question se pose : Quelles sont les composantes du coût social ? Pour répondre à cette question il faut tout d'abord déterminer la nature des groupes sociaux qui sont généralement touchés par un processus de restructuration ou privatisation. Il s'agit essentiellement de .

- L'État (c'est un groupe social homogène ayant des objectifs précis dans un processus de privatisation),
- Les investisseurs (acheteurs et acquéreurs des EP),
- Les salariés,
- Les consommateurs.

*i. Impact sur l'État*

Lorsque le gouvernement se déclare comme vendeur de ses actifs publics une question fondamentale se pose portant sur la valeur de cessation de l'entreprise au privé et qui soulève le problème d'évaluation convenable des actifs et des passifs de l'entreprise. En effet, lorsque la valeur de cessation est inférieure à la valeur réelle des actifs de l'entreprise alors le gouvernement enregistre un manque à gagner, conséquemment les acquéreurs profitent de cet écart. Sur le plan pratique, il s'est avéré difficile de montrer ou de prouver si le prix de vente de l'entreprise lèse ou non la communauté étant donné que dans certains cas de privatisation interne ou externe l'État distribue soit gratuitement ou à des prix bonifiés des parts de capitaux à des groupes particuliers d'acquéreurs (salarié, public...etc.). D'un autre côté, le problème de l'évaluation de l'entreprise à privatiser se complique davantage par l'absence ou l'insuffisance d'un marché de capitaux où nous pouvons trouver des critères de référence pour l'évaluation réelle de l'actif de l'entreprise publique à privatiser.

Par conséquent l'inconvénient majeur du sous évaluation des entreprises privatisées est qu'elle prive l'État des ressources supplémentaires de revenus qui auraient du renflouer son budget. D'un autre côté, l'État se débarrasse des charges financières de ses entreprises publiques déficitaires et peut les réinvestir dans des utilisations plus opportunes.



Toutefois, lorsqu'il s'agit de la privatisation des entreprises publiques bénéficiaires alors l'État risque de perdre des ressources financières importantes en faveur du secteur privé. Mais si ceci ne pose pas de graves problèmes lorsque la cession des EP se fait au profit des investisseurs nationaux alors dans le cas contraire la privatisation peut devenir problématique. En effet, lorsque l'investisseur national rachète une EP rentable l'État et la communauté peuvent tirer profit indirectement par le biais des impôts ou des investissements ultérieurs qu'il compte faire. Toutefois, le comportement des investisseurs étrangers est difficile à cerner étant donné qu'ils peuvent mener une action opportuniste qui les pousse à réinvestir ailleurs. Un tel constat est très fréquent dans les pays africains où les investisseurs étrangers ont faiblement contribué dans le développement et la croissance et sont contents d'exploiter des opportunités économiques.

## ii. *L'impact sur les investisseurs*

Parmi les questions qui accompagnent tout programme de privatisation, nous pouvons avancer les deux suivantes : A qui vendre ? Quelle est l'affectation optimale du capital de l'entreprise privatisée ?

En réalité les réponses à ces deux questions sont difficiles et compliquées à exposer parce qu'elles dépendent des objectifs recherchés et non soumises à des considérations d'efficacité ou d'efficience. Également elles devront être traitées en termes d'avantages coûts et non en termes d'évaluation absolue.

La privatisation de masse a été largement utilisée dans les ex pays socialiste et ce afin de familiariser les citoyens avec le passage brusque à l'économie de marché sans pour autant réfléchir sur l'efficacité de ces politiques. Sur le plan de la gouvernance une telle modalité est loin d'être efficiente étant donné qu'elle ne parvient pas à créer une échelle d'incitation qui peut aboutir à la réalisation de performance. Conscients de sa faille en termes d'efficacité les gouvernements ont l'aboli en essayant de choisir des modalités plus efficaces et capables d'aboutir à une gouvernance stratégique.

Également les gouvernements ont recouru à des politiques visant l'encouragement de certains investisseurs. Cette intervention s'inscrit en général soit dans un cadre politique (intéresser le plus de monde pour élargir la base de légitimité du processus) soit dans un cadre social (réduire les effets négatifs du processus sur les groupes qui sont gravement touchés en l'occurrence les salariés). A titre illustratif et non exclusif nous pouvons citer les actions étatiques suivantes:

- La distribution gratuite d'une partie de capital aux employés ou contre des sommes symboliques (prix bonifiés, des aides financières ...etc.)

- La distribution libre d'une partie de capital en faveur du grand public ou d'une communauté donnée.

Quant à la première procédure (la distribution gratuite d'une partie de capital aux employés), nous remarquons qu'elle a été fréquemment utilisée dans les ex pays socialistes et certains pays développés mais rarement dans les pays en développement. Les objectifs recherchés à travers cette modalité sont au nombre de deux. Primo, la volonté approuvée par certains gouvernements à l'implication des travailleurs dans la gouvernance des entreprises privatisées et secundo, pour affaiblir la rigidité des travailleurs contre le processus de privatisation. Cependant, pour certains économistes une telle politique peut être inéquitable pour au moins deux raisons fondamentales.

**Premièrement :** Les employés des entreprises publiques ne constituent pas forcément le groupe qui a le revenu le plus faible surtout dans les pays développés. De plus, ils ne risquent pas la perte définitive de leurs emplois surtout s'ils évoluent dans des activités de grandes dimensions (là où l'espérance de décrocher un nouvel emploi est relativement plus élevée que celle dans les activités de petites tailles). Les travailleurs opérant dans des activités de petites tailles seront peut-être relativement, plus exposés aux effets négatifs de la privatisation vu qu'ils subiront des baisses de revenu et des licenciements.

**Deuxièmement :** lorsqu'une entreprise publique est privatisée à ses travailleurs, un sentiment d'inéquité peut surgir. En effet, les travailleurs évoluant dans des entreprises rentables seront plus chanceux que leurs collègues exerçant dans des entreprises moins rentables.

Quant à la deuxième procédure (distribution libre d'une partie ou de la totalité de capital au public), et bien qu'elle soit, équitable elle est économiquement inefficace. D'une part, elle réduit les recettes de la privatisation du côté de l'État ; d'autre part, la distribution d'une part faible du capital sur un nombre élevé d'actionnaires peut ne pas susciter l'intérêt de ces actionnaires aux résultats de l'entreprise.

Il est toutefois à remarquer que si les investisseurs étrangers se mêlent à cette opération (ce qui est arrivé dans plusieurs pays : Kenya, la Tanzanie, l'Ouganda), alors, il se produit un manque à gagner pour les investisseurs nationaux. Pour faire face à des situations similaires il vaut mieux que l'État choisit des positions médianes c'est - à - dire qu'il fixe des parts jugées acceptables pour les investisseurs étrangers sans par contre priver les nationaux à profiter de ce type d'occasion (dans les pays ci-dessus cités beaucoup d'entreprises profitables ont bénéficié aux investisseurs étrangers).

Mais il faut noter enfin que l'impact de la privatisation sur les acquéreurs dépend en large mesure de l'action de l'État qui peut favoriser un ou plusieurs

groupes sociaux à l'acquisition des parts fixées des privatisées. En d'autre terme, tout dépend de la volonté de l'État à se priver des recettes de privatisation pour réduire les effets négatifs subits généralement par certains groupes sociaux (les salariés, les consommateurs etc.) et à exploiter l'occasion de la privatisation pour initier une nouvelle conjoncture économique basée sur le déclenchement de l'initiative privée ( le capitalisme populaire ); ceci veut dire que l'État doit faire l'arbitrage entre ses propres intérêts et les intérêts des autres groupes sociaux.

### iii. *L'impact sur les salariés*

La privatisation s'accompagne généralement d'une réduction massive des effectifs de travailleurs ce qui soulève des problèmes relatifs à l'accroissement de chômage. Lors de la privatisation, les EP privatisées seront exposées à des nouvelles contraintes dont la plus essentielle est la perte de la tutelle et du soutien financier de l'État. Par voie de conséquence, les nouveaux acquéreurs commencent en général par l'assainissement économique et financier de l'entreprise qui engendre en premier lieu la réduction des effectifs pléthoriques. Autrement dit au cas où un investisseur, ou un groupe d'investisseurs achètent une entreprise publique, ils vont chercher à rentabiliser l'entreprise, le problème est qu'il n'y a pas suffisamment de choix possibles (surtout lorsqu'il s'agit d'une petite ou moyenne entreprise). En effet, quoique le coût de la production soit composé par plusieurs facteurs (coût des équipements, coût de matières premières, coût de la main d'oeuvre), l'unique composante maîtrisable par une entreprise privatisée demeure le coût de travail que ce soit moyennant une baisse des salaires ou le licenciement (les autres coûts échappent généralement à la maîtrise de l'entreprise vu qu'ils sont déterminés par le fonctionnement libre de marché national ou international).

Et bien que les pertes d'emplois qui accompagnent la privatisation des EP ne soient pas systématiques et pesants socialement dans tous les cas de figure nous pouvons dire qu'elles se transforment en une sérieuse contrainte lorsque :

- La capacité du reste de l'économie est insuffisante pour créer de nouveaux postes d'emploi susceptibles de couvrir la totalité des licenciés. Dans certains pays (L'Inde, Bangladesh, Le Nigeria...), les effectifs dégagés lors de la privatisation des entreprises publiques ont compliqué encore la situation vu l'augmentation du chômage global.
- La contribution de l'EP dans le domaine social est relativement élevée. Souvent, nous avons assisté à des entreprises publiques qui offrent des avantages non monétaires englobant des services sociaux (logement, éducation, services sanitaires, transport...etc.). A titre d'exemple en Inde , chaque travailleur reçoit 10% de son salaire sous forme de rémunération non monétaire alors qu'en Russie , ce chiffre est de 35%. Dans le cas

Tunisien nous ne disposons pas d'un chiffre agrégé, mais nous pouvons dire que ce type d'avantage est certainement inférieur, par rapport au deux cas précédents, par exemple dans le cas de l'entreprise 'Marbrerie de Thala' en 1983 les avantages en nature ont atteint 3529 (D) ce qui n'a pas présenté que 3,34% du frais total du personnel (105638 D). Dans ces conditions la privatisation soulève beaucoup de problèmes sociaux; en d'autres termes, lorsque la contribution de l'EP dans le domaine social est élevée alors la privatisation devient une source de déclin social. Dans ce contexte, nous pouvons dire que le gouvernement Tunisien trouve à l'heure actuelle une grande difficulté à la restructuration et à l'assainissement de la compagnie des phosphates de Gafsa ( CPG ) étant donnée qu'elle présente un cas social particulier ( village à entreprise unique )

### iv. *L'Impact sur les consommateurs*

L'impact de la privatisation sur les consommateurs dépend essentiellement de la nature de marché dans lequel l'EP opérait avant sa privatisation et aux transformations possibles dudit marché après la privatisation. En effet, lorsque l'EP opérait dans des marchés concurrentiels ou quasi concurrentiels la privatisation se veut socialement efficace étant donné que les nouveaux acquéreurs vont continuer d'adopter la même logique de gestion productive et adopter la même règle de décision en essayant d'égaliser le coût marginal au prix. A ce niveau nous pouvons dire qu'il peut y avoir une équivalence entre la propriété privée et la propriété publique étant données qu'elles convergent socialement aux mêmes effets. Toutefois, lorsque l'EP opérait dans un marché monopolistique sa privatisation pourra générer des effets négatifs sur les consommateurs qui vont faire face à une augmentation brusque des prix. Cette dernière situation ne peut avoir lieu que si aucune politique de réglementation n'est adoptée par l'État. Mais dans le cas contraire où l'État limite le taux de profit à son niveau de concurrence l'effet sur les consommateurs peut être nul. Dans le monde réel nous remarquons, malgré que les gouvernements prononcent qu'ils ont adopté des politiques réglementaires strictes, que les augmentations des prix sont quasi systématiques aux privatisations des EP opérant dans des marchés monopolistiques (cas des cimenteries Tunisiennes)

### v. *Autres impacts*

Le cumul des effets sociaux de la privatisation sur les individus et groupes d'individus (licenciement, baisse des salaires, augmentation des prix...etc) peut engendrer à son tour d'autres effets, il s'agit essentiellement du :

- développement du secteur informel
- l'augmentation de la pauvreté
- le pessimisme social

L'ampleur de ces effets dépend de l'intensité des effets subits par chacun des groupes affectés. Ainsi, le gouvernement doit veiller à ce que les effets générés par la privatisation ne soient pas critiques socialement et ceci l'oblige de jouer un rôle bienveillant comme nous allons le voir dans la section suivante.

### III. MANAGEMENT PUBLIC DE LA PRIVATISATION

L'État peut agir d'une manière multidimensionnelle et ce soit par l'action sur le marché du travail ou le choix des termes de la privatisation ou enfin par le ciblage des interventions.

#### a) *L'action sur le marché du travail*

Pour que le marché de travail puisse émettre les signaux susceptibles de mobiliser et d'allouer d'une manière efficiente la main d'oeuvre, il faut que l'État intervienne pour briser la rigidité et les obstacles entravant les mécanismes du marché. En effet, cinq politiques sont d'ores et déjà appliquées.

- Rendre les salaires nominaux flexibles
- Briser la relation emploi-services sociaux
- Améliorer l'information
- Indemniser les licenciés
- Améliorer la qualification des licenciés

##### i. *Rendre les salaires nominaux flexibles*

Lorsque les salaires nominaux sont administrés alors la mobilité de la main d'oeuvre est freinée. Ceci défavorise les licenciés qui doivent attendre une période de temps plus élevé pour décrocher un nouvel emploi. Sur le plan pratique, une flexibilité parfaite des salaires n'est en réalité qu'une simple hypothèse irréaliste étant donné qu'il y a de nombreuses contraintes dont l'essentiel reste toujours le pouvoir syndical. Mais ceci ne nie pas le changement que connaît la majorité des pays au niveau de l'assouplissement des procédures et l'autonomie relative de la variation des salaires dans des intervalles bien déterminés: (le Chili, par exemple, a supprimé le système d'indexation généralisée à partir de 1982 et adopte un mécanisme de fixation plus souple. les pays de l'Europe centrale et du nord Africain ont réussi des mécanismes plus souple par la voie des négociations.

##### ii. *Briser la relation emploi - services sociaux*

Pour réussir une privatisation il faut que l'État se contente veille à ce que les salaires qu'il verse à ses employés soient purement monétaires et ce afin que les mobilisations post privatisation seront plus fluides. En effet, lorsque l'État offre à ses employés des salaires non monétaires (logement, transport, etc.) alors les travailleurs seront plus rigides aux licenciements et aux départs volontaires ce qui peut rendre la restructuration peu efficace. Toutefois, lorsque les salaires perçus par les travailleurs du secteur public sont monétaires alors ils seront plus aptes à accepter les modalités de départ

volontaire surtout lorsqu'ils reçoivent des indemnités incitatives.

#### iii. *Améliorer l'information*

Dans les pays en voie de développement, les travailleurs sont souvent mal informés, ils se contentent d'échanger des renseignements de type informel pour savoir les offres de travail et les salaires qui prévalent dans le marché. Cependant, dans les pays développés les travailleurs sont informés par le biais de bureaux public et parfois privés d'emplois. Dans le monde actuel et malgré que l'information est devenue plus abondantes (grâce aux nouvelles technologies de communication) le problème reste toujours posé dans les pays pauvres où l'accès à de telles technologies demeure jusque là coûteux.

#### iv. *Indemniser les licenciés*

Pour combler la perte de revenu que subit les travailleurs (à cause des licenciements), l'État a recouru à la politique d'indemnisation qui a pris deux formes essentielles. La première forme est le transfert périodique des revenus (mensuel, semestriel...etc.) ce qui permet aux travailleurs de répartir leurs consommation sur une longue période. La deuxième forme consiste à donner au travailleur (juste après le licenciement) toute l'indemnité et lui laisser la liberté de choisir la manière qui lui convient pour sa dépense. Il est toutefois à remarquer que dans certains cas, nous assistons à des régions qui contiennent une entreprise publique unique ce qui handicape la privatisation ou même l'assainissement. Dans ce contexte, l'État peut soit donner plus d'indemnité pour encourager les licenciés à se mouvoir vers d'autres régions soit créer d'autres entreprises ou enfin doter les travailleurs des moyens financiers suffisants pour créer des petites entreprises.

#### v. *Améliorer la qualification des licenciés*

Etant donné que la concurrence entre les travailleurs s'amplifie et s'intensifie d'un jour à l'autre, la compétitivité des employés est devenue nécessaire. En effet, chaque travail demande un ensemble de conditions nécessaires ( habileté, vivacité, niveau d'instruction, productivité ...etc.); pour cela une fraction des licenciés ( surtout les moins qualifiés ) s'éveillent sur la réalité selon laquelle ils sont privés des facultés ou du niveau d'instruction nécessaire à leurs réinsertions dans le circuit économique.

Dans ce contexte, l'État peut intervenir pour aider les travailleurs à améliorer leurs compétences à travers l'adoption des programmes de formation professionnelle (le cas de la Tunisie) ou de reconversion (le cas des pays de l'Est, le Mexique...).

Sur le plan pratique<sup>9</sup>, ces programmes ont permis le raccourcissement de la durée de chômage en réalisant la soudure entre l'emploi perdu et l'emploi créer<sup>10</sup>.

b) *le choix des termes de la privatisation.*

L'État peut également intervenir pour choisir les termes de la privatisation qui correspondent le mieux à ses conditions économiques, politiques et sociales, sans par contre interrompre ou handicaper le processus des réformes. L'État intervient également à deux niveaux essentiels pour déterminer :

- La vitesse de la privatisation
- Le moment de la privatisation

i. *La vitesse de la privatisation*

Au cas où l'État craint que la réussite du processus de restructuration nécessite une privatisation radicale des EP, alors il peut intervenir pour réduire la vitesse de la privatisation et ce afin de s'éloigner d'un cumul massif de licenciements. Par voie de conséquence cette politique permet une destruction équilibrée de l'emploi pour se prémunir d'une accumulation instantanée du chômage. Dans les cas où les gouvernements ont adopté des privatisations de masse sans pour autant prendre les précautions nécessaires les résultats sociaux étaient catastrophiques comme le témoigne les expériences des pays de l'Afrique subsaharienne où les pertes d'emplois étaient énormes.

ii. *Le moment de la privatisation*

En général, il est plus efficace à toute l'économie de commencer la privatisation lorsque la situation macro-économique est « favorable » ou « soutenable ». Le cas Britannique représente une privatisation qui a débuté dans des conditions économiques « normales » ce qui a permis ensuite à toute l'économie des gains d'efficacité. Par contre dans les pays en transition, qui ont commencé la privatisation dans des périodes de crise économique, il y a eu une forte dégradation des indicateurs sociaux (en Pologne par exemple, il y a eu une perte d'environ 1.600.000 emplois à cause de la privatisation en moins de deux ans 89 - 91).

c) *Ciblage des interventions*

En partant de la réalité selon laquelle il y a certains groupes qui seront affectés, alors l'État doit cibler ses interventions pour se concentrer sur ceux qui ont réellement besoin. Pour cela, l'État peut identifier tout d'abord les groupes affectés afin de voir ceux qui sont les plus touchés, ensuite il aura le choix de subventionner ou/et de réaliser les transferts sociaux nécessaires. En effet une telle politique est extrêmement importante vu qu'elle réduit les inégalités qui peuvent prévaloir après les privatisations.

## IV. CONCLUSION GÉNÉRALE

La privatisation est une politique économique complexe à entreprendre surtout dans les pays pauvres étant donné ses conséquences sociales qui peuvent aggraver des situations sociales d'ores et déjà aggravées. D'un autre côté il s'avère parfois que cette privatisation est un « mal inévitable » qu'une économie devra supporter afin de restructurer ses potentialités productives et dégager des gains d'efficacité. Ainsi, face à ces deux contraintes l'État doit jouer un rôle actif pour atteindre deux objectifs fondamentaux. Premièrement instaurer le critère d'efficacité et deuxièmement veiller à ce que ladite efficacité ne soit pas coûteuse socialement. Dans notre travail nous avons pu soulever l'origine du coût social joint à la privatisation et nous avons retracé quelques lignes de conduites que le gouvernement peut suivre afin de l'alléger. Les travailleurs, les investisseurs, l'État et les consommateurs paraissent comme les groupes stratégiques qui sont influencés directement par un processus de privatisation et que le gouvernement doit cerner leurs gains et leurs pertes afin de savoir comment mener une politique de redistribution équitable. De même l'action de l'État peut porter sur trois volets importants à savoir l'action sur le marché du travail, l'action sur le moment et la vitesse de la privatisation et enfin sur le ciblage de ses interventions.

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# The Relationship between Shopping Mall Attributes, Customer Satisfaction and Positive Word-Of-Mouth: China Visitors in Hong Kong

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**Abstract** - The objective of this study is to develop a conceptual research model for examining relationships between shopping mall attributes, customer satisfaction and positive word-of-mouth. The proposed model has two features. First, it examines the influence of five shopping mall attributes (i.e. quality of customer services, convenience, mall environment, quality of retailers and rewards) on customer satisfaction. Second, it examines the influence of customer satisfaction on positive word-of-mouth recommendation. This empirical study was conducted in the context of Chinese visitors to malls in Hong Kong, travelling under the individual visitor scheme. After one month, 750 valid responses were successfully collected. The model was analysed using structural equation modeling. Consistent with previous research, the findings of this study support all hypotheses. This study has identified certain significant implications for researchers and shopping mall owners.

**Keywords** : Shopping mall attributes, Customer Satisfaction, Positive word-of-mouth recommendation, China visitors.

**GJMBR - A Classification** : FOR Code: 150501, 150503 , 150505, JEL Code: L81, M31, P46



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# The Relationship between Shopping Mall Attributes, Customer Satisfaction and Positive Word-Of-Mouth: China Visitors in Hong Kong

Chi Bo WONG <sup>α</sup>, Hing Cheong NG<sup>σ</sup>, Kelly Ka Li WONG <sup>σ</sup> & Man Ho WONG<sup>σ</sup>

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## I. INTRODUCTION

Along with economic development and the change in consumer culture, shopping malls in Hong Kong, as in western countries, have gradually replaced traditional department stores and retail outlets and have become the major venues for shoppers. The shopping mall industry has traditionally operated in a relatively stable environment in Hong Kong. However, since introduction of the individual visitor scheme (IVS) in 2003 by China's central government to boost mainland Chinese visitors' flow to Hong Kong, the industry is characterized by dramatically aggressive competition. The IVS visitors have direct effects on the Hong Kong economy as demand for products and services has increased sharply. The retail industry in general and shopping malls in particular have benefitted handsomely from the increased demand.

In the past, retail industry of Hong Kong used to focus on tourists from western countries and Japan.

However, since 2003, almost all large shopping malls in Hong Kong have undergone a significant transformation and adjusted their operational strategies to cater to the considerably large and growing number of IVS visitors as it is commonly known that IVS visitors are now the main source of revenue for shopping malls.

In spite of the rapid development of the shopping mall industry in Hong Kong and the importance of IVS visitors' positive word-of-mouth recommendation to the shopping mall industry, perceptions of IVS visitors have not been adequately studied numerically. Specifically, the aim of this study is to:

1. examine the influence of five shopping mall attributes on customer satisfaction; and
2. examine the influence of customer satisfaction on positive word-of-mouth recommendation.

## II. RESEARCH MODEL AND HYPOTHESES

Many researchers have acknowledged the importance of positive word-of-mouth recommendation concept in marketing theory and practice and have made attempts to investigate antecedents of customer satisfaction and relationships between customer satisfaction and positive word-of-mouth recommendation. However, the complex interrelationships among these constructs are still not well understood (Yang and Peterson, 2004; Walsh et al., 2008). Based on a review of literature (Brown et al., 1993; Chebat et al., 2009; Keng et al., 2007; Leung et al., 2005; Zafar, 2007), a research model which links shopping mall attributes, customer satisfaction and positive word-of-mouth recommendation is developed (Figure 1).

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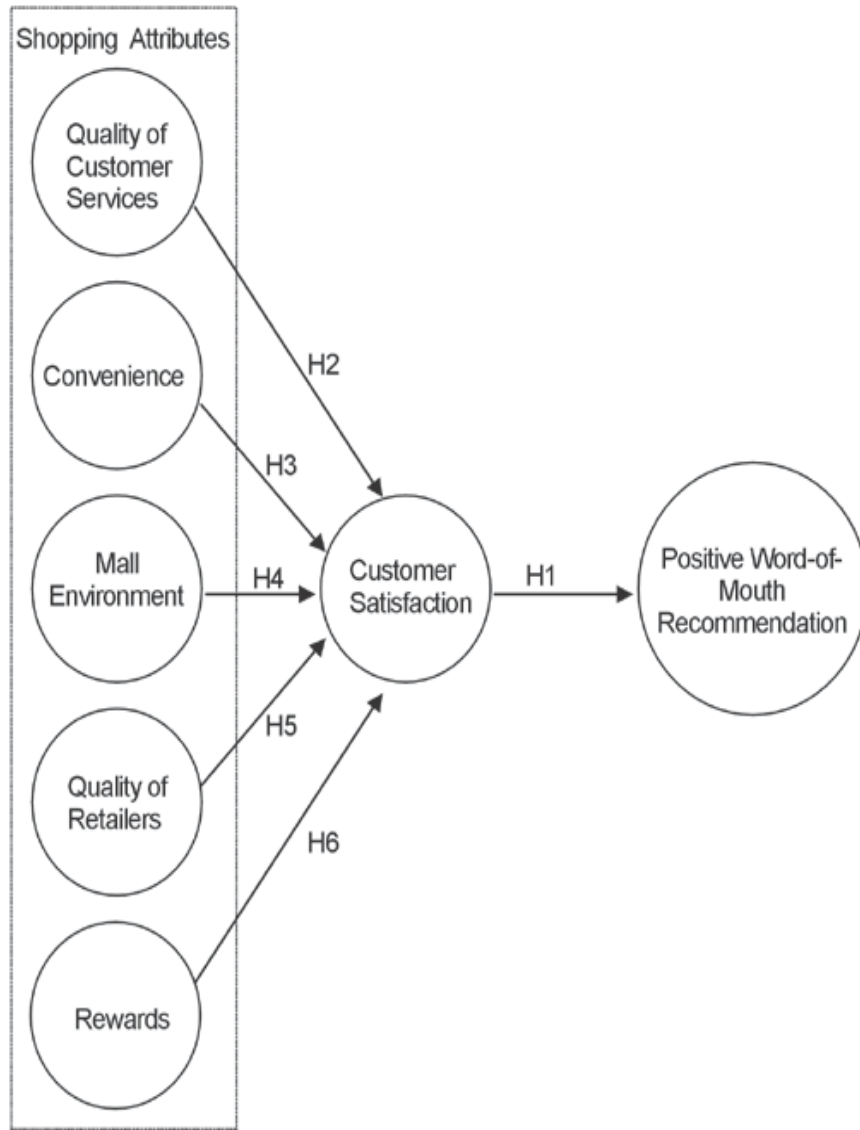


Figure 1: Research Model

a) *Customer satisfaction as a driver of positive word-of-mouth recommendation*

Cronin et al. (2000) described customer satisfaction to be an evaluation of an emotion, reflecting the degree to which the customer believes the service provider evokes positive feelings. Numerous studies in the service sector have hypothesized and empirically validated the link between satisfaction and behavioral intentions such as customer retention and word-of-mouth (Anderson and Sullivan, 1993; Bansal and Taylor, 1999; Cronin et al., 2000; Rucci et al., 1998). Indeed, this link is fundamental to the proposition that satisfying customer needs and wants is the key to ensuring repeat purchases (Kotler et al., 2002). Using the aforementioned literature, the first hypothesis was formulated:

H1: The higher the level of customer satisfaction, the higher the level of positive word-of-mouth recommendation.

b) *Quality of customer services as a driver of customer satisfaction*

Research supports a positive relationship between service quality and customer satisfaction as better service implies better performance, an increased likelihood of expectations being fulfilled and correspondingly higher levels of satisfaction (Caruana et al., 2000). Over the past two decades, service quality has been regarded as one of main factors affecting customer satisfaction and customer loyalty. Empirical findings support the view that service quality is one of the primary determinants of customer satisfaction (Anderson and Sullivan, 1993; Anderson et al., 1994; Athanassopoulos, 2000; Cronin et al., 2000; Fornell et al., 1996; Parasuraman et al., 1994). Using the aforementioned literature, the second hypothesis was formulated:

H2: The higher the level of quality of customer services, the higher the level of customer satisfaction.

*c) Convenience as a driver of customer satisfaction*

Consumer markets have become more sharply segmented than ever before, requiring retail marketers to appeal to distinct target groups (Chebat et al., 2009). To gain the loyalty of shoppers, malls must appeal to consumers' social motives and experiential needs, not simply provide access to desired goods (Keng et al., 2007). In response to changing consumer needs, malls have grown larger and the convenience of one-stop shopping has expanded to include service outlets and entertainment providers (Yiu and Yu, 2006). Shopping malls today offer fast-food courts, restaurants, video arcades, movie theaters, beauty salons, dental clinics and more. Malls have also become important meeting places, especially for young people and seniors (Wagner, 2007). Using the aforementioned literature, the third hypothesis was formulated:

H3: The higher the level of convenience, the higher the level of customer satisfaction.

*d) Mall environment as a driver of customer satisfaction*

Ambient features may be an extension of product display and are chosen to modify buyers' knowledge and mood, thereby affecting behaviors, and to enhance the mall or store image to differentiate it from others (Yiu and Yu, 2006). Wakefield and Baker (1998) conducted a study to indicate that architectural design had the strongest positive influence on excitement generated by a mall, while interior decoration had the strongest positive effect on the desire to stay. These studies revealed that music and layout were positively related to the excitement a mall generates and the desire to stay. Using the aforementioned literature, the fourth hypothesis was formulated:

H4: The better the level of mall environment, the higher the level of customer satisfaction.

*e) Quality of retailers as a driver of customer satisfaction*

The importance of quality of retailers in customers' purchasing decision has been recognized in the case of durable goods (Brucks et al., 2000). Parasuraman et al. (1994) and Cronin et al. (2000) suggested that future research should include some consideration of quality of retailers, thereby emphasizing the significance of quality of retailers in consumers' decision-making process. Using the aforementioned literature, the fifth hypothesis was formulated:

H5: The higher the level of quality of retailers, the higher the level of customer satisfaction.

*f) Reward as a driver of customer satisfaction*

Looking more specifically at different components of loyalty programmes and their influence on repeat purchases, Kendrick (1998) found that consumers who received benefits such as gifts or discounts were more loyal than those who were given

only a complimentary note. In addition, consumers who received branded gifts were found to be more loyal than those receiving a discount of equivalent value. Wirtz and Chew (2002) found that offering incentives such as discounts, free items, coupons, gift vouchers and accumulation of reward points to satisfied consumers increased their likelihood of engaging in word-of-mouth behavior. Bridson et al. (2008) assessed the relationship between loyalty programmes' attributes, satisfaction and loyalty. Their research results indicated that response to reward attributes is positive and constitutes a driver of customer satisfaction. Using the aforementioned literature, the last hypothesis was formulated:

H6: The higher the level of reward, the higher the level of customer satisfaction.

### III. RESEARCH METHODOLOGY

*a) Questionnaire design*

A questionnaire survey was employed for data collection. Questions were first written in English. Chinese version of the questionnaire was then developed by applying Brislin's (1980) recommendation to minimize the problem of lack of equivalence between English and Chinese versions. Specifically, English version of the questionnaire was first translated into Chinese by a Chinese translator and was then translated back into English by another Chinese translator to check the translation's accuracy. When a major inconsistency was observed in the translation, differences were reconciled by discussions between the two translators. The precise wording of the questionnaire was based on the original English language version and was adjusted such that it was smooth and natural sounding, as well as equivalent, in both languages.

The final version of the questionnaire was pilot tested to ensure appropriateness of questions' wording, format and structure. The pilot study was undertaken in two stages. In stage one, both initial English and Chinese versions of the questionnaires were constructed on the basis of discussions with shopping mall management experts to develop an understanding of shopping mall attributes, customer satisfaction and positive word-of-mouth recommendation in the context of shopping behavioral intention. The experts included two academic lecturers in Marketing Strategy and Property Management disciplines, four postgraduates in Marketing and Property Management, two qualified property managers and two qualified marketing managers. The question-by-question approach was adopted in the pilot study. Each participant was asked to interpret the questions, to ensure that the measure of the question was comprehended in a manner conducive to reliable responses. They were encouraged to comment on the questionnaire critically and to spell out any problems they could identify in the questions, as if they were the respondents. If problem areas were detected, all participants were encouraged to suggest

alternatives for handling the identified problems. On the basis of their comments, some questions were rephrased.

In stage two, a pilot test was undertaken among IVS visitors. The target respondents were required to have shopping experience in Hong Kong. A total of fifty respondents were recruited by the convenience sampling method at tourist spots in Hong Kong. The respondents were invited to complete the questionnaire and to comment on wordings of questionnaire items. The pilot test brought to light some of the problems in comprehension and completion of survey questions. Recommendations were obtained to solve the problems identified by the pilot test. As a result, fifteen items were retained for measurement of influence of shopping mall attributes on customer satisfaction, three items were retained for the measure of customer satisfaction with

mall shopping in Hong Kong, three items were retained for the measure of the extent of customer satisfaction required to encourage positive word-of-mouth recommendation, and three items were retained for the measure of demographics.

#### b) Measures

This research adapted measures of shopping mall attributes and the relationship between customer satisfaction and positive word-of-mouth recommendation that had been used successfully in the past (Babin et al., 2005; Bridson et al., 2008; Chebat et al., 2009; Zafar et al., 2007). Generally each construct was measured using a three-item, seven point Likert-type scale with anchors "1 = strongly disagree" and "7 = strongly agree". Mean value of score of each construct was calculated. Table 1 summarizes items used for measuring the constructs:

Table 1: Summary of Measures of Constructs

Construct	Items	Adapted from
Convenience (C)	C1: This shopping mall is easy to reach.	Chebat et al. (2009)
	C2: This shopping mall remains open for long hours.	Zafar et al. (2007)
	C3: This shopping mall is a one-stop shopping place where I can buy all my needs.	
Quality of Retailers (QR)	QR1: Retailers at this shopping mall sell high quality products.	Chebat et al. (2009)
	QR2: Retailers at this shopping mall provide me good after sales service.	
	QR3: Retailers at this shopping mall are reputable.	
Quality of Customer Service (QCS)	QCS1: This shopping mall provides me good customer services.	Chebat et al. (2009)
	QCS2: This shopping mall provides me good information.	
	QCS3: Customer service staff of this shopping mall is responsive and friendly.	Zafar et al. (2007)
Mall Environment (ME)	ME1: This shopping mall's environment is spacious.	Zafar et al. (2007)
	ME2: This shopping mall is trendy and has good interior decoration.	
	ME3: This shopping mall is tidy and clean.	
Rewards (R)	R1: This shopping mall provides me discounts.	Bridson et al. (2008)
	R2: This shopping mall provides me gift vouchers.	
	R3: This shopping mall provides me cash coupons.	
Customer Satisfaction (CS)	CS1: I am satisfied with my decision to shop at this mall.	Babin et al. (2005)
	CS2: I feel very satisfied after shopping at this mall.	
	CS3: I am 100% satisfied with shopping at this mall.	

Positive Word-of-Mouth Recommendation (WOM)	WOM1: I will say positive things about this shopping mall to other people.	Babin et al. (2005)
	WOM2: I will recommend this shopping mall to someone who seeks my advice.	
	WOM3: I will encourage friends and relatives to shop at this mall.	

#### IV. RESULTS

Participation in the survey was voluntary. The mass survey was conducted from 16 March 2010 to 30 March 2010. The data of this research was collected by interviewing IVS visitors at three popular shopping malls. After one month, 750 valid responses were collected successfully. The number of responses was considered sufficient for data analysis. As Alreck and Settle (1985) stated, for populations of 10,000 and more, most experienced researchers would probably consider a sample size between 200 and 1,000 respondents. Overall, 43.3% of respondents were male and 56.7% were female. Most respondents (60.2%) were aged 26-59 years. Also, 87.1% of respondents had income above RMB 5000 per month.

##### a) Construct validity and reliability tests

In order to ensure the adapted seven constructs of word-of-mouth, customer satisfaction, quality of customer services, convenience, mall environment, quality of retailers and rewards validated in previous research were also valid in this research, a two stages factor analysis, factor extraction and factor rotation, was performed, as suggested by Green et al. (2000). The primary objective of the first stage was to make an initial decision about the number of factors underlying a set of measured variables. The goal of the second stage was twofold: (1) to statistically manipulate (i.e. to rotate factors) the results to make the factors more interpretable; and (2) to make final decisions about the number of the underlying factors.

##### i. Factor Extraction

As part of the first decision to determine the number of extracted factors, eigenvalues based on the principal components analysis was used to assess absolute and relative magnitudes. Table 2 lists eigenvalues for Components 1 to 21. The total amount of variance of variables in an analysis is equal to the number of variables (in the research, 21). The extracted factors (or components because principal components analysis was used as the extraction method) account for variance among these variables. An eigenvalue is the amount of variance of a variable accounted for by a factor. An eigenvalue for a factor should be greater than or equal to zero and cannot exceed the total variance (in this research, 21). Percent variance of variables accounted for by the factor is equal to the eigenvalue divided by the total amount of variance of variables times 100. For example, the eigenvalue associated with

the first factor is 3.579 and percent total variance accounted for by the first factor is  $(3.579 / 21) \times 100 = 17.045$  (as shown in the first row in Table 2).

Eigenvalues are helpful in deciding how many factors should be used in the analysis. Many criteria have been proposed in the literature for deciding how many factors to extract, based on values greater than 1. However, it may not always yield accurate results (Green et al., 2000). Another criteria is to examine the plot of the eigenvalues, also known as the scree test, and to retain all factors with eigenvalues in the sharp descent part of the plot before the eigenvalues start to level off. This criterion yields accurate results more often than the eigenvalue-greater-than-1 criterion. Based on the scree plot (Figure 2), it can be concluded that seven factors should be rotated.



Table 2 : Initial Statistics from Factor Extraction Procedure

Extraction Method: Principal Components Analysis

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.579	17.045	17.045	3.579	17.045	17.045
2	2.108	10.038	27.082	2.108	10.038	27.082
3	2.045	9.737	36.819	2.045	9.737	36.819
4	1.914	9.116	45.935	1.914	9.116	45.935
5	1.766	8.411	54.346	1.766	8.411	54.346
6	1.639	7.804	62.149	1.639	7.804	62.149
7	1.286	6.125	68.274	1.286	6.125	68.274
8	0.767	3.650	71.925			
9	0.707	3.367	75.292			
10	0.637	3.032	78.323			
11	0.619	2.949	81.273			
12	0.583	2.777	84.049			
13	0.529	2.518	86.567			
14	0.487	2.318	88.885			
15	0.455	2.165	91.050			
16	0.372	1.773	92.823			
17	0.347	1.654	94.477			
18	0.334	1.590	96.067			
19	0.300	1.429	97.496			
20	0.284	1.350	98.846			
21	0.242	1.154	100.000			

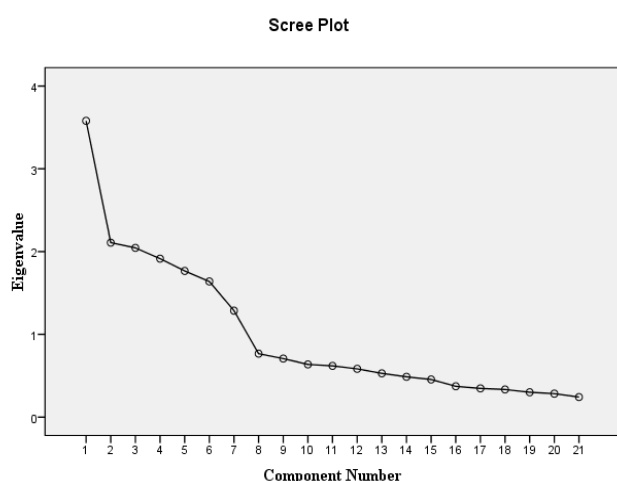


Figure 2 : Scree Plot of the Eigenvalues

Extraction Method: Principal Components Analysis

## ii. Factor Rotation

The next stage of factor analysis is to rotate a seven-factor solution. The rotated factor matrix is shown in Table 3. This matrix shows factor loadings, which are the correlations between each variable and the factors for a varimax rotation. The criteria used to identify and interpret factors were: each item should load 0.50 or greater on one factor and 0.35 or below on the other two factors (Igbaria et al., 1995). The factors are interpreted by naming them based on the size of the loadings. As

shown in Table 3, the three variables (ME1, ME2 and ME3) are associated with the first factor. The three variables (QR1, QR2, QR3) are related strongest to the second factor. The three variables (C1, C2, C3) are related strongest to the third factor. The three variables (QCS1, QCS2, QCS3) are related strongest to the fourth factor. The three variables (CS1, CS2, CS3) are related strongest to the fifth factor. The three variables (R1, R2, R3) are related strongest to the sixth factor. Finally, the remaining three factors (WOM1 and WOM2 and WOM3) are associated with the seventh factor. On the basis of the content of these seven sets of factors, the first factor was named as mall environment, the second factor was named as quality of retailers, the third factor was named as convenience, the fourth factor was named as quality of customer services, the fifth factor was named as customer satisfaction, the sixth factor was named as rewards, and the seventh factor was named as positive word-of-mouth.

These results confirmed that the seven constructs, validated in previous studies (Babin et al., 2005; Bridson et al., 2008; Chebat et al., 2009; Zafar et al., 2007), are uni-dimensional, factually distinct and applicable in the shopping mall context in Hong Kong. The proportion of variance accounted for by each of the rotated factors is frequently reported in literature to indicate the relative importance of each factor. As reported in Table 3, the first, second, third, fourth, fifth, sixth and seventh factors accounted for 8.791%, 8.565%,

8.170%, 7.619%, 7.593%, 7.437% and 7.234%, respectively, of variance of the twenty one variables. In total, the seven factors accounted for 55.408% of the variance. This percentage does not match the percentage based on the initial eigenvalues because the initial extraction was based on principal components and not maximum likelihood extraction method.

### iii. Reliability Test

Examining the coefficient alpha listed in the final column, estimates for the seven scales are from 0.706 to 0.810. Since the coefficient alpha of each scale is above the acceptable value of 0.700 (Nunnally, 1978), all seven scales are considered reliable.

*Table 3* : The Rotated Factor Matrix from the Factor Analysis

Factor/Item Label	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Rotation Sums of Squared Loadings			Coefficient Alpha
								Eigen Value	% of Variance	Cumulative %	
<b>Factor 1</b>											
ME2	0.915	0.041	0.062	0.009	0.084	0.004	0.058	1.846	8.791	8.791	0.810
ME3	0.780	0.035	0.046	0.031	0.086	0.020	0.071				
ME1	0.589	0.041	0.032	0.014	0.055	0.017	0.047				
<b>Factor 2</b>											
QR2	0.028	0.912	0.042	0.012	0.057	0.039	0.064	1.799	8.565	17.356	0.799
QR3	0.081	0.741	0.022	-0.036	0.071	0.051	0.034				
QR1	0.014	0.602	0.070	-0.018	0.090	0.106	0.021				
<b>Factor 3</b>											
C2	0.075	0.037	0.906	0.004	0.094	0.029	0.029	1.716	8.170	25.526	0.778
C3	0.085	0.044	0.696	-0.008	0.101	0.049	0.000				
C1	-0.012	0.051	0.595	0.070	0.081	0.059	-0.008				
<b>Factor 4</b>											
QCS2	-0.014	0.000	0.038	0.973	0.050	0.019	-0.012	1.600	7.619	33.144	0.717
QCS1	0.025	-0.023	0.000	0.556	0.125	0.042	-0.009				
QCS3	0.025	-0.013	0.036	0.544	0.071	-0.012	0.022				
<b>Factor 5</b>											
CS2	0.075	0.121	0.087	0.098	0.866	0.076	0.090	1.594	7.593	40.737	0.760
CS1	0.051	0.059	0.118	0.104	0.622	0.177	0.099				
CS3	0.117	0.072	0.106	0.122	0.577	0.001	0.130				
<b>Factor 6</b>											
R2	0.011	0.070	0.044	0.003	0.067	0.870	0.128	1.562	7.437	48.174	0.735
R1	-0.006	0.095	0.035	0.046	0.106	0.623	-0.019				
R3	0.031	0.029	0.054	-0.003	0.032	0.589	0.055				
<b>Factor 7</b>											
WOM2	0.029	0.022	0.040	0.023	0.106	0.060	0.933	1.519	7.234	55.408	0.706
WOM1	0.045	0.003	0.014	0.020	0.113	0.047	0.554				
WOM3	0.069	0.067	-0.026	-0.025	0.043	0.034	0.520				

# *b) Assessment of the Fit of the Proposed Research Model*

The research model depicted in Figure 1 was analysed using Structural Equation Modeling (SEM), a second-generation data analysis technique with substantial advantages over first-generation techniques such as principal components analysis, factor analysis, discriminant analysis or multiple regression (Chin, 1998). This technique allows modeling of relationships among multiple independent and dependent constructs (Gefen et al., 2000). Structural Equation Modeling using the maximum likelihood estimation method was applied to the sample data through a software package called AMOS (version 18.0). William (1992) proposed general guidelines for interpreting the 'significance' of correlation: < 0.20 slight correlation, almost no relationship; 0.20-0.40 low correlation, small relationship; 0.40-0.70 moderate correlation, substantial relationship; 0.70-0.90 high correlation, marked relationship; and > 0.90 very high correlation, solid relationship. The research model was tested with the entire sample for model fit and parameter estimates. The output of AMOS version 18.0 produces multiple fit indices from various families. Ideally, every fit index should be used when estimating how well the model fits the data set. Nevertheless, many of these indices are either sample size dependent, or influenced by the complexity of the model (Anandarajan, 2001).

Among fit indices produced by the AMOS programme is the Chi-square statistic, which is the test of absolute fit of the model. The Chi-square statistic and the degrees of freedom; the difference between the number of distinct parameters to be estimated are usually used as tests of absolute fit. However, Kline (1998) and D'Amico (2001) have cautioned that the Chi-square statistic is too sensitive to the size of the sample for it to be interpreted as a significance test. These authors have argued that the Chi-square statistic usually becomes significant even though the differences between observed and model implied covariances are slight. Moreover, Kline (1998) has argued that the Chi-square statistic has no upper bound, making interpretation of its values difficult. He has argued for use of the ratio of the Chi-square and the degrees of freedom (DF); a ratio of less than 3 is desirable. However, the statistic is likewise vulnerable to the effects of sample size. The Table 4 shows the Chi-square statistic and the degrees of freedom for the research model in this study are 324.777 and 183 respectively, and a relative chi-square value of 1.775 ( $p < 0.01$ ).

Given this uncertainty and unreliability of the Chi-square statistic in large sample sizes such as the ones employed in this study, many researchers have turned to other fit indices that are relatively less sensitive to sample size. These are also known as indices of relative fit and are presented in Table 3. Not all indices of fit are commonly used and, therefore, those chosen

for consideration in this study are the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), the Comparative Fit Index (CFI), the Tucker-Lewis index (TLI) and the Root Mean Square Error of Approximation (RMSEA). Overall model fit measures are reported in Table 4; except the low p value, all goodness of fit indices are well above the desired levels.

The AMOS programme computes the Goodness of Fit Index (GFI) and the Adjusted Goodness of Fit Index (AGFI). Values of these indices range from 0 (which indicates poor fit) to 1 (indicating perfect fit) (Schumacker and Lomax, 1996; Sobolewski and Doran, 1996). The GFI is analogous to a squared correlation in so far as it indicates the proportion of the observed covariances explained by the model-implied covariances, while the AGFI, calculated from the GFI, includes an adjustment for model complexity (Sobolewski and Doran, 1996; Kline, 1998). The GFI is a relative measure of how well the data fit the model (Sobolewski and Doran, 1996). Recommended values should be greater than 0.90. Table 3 shows that values for the GFI and AGFI in the default model in this study are 0.961 and 0.951, respectively, indicating that there is model-data correspondence.

CFI is an index proposed by Bentler (1990). CFI values close to 1 indicate a very good fit. The Comparative Fit Index (CFI) is an incremental fit index which indicates the proportion of improvement of the overall fit of the final model relative to the independence (null) model (Kline, 1998; and D'Amico, 2001). For instance, the CFI value for the research model in this study is 0.970, which indicates that the relative overall fit of the model is 97 per cent better than the independence model estimated with the same sample data. Recommended values are those greater than 0.90. In the Tucker-Lewis Index (RHO2 TLI), values of 0 and 1 indicate total lack of fit and perfect fit, respectively, i.e. intermittent values indicate the magnitude of fit. D'Amico (2001) recommended a TLI value of 0.96 or higher. However, Schumacker and Lomax (1996) contended that values close to 0.90 reflect a good model fit. The value for the final model in this study is 0.965. The Root Mean Square Error of Approximation (RMSEA), with its lower and upper confidence interval boundaries, is another very valuable fit index that is commonly reported. The recommended values for this fit statistic are below 0.06 (Schumacker and Lomax, 1996; D'Amico, 2001). The value for the final model is 0.032, which indicates a good model fit.

*Table 4 :* Goodness of Fit of the Hypothesized SEM Model

Fit Indices	SEM Model	Desired Levels
Chi-square	327.777	--
Degree of freedom (df)	183	--
p-value	0.000	> 0.05
Chi-square/df	1.775	< 3.00
Goodness of Fit Index (GFI)	0.961	> 0.90
Adjusted GFI (AGFI)	0.951	> 0.90
Comparative Fit Index (CFI)	0.970	> 0.90
Tucker-Lewis Index (TLI)	0.965	> 0.90
Root Mean Square Error of Approximation (RMSEA)	0.032	< 0.06

*c) Testing of Hypotheses*

In order to test the hypotheses, path coefficients and their significance values were estimated with AMOS 18.0 (results in Table 5).

*Table 5 :* Path Coefficients and their Significance Values with Variables

			Standardized Coefficient	Unstandardized Coefficient	S.E.	C.R.	P
Customer Satisfaction	→	Word-of-mouth	0.277	0.235	0.042	5.589	< 0.01
Convenience	→	Customer Satisfaction	0.195	0.201	0.044	4.566	< 0.01
Quality of Retailers	→	Customer Satisfaction	0.172	0.168	0.041	4.089	< 0.01
Quality of Customer Services	→	Customer Satisfaction	0.187	0.250	0.057	4.424	< 0.01
Mall Environment	→	Customer Satisfaction	0.175	0.160	0.038	4.184	< 0.01
Rewards	→	Customer Satisfaction	0.177	0.235	0.057	4.101	< 0.01

\*Significant at  $p < 0.01$  level

Consistent with Hypothesis H1, customer satisfaction is positively related to positive word-of-mouth ( $p < 0.01$ ). According to the proposed model, five variables (convenience, quality of retailers, quality of customer services, mall environment and rewards) were hypothesized to affect customer satisfaction. Consistent with previous studies, all five hypotheses (H2-H6) have positive significant effects on customer satisfaction ( $p < 0.01$ ). In summary, path coefficients of the proposed model confirmed all hypothesized relationships. The path coefficients and their significance values with estimates are shown in Table 6. Figure 3 illustrates the significant structural relationships among the studied variables.

*Table 6* : Path Coefficients and their Significance Values with Estimates

			Standardized Coefficient	Unstandardized Coefficient	S.E.	C.R.	P
CS1	→	Customer Satisfaction	0.677	1.000			
CS2	→	Customer Satisfaction	0.852	1.239	0.081	15.232	<0.01
CS3	→	Customer Satisfaction	0.626	0.917	0.064	14.273	<0.01
WOM1	→	Word-of Mouth	0.590	1.000			
WOM2	→	Word-of Mouth	0.903	1.447	0.131	11.017	<0.01
WOM3	→	Word-of Mouth	0.542	0.878	0.073	11.972	<0.01
QCS3	→	Quality of Customer Services	0.560	1.000			
QCS2	→	Quality of Customer Services	0.952	1.659	0.154	10.794	<0.01
QCS1	→	Quality of Customer Services	0.575	1.072	0.084	12.694	<0.01
C3	→	Convenience	0.711	1.000			
C2	→	Convenience	0.912	1.263	0.081	15.506	<0.01
C1	→	Convenience	0.602	0.855	0.057	15.085	<0.01
ME3	→	Mall Environment	0.801	1.000			
ME2	→	Mall Environment	0.910	1.163	0.061	19.149	<0.01
ME1	→	Mall Environment	0.602	0.763	0.047	16.385	<0.01
QR3	→	Quality of Retailers	0.753	1.000			
QR2	→	Quality of Retailers	0.911	1.199	0.069	17.474	<0.01
QR1	→	Quality of Retailers	0.619	0.821	0.051	16.186	<0.01
R3	→	Rewards	0.579	1.000			
R2	→	Rewards	0.910	1.650	0.141	11.663	<0.01
R1	→	Rewards	0.615	1.074	0.082	13.086	<0.01



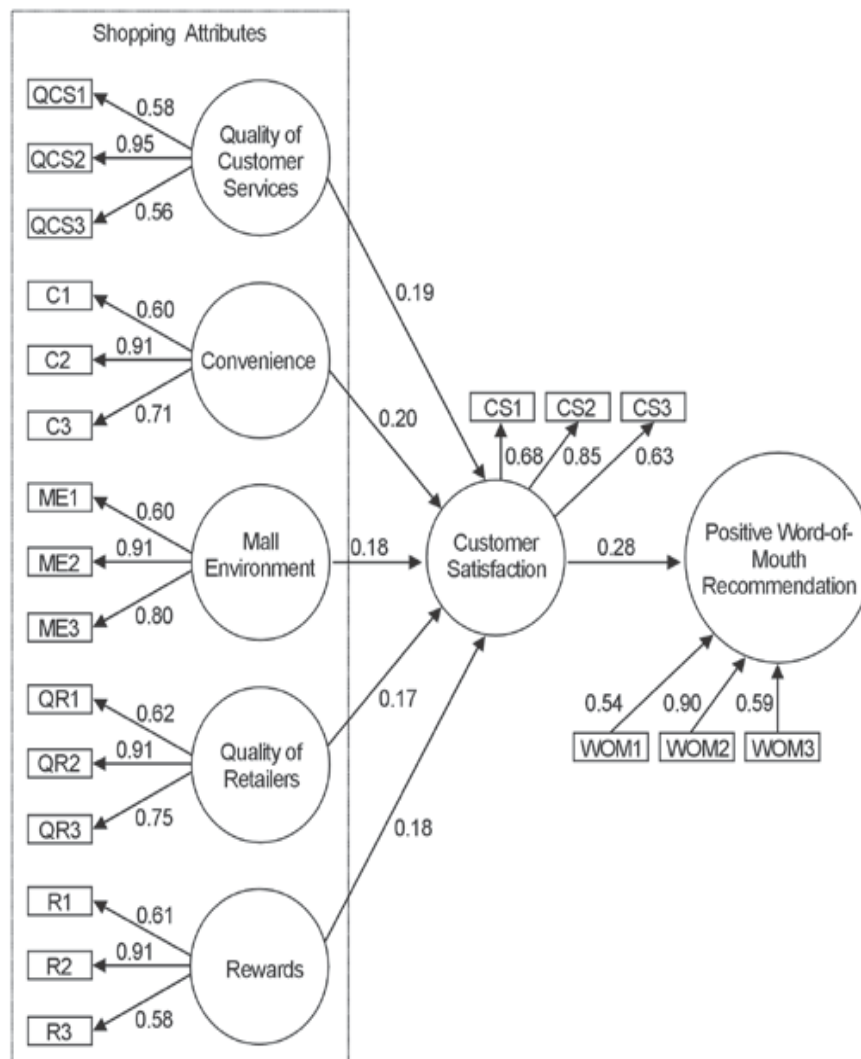


Figure 3 : Structure Equation Results – Positive Word-of-Mouth Model

## V. CONCLUSIONS

The objective of this study was to examine the influence of shopping mall attributes on satisfaction of IVS visitors, and the relationship between customer satisfaction and positive word-of-mouth recommendation. This empirical research was conducted in the context of IVS visitors after their shopping experiences in Hong Kong. Consistent with previous research findings, the research findings support all hypotheses of this study.

### a) Implications for researchers

This research has identified certain significant implications for researchers and shopping mall owners. First, Zafar et al. (2007) recommended that research of shopping mall characteristics in future should take wider international perspectives into account in order to enable comparisons, benchmarking and setting standards. This research targeted at surveying mainland China visitors shopping in Hong Kong.

Results of this research may be of interest to field researchers wanting to further explore traditional theoretical assumptions applied in the eastern context. Lee and Kacen (2007) recommended that researchers and practitioners need to be aware of cultural differences when applying western-based research findings to consumers in other countries. In this research targeted respondents were Chinese customers who came from Mainland China. As eastern economies expand, more customers from collectivist cultures are expected to indulge in impulse buying. This presents marvelous opportunities to marketing researchers who can further explore how best to enhance consumer satisfaction.

### b) Implications For Shopping Mall Owners

Research in psychology and organizational behavior areas has long recognized the importance of human motivation under different degrees of abstraction (Wagner, 2007). Apart from location convenience and product quality factors, prescriptive tactics of shopping

malls are also expected to provide customers unforgettable shopping experiences, ensuring high satisfaction level and re-purchase behavior. From a managerial perspective, customers' perceived experiential value can be improved and satisfaction can be enhanced by increasing quality of personal service encounters, attractive rewards and updating the layout and design of service facilities and environment frequently. Simply and effectively, listening to customer demands and resolving their problems are critical to retaining current customers and promoting positive word-of-mouth recommendation. Shopping mall management should lead from not only the top but also from the front, by showing frontline service staff how to be responsive and energetic in their customer interactions. Shopping mall promotion teams should consider not only customers' recreational shopping needs but also efficiency-related needs, including time constraints, particularly in case of single-day trips of IVS visitors. In addition, it is worth considering technology investments (i.e. Internet, mobile phone and personal portable devices) instead of the traditional textual messages with simple visual cues and signs to improve communication with customers.

#### c) *Limitations*

There are some limitations of methodology adopted in this research. First, it was difficult to motivate respondents to provide true personal information and opinion on each question. Though this has been a common problem encountered in research field, it is worth exploring ways of persuading respondents to express their true viewpoints. Second, data collection points were no more than three shopping malls because these shopping malls have features that connect with a public area in front of their main entrances. This encouraged mall owners to allow the survey. Had this interview survey been extended to other shopping malls without similar public areas, it would have been time consuming to obtain consent from mall owners. Third, it was complicated to distinguish respondents from South China and North China. Consumer preferences and attitudes in these two broad regions of Mainland China differ significantly. If data with such greater details can be collected for further analysis, consumption patterns can be identified in line with income levels.

#### d) *Future Research*

This research represents one of the very few empirical inquiries into a phenomenon of great managerial and academic interest. First and foremost, though this research does reveal certain aspects of positive word-of-mouth recommendation upon a certain extent of satisfaction after mall shopping in Hong Kong, there is still room for further research for ascertaining and enriching the findings. First, since the retail industry relies heavily on maintaining relationships with customers (Barnes, 1997), the theoretical model of this

research can be applied and further examined in the context of other kinds of shopping mall attributes, such as quality of hygiene and security, in order to enhance generalizability of common shopping mall attributes. Second, while requirements of minimum sample size have been met, all associations between variables in the population may not have been detected. It is highly recommended that future research consider a broader demographic profile representing multiple visitors (i.e. not only Mainland China visitors) coming from Asian countries such as India and Taiwan. Zafar et al. (2007) identified that consumers' shopping-related perceptions and expectations are likely to differ across countries or cultures throughout the world. Finally, Guanxi (literally, interpersonal connections) has been identified as one of the key factors leading to business success in Mainland China (Abramson and Ai, 1999; Davies et al., 1995; Lee et al., 2001; Luo, 1997; Tsang, 1998; Yeung and Tung, 1996). Hofstede (1980) stated that China is a collectivist culture where guanxi reflects norms involving social interdependence. Guanxi is based on the notion that relationships in the traditional Chinese society are hierarchical. This relationship hierarchy reflects social norms between ruler-subject, father-son, husband-wife, brother-brother and friend-friend. The norms that guide successful guanxi are that the humble cannot assail the noble, the distant cannot overrun the closer, and the individual cannot override the group (Yeung and Tung, 1996). Therefore, in the Chinese society, guanxi transcends business relationships to encompass all social relationships (Ambler, 1995). Future research in relation to Chinese customers should explore the guanxi factor. Furthermore, it is important to note that there are significant cultural differences between Southern and Northern China (Huang et al., 1994) because economic development of coastal provinces and in-land provinces has been uneven (Cui and Liu, 2000).

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## Fertilizer Sectors Pulls the Strings at Bourse Since 2001 To 2010

By Yasir Hassan, Saleha, Syed zeeshan haider & Naveed Latif

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**Abstract** - The purpose of this study is to see how much fertilizer sector is contributing in the economy of Pakistan, here we see some particulars performance i.e. sale, assets, equity, paid up capital, cash dividend, stock dividend etc. we have taken the data from 2001 to 2010 and run regression analysis and generate different results which we will discuss later. if only the government policies, technology improve then the sector could give its total output, which thus contribute to the economy of the Pakistan which will be benefited for all of us.

**Keywords** : fertilizer, organic and Capital.

**GJMBR - A Classification** : FOR Code: 140201,079902 JEL Code: Q16



*Strictly as per the compliance and regulations of:*





# Fertilizer Sectors Pulls the Strings at Bourse Since 2001 To 2010

Yasir Hassan<sup>α</sup>, Saleha<sup>σ</sup>, Syed zeeshan haider<sup>ρ</sup> & Naveed Latif<sup>ρ</sup>

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## I. INTRODUCTION

Fertilizers in Pakistan are playing an important role in the economy of Pakistan. They are contributing from 30 to 60 percent in different crop production regions of the country. If we talk about the consumption pattern then Pakistan stand at the no in the world, but if we see the growth of the sector then we come to know that the sector is not improving so much.

There are basically two main types of fertilizers

- Organic
- Inorganic

Organic fertilizers are bone meal, fishmeal, blood; etc. Inorganic manure is Nitrogen, potassium or any other chemical necessary in the need of plant growth.

Fertilizers are used to improve the quality as well as quantity of food, growth, production of the crop. Domestic production is marketed mainly by producers themselves, while imports are marketed most fertilizers are labeled garden fertilizer, lawn fertilizer, flower fertilizer, etc. time is best hope to improve per hectare yield if irrigation water and certified seeds are provided according to need and weather conditions are favorable so in Pakistan fertilizer sector is like a back bone of economy.

## II. LITERATURE REVIEW OF FERTILIZER SECTOR



The imports of fertilize registered a negative grant of 25.5% amounting US\$167.6 million as compared to US\$265.1 million in financial year 1999

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(ECONOMIC SURVEY REPORT 1999).

(The GM Finance, Fauji Fertilizer Company Ltd., Liaquat Javed Mian), said that the fertilizers are meeting the company requirements up to mark but if we see the consumptions pattern according to the world and Pakistan production then it is so much low, this point is according to the export point of view.

(The Manager Marketing Services, Engro Chemical Pakistan Ltd) according to him the fertilizers are important part of the feed and other components, and the production of the fertilizers is up to mark but they should improve the production to meet the universal requirements. Our country's food requirement was 17 million tons in the year 2000, which would reach to 25 million tones till 2020.

(Zaffar A. Khan, President Engro Chemical), spoke on "Certain perceptions about the fertilizer industry". According to him the fertilizers are not sincere with the environment this is because they are charging high prices, low quality and thus not satisfying the customers. So if we want to flourish the sector then we should implement the strict policies so that their sincerity could be true.

(Dr. Binyamin Khalid, the Technical Services Advisor, Engro Chemical Pakistan Ltd). Said the use of fertilizer is not poisonous. It has helped a lot to the economic development of the country and help Pak. He said that the use of fertilizer has increased the production from 8 mounds to 29 mounds per acre from last few years

The imports of fertilize registered a negative grant of 25.5% amounting US\$167.6 million as compared to US\$265.1 million in financial year 1999. The private sector should be encouraged to flourish,

appropriate steps should be taken for privatizing fertilizer factories, maximum incentives for fertilizer factories should be provided and efficient, experienced and trained persons should be encouraged and they may be provided with direct and indirect fringe benefits. (COPYRIGHT 2002 Economic and Industrial Publications)

Seasonal deliveries are split between Kharif and Rabi seasons. In Sharif 2002 deliveries amounted to 1 384 thousand tons of nutrients and in Rabi 2002/03 to 1 634 thousand tons of nutrients. On a three year basis the share of urea was 65.8 percent, DAP 18.0 percent, NP compounds 5.5 percent, CAN 5.7 percent and 5 percent of various other fertilizers November, December and January are the main

(Mian, A. & Javed, Y. 2005. The soil resources of Pakistan - their potential, present stage and strategies for conservation. Sector paper for National Strategy. 53 pp. Islamabad.)

### III. METHODOLOGY

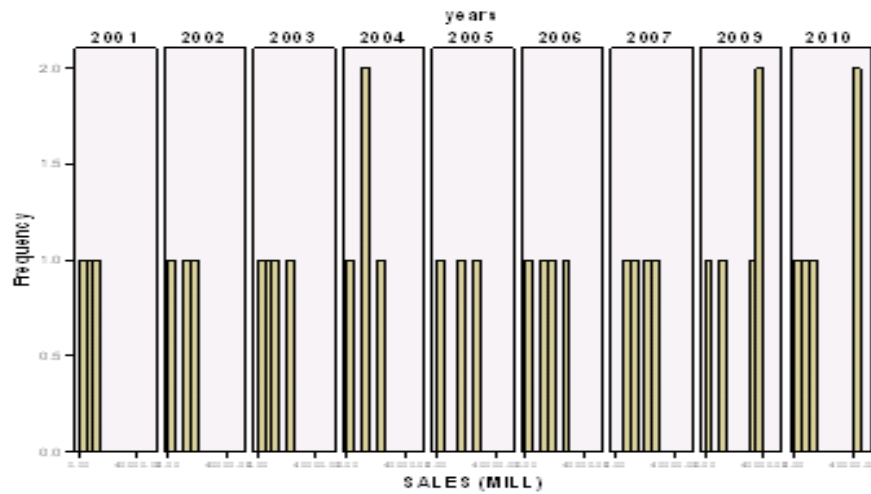
In this study one way ANOVAs test as well as others test are used, it is used to comparing the means from 2001 to 2010. multiple as well as regression model is used to known that the differentiate between variables which may be dependent or independent. Like sales paid of capital and others describe graphs also explain the fertilizers sectors ups and down in economy in ten years like area and line chart. We have also find out standard devotion mean and then coefficient of variance per year.etc.

First we will see how the different particuars are changig will the passage of time, so we will discuss the graphs first.

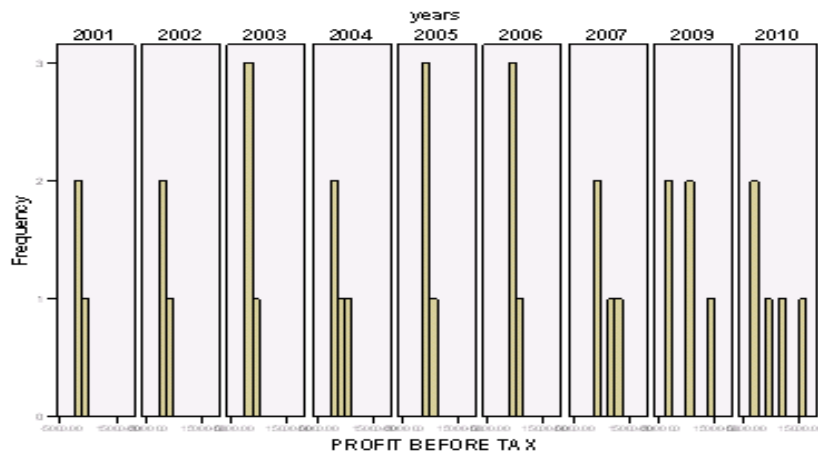
Graphs:



As from the table we see that the equity is more in 2003 and 2006 as compare to others years in others it remain almost constant.

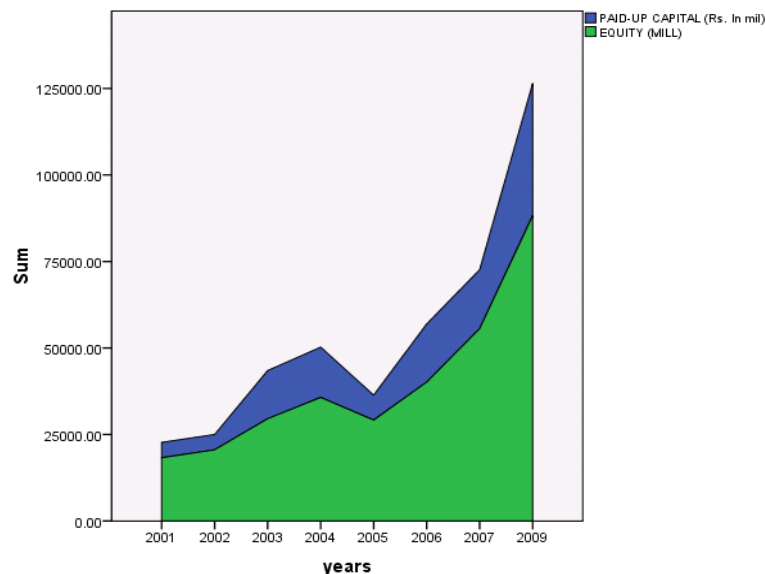


2009 and 2004 was the best year for sales as compare to others years this shows that sales were maximum in 2009 and 2010 and in others years it keep on constant. In other words sale mostly remain slowly growing

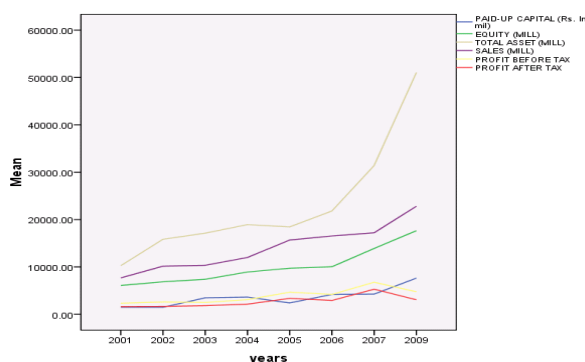


Profit before tax was maximum in 2005 and 2003 while it keeps on changes as to time as well. So profit keeps on increasing as well. While in 2007 and 2006 it was low and decline as well

AREA chart of paid up capital and equity



This graph shows that paid of capital is increasing slightly from first and then decline and star growing up while equity keep on growing year by year., paid of capital and equity have almost the same effect.



This chart tell us that in 2001 total assets of fertilizers sectors were small but in 2010 it was much high sales also to some extent increase randomly while profit after tax was keep on decreasing equity was almost the same slowly increased.

Now here we will show you the standard deviation, mean, variance and covariance of the different particulars.

#### Descriptive Statistics

	Mean	Std. Deviation	N
Sales (Mill)	19410.9798	13971.48388	21
Paid-Up Capital (Rs. In Mil)	5865.4601	5394.57397	21
Face Value	10.0000	.00000	21
No. Of Share	586.5460	539.45740	21
Equity (Mill)	13882.9775	5560.99047	21
Total Asset (Mill)	34418.0971	19129.49404	21
(Bank) / Financial Charges	685.6410	424.79154	21
Profit Before Tax	5198.9756	4521.12528	21
Taxation	1532.2805	1396.89801	21
Profit After Tax	3666.6951	3315.05367	21
Cash Dividend	64.8571	42.90808	21
Stock Dividend	20.4762	64.94045	21
Codes = 5 (Filter)	85.33	77.418	21

Equity assets was more high as compare to others while face value was low with stock and cash dividend

#### Variables

VARIABLES	year	Mean	SD	CV
Paid up capital	2001	1,522.672	1,045.083	68.683
	2002	1,042.288	1,045.083	1.0026816
	2003	2,810.263	4,621.534	164.4520
	2004	2,852.953	4,519.400	158.411

	2005	3,006.467	3,923.878	130.514
	2006	2,941.210	3,999.039	135.965
	2007	2,878.122	3,805.872	132.234
	2008	2,788.322	3,717.062	133.3082
	2009	5,816.960	6,624.333	1138.879
	2010	5,375.799	6,931.655	128.9418
equity	2001	1522.672	3073.386	201.841
	2002	1478.569	6478.603	438.167
	2003	3478.487	6860.833	197.236
	2004	3635.195	2552.716	7.0344
	2005	4131.455	5105.432	123.574
	2006	4196.711	7088.682	168.91
	2007	4259.799	380.587	8.9343
	2008	4349.600	752.293	17.295
	2009	7639.926	662.433	8.6706
	2010	8792.855	700.920	7.97147
Sales	2001	7684.414	4589.385381	59.7232
	2002	9,798.310	7016.926848	716.136
	2003	10,339.381	8136.745706	78.696
	2004	12,616.747	5667.251809	44.9184
	2005			



		15,682.648	11320.36095	72.1839
	2006	16,535.423	4494.205746	27.1792
Profit Before Tax	2009	51524.508	25949.2356	50.3628
	2010	39038.355	8121.87912	46.42047
	2001	2,335.884	2309.1124	.98
	2002	1,483.512	1969.288503	1.32
	2003	2501.230	1698.992309	.67
	2004	3088.207	2082.329337	0.67
	2005	4479.193	1845.394945	0.41
	2006	6641.863	1925.027801	2.94
	2007	654.446	1925.027801	2.95
	2009	943.512	254.8533596	0.27
	2010	870.248	576.4523989	0.02

Sales shows variable effect as its minimum CV was 50.3 so this means that it is rapid ally increase then decrease as well. Paid of capital and equity remain almost increasing par year, mean of profit before tax is showing variation. In the year 2008 its sales were not even to the break point so it was consider as zero.

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.994 <sup>a</sup>	.987	.984	351.28871

Predictors: (Constant), Stock Dividend, Total Asset (Mill) , Cash Dividend , Taxation, (Bank) / Financial Charges , Paid-Up Capital (Rs. In Mil) , Profit Before Tax , Sales (Mill) , Equity (Mill)

#### Explanation power of the model:

If we see the explanation power of the model then we come to know that the model explanation power is almost "99%" which depicts that all the variables are explaining the model very well and also the data is real time data.

#### Hypothesis:

H<sub>0</sub>: The model is not significant

H<sub>1</sub>: The model is significant

ANOVA<sup>b</sup>

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	2.900E8	9	3.222E7	261.095	.000 <sup>a</sup>
Residual	3702112.717	30	123403.757		
Total	2.937E8	39			

a. Predictors: (Constant), Stock Dividend, Total Asset (Mill), Cash Dividend, Taxation, (Bank) / Financial Charges, Paid-Up Capital (Rs. In Mil) , Profit Before Tax , Sales (Mill) , Equity (Mill)

b. Dependent Variable: Profit After Tax

If we see the significance value of the model we come to know that the significance value of the model is 0.00 which depicts that the model is significant. So we reject H<sub>0</sub> and accept H<sub>1</sub>.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	469.281	219.979		2.133	.041
PAID-UP CAPITAL (Rs. In mil)	-.055	.022	-.092	-2.461	.020
EQUITY (MILL)	-.004	.026	-.009	-.146	.885
TOTAL ASSET (MILL)	.009	.010	.064	.924	.363
SALES (MILL)	-.031	.012	-.141	-2.583	.015
(BANK) / FINANCIAL CHARGES	-.031	.263	-.005	-.119	.906
PROFIT BEFORE TAX	.828	.029	1.151	28.101	.000
TAXATION	-.070	.071	-.036	-.979	.335
CASH DIVIDEND	-5.586	2.466	-.086	-2.266	.031
STOCK DIVIDEND	-.832	1.397	-.015	-.595	.556

a. Dependent Variable: Profit After Tax

#### Now here is a regression model:

PAT = 469.979 - 0.055(paid up capital) - 0.004(equity) + 0.009(total assets) - 0.031(sales) - 0.031(bank charges) + 0.828(PBT) - 0.70(tax) - 5.586(cash dividend) - 0.832(stock dividend)

So the above model shows that by changing the 1 unit in paid in capital, equity, total assets, sales, bank charges, PBT, tax, cash dividend, stock, total dividend and no of shares respectively the PAT decrease by -.055, -.004, -0.31, -0.31, -0.70, -5.586, -0.832 and increase by 0.09 and 0.828 respectively

**Acceptance and non-acceptance of the model particulars:**

Here we will see the significance value then we come to know that which particular we should include and which should not.

Here we see that the sales, PBT, Paid up capital and cash dividend significance is lower than the 5% so we concluded that these particulars should be included in the model and should reject all the other particulars which have higher significance value i.e. equity, assets, financial charges, tax stock dividend will not be included in the model.

#### IV. CONCLUSION

From the above results we concluded that the fertilizer industry is growing with some normal pace in our country, this is because of the government policies, less latest technology, not operating their operations very well. Profitability is contributing less to the economy; the production is up to the mark but should be improved also the inefficiency of the management impacts on the prices of the fertilizers which at the end effects the consumers.

But if we see the opportunities then we realize that if only the government policies, technology improve then the sector could give its total output, which thus contribute to the economy of the Pakistan which will be benefited for all of us.

March 2012

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## Social Networking Sites: A Fad or a Breakthrough in New Age Recruitment

By Ms. Poulami Banerjee

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**Abstract** - Purpose: Today talent acquisition is one of the major challenges faced by the most of the companies in India. The age old techniques and practices of recruitment is gradually giving way to new and modern techniques of acquiring and building a talent pool for various industries. Social networking sites have become a rage amongst the young professionals today though elderly professionals are also making their foray into this field. With more and more people spending a substantial portion of their productive time on social networking sites, it has given a new turn to recruitment trends across the industry. The study explores the impact of social networking sites on the recruitment practices across various sectors in India. The study examines the impact of these sites both from the recruiter's point of view as well as the job seeker's point of view. It brings to the fore the various opportunities which have opened up due to the upsurge of social networking sites and also paves the way for the future prospects of the same.

*GJMBR - A Classification : FOR Code: 100503, 150305, 150307 JEL Code: O33*



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# Social Networking Sites: A Fad or a Breakthrough in New Age Recruitment

Ms. Poulami Banerjee

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**Design/ Methodology/ Approach:** The study has been conducted with the help of inputs received from various sources like publications and personal interviews with industry professionals. A comprehensive analysis of the shifting trend has been done and explained through various graphs and diagrams.

**Findings:** The findings of the survey has revealed marked shift in trend from traditional methods of recruitment to modern techniques like social networking sites. However there still remains enough room for improvement and tapping of various advantages through such sites.

**Originality/Value:** Provides foundation for insight so that the framework could be usefully developed for various companies and other industries to bring about a perfect job-talent match for the organization.

## I. INTRODUCTION

The year 2009 marked a rough phase for the Indian economy due to recession, however, things gradually improved for the Indian companies in 2010. The year 2010 once again witnessed a double-digit growth achievement for various sectors. The Indian companies remained upbeat on economic recovery and tapped growth opportunities in the emerging geographies due to the improved demand in the market. All this was possible despite setbacks in its main market United States.

The Manufacturing sector in India has been undergoing significant transformation over the last decade and a half. From being a sector deploying

suboptimal technology and servicing an import substitution market, the sector has come a long way. There are abundant examples of success stories of global scale and standards within the Indian manufacturing sector today and the sector is growing from strength to strength.

According to some analysts, year 2012 will be even more promising for the Indian manufacturing sector as a number of foreign companies plan to step up their collaborative investments in India. Also, in 2011, the focus will be on innovation and the manufacturing of products which will be at par with global standards.

As the Indian manufacturing sector is poised to take on the challenge of giving a tough competition to the global players, here's a look at how Indian manufacturing sector will shape up in 2011.

- Key Drivers:
  - a) Operational Improvement
  - b) Significant Cost reduction
  - c) Global competence
- Fortunately for the manufacturing sector, the relatively slow recovery in export growth has accelerated. Year-over-year growth in total export demand averaged 25 percent during the fourth quarter of 2010 and the first quarter of 2011, more than double the growth rate of the prior two quarters. Nonetheless, the prospects for persistent strength in export activity have to be questioned, given the slowdown in world growth
- Table 1 shows actual output growth data for FY 2010 and projections for FY 2011 and FY 2012. Consistent with a diminished thrust from public infrastructure investment as well as slowing economic growth, the forecast highlights our expectation of a slowdown in the output growth of capital goods and infrastructure-related sectors. As shown, machinery and equipment output growth is expected to moderate from 13 percent during FY 2010 to 11 percent during FY 2011 and 10 percent during FY 2012. Transportation equipment and parts output growth is expected to slow from 25 percent during FY 2010 to 13 percent during FY 2011 and then further to 9 percent during FY 2012.

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	FY 2010	FY 2011 (Forecast)	FY 2012 (Forecast)
Basic Chemicals	3	14	10
Basic Metals and Alloys	9	7	5
Metal Products and Parts	19	14	9
Nonmetallic Mineral Products	11	4	6
Machinery and Equipment	13	11	10
Transportation Equipment and Parts	25	13	9
Food Products	13	6	4
Beverages and Tobacco	-2	8	7
Leather	16	1	1
Wood and Wood Products	-21	-15	-10
Wool	0	2	11
Cotton	10	-3	2
Textiles	4	17	10
Jute and Other Vegetable Fiber	31	-8	0
Paper and Paper Products	8	8	1
Rubber and Petroleum	12	12	6

Table 1: (Source(s): Manufacturers Alliance/MAPI)

Thus with the plethora of opportunities available, talent acquisition through the right sources becomes one of the major human resource responsibility in order to augment the demand and supply gap in various industries.

## II. REVIEW OF LITERATURE

Studies reveal that 65 % of the time, the hiring process is the deciding factor in establishing whether the recruiter will get a good performer or not.

Social networking is one of the most sought out solution for sourcing and recruiting employees in companies as it offers an exciting means for linking employers and potential employees. Employee recruitment across levels has become more challenging as the market for qualified job applicants is shrinking. Giving advertisements in newspapers and internet-based job boards is expensive and it is a constant challenge to target the narrowly defined candidate types through mass advertising. This is when social networking becomes an emerging and an exciting imperative. As Ashish Garg, Director of Recruitment for Convergys Customer management operations in India, reveals, recruiters perform more than 30 % of their sourcing activities through social networking sites. They have a team of social media recruiting specialists and hope to develop many more such specialists in the next 12-18 months.

The Services giant EMC is a creative experimenter. It plays particular attention to how its 40,000 global employees use internal social media to locate needed expertise within the company. The social networking media is making its foray into enterprises as a well. The software applications that are based on social networking platforms are focused on two aspects-one, as a tool to monitor the social networks and other as a platform to connect and do networking. Enterprises are using social networking tools to do

brand and reputation management and also to acquire the required talents.

## III. ASSESSING RETURN ON INVESTMENT OF SOCIAL MEDIA HIRING

According to an article published by the Human Capital, due to shifting HR recruitment metrics, assessment of recruiting tools has become very important. Following are the ways of assessing the social networking tools in order to gauge their effectiveness:

1. **Influence:** Twitter influence is measured using tools like Twinfluence or Twitter Grader. Facebook business pages can also be measured with some beta tools like FB Grader.
2. **Traffic:** The goal of traffic is to specifically get people to look up the career website and possibly, specific job postings, which motivate them to apply for jobs.
3. **Chatter:** To measure chatter specifically about ones career opportunities, the interview / selection process and what it's like to work in the company etc., some of the influence tools mentioned above can be used but periodic auditing of the chatter and monitoring of the social media is equally important.
4. **Intelligence and candidate experience:** Focus groups or online surveys can be used for finding the candidate's experience.

Companies are taking this approach to embrace uncertainty, using small-scale tests to find ways to improve discrete functions and practices. They aim to learn by listening to customers and employees on platforms such as Twitter and Facebook. The HR fraternity is using social networking mainly for recruitment related activities. Professional sites like LinkedIn are helpful tool in sourcing various profiles. recruitment related activities. Professional sites like LinkedIn are helpful tool in sourcing various profiles.

a) *Objectives*

1. To understand the impact of social networking sites on the recruiters hiring practices
2. To identify the authenticity of these channels on the minds of the job seekers
3. To analyze the future prospects of these sites as a breakthrough in new age recruitment

## IV. RESEARCH DESIGN AND METHODS

**Sample design:** The present research study covers various companies across different sectors. "Random Sampling Technique" has been used for choosing the respondents.

**Data Used:** Both primary data and secondary data have been used for the purpose of study

- i. **Primary Data-** Primary data have been collected through the "Survey Method" with the help of structured questionnaires. Two types of questionnaires were developed: a) One for the recruiter and b) One for the job seeker. Questionnaires were administered personally for nearly 180 respondents and 100 were mailed out, out of these 264 (100 from recruiters and 164 from job seekers) valid questionnaires have been

received, thus the response rate has been approximately 94 %.

- ii. **Secondary Data-** Secondary data used have been collected through published books, articles in magazines and journals and Internet websites

**Questionnaire Development:** For the purpose of analysis, a structured questionnaire was developed in 2 stages as follows:

1st Stage: An exploratory study was carried out using personal interviews. This was done to understand the influence of social networking sites on the recruitment practices of the Human Resource Department of various firms and also to understand the usage rate and relevance for job seekers.

2nd Stage: Based on the findings of the exploratory study, a closed-ended questionnaire was developed which were then mailed out to different respondents as well information was collected through personal interviews.

**Scope of the study:** Employees from the following companies across different locations in India extended their cooperation as respondents for this study.

Companies	Recruiters	Job seekers
IBM	15	23
Amtek Auto Ltd.	10	20
NTPC	13	21
Tata Motors	17	25
Larsen and Toubro	6	15
Jindal Steel	12	20
Philips Electronics Ltd	15	22
Dr. Reddy's Laboratories	12	18

**Analysis technique:** The responses of the two types of questionnaires were analyzed with the help of graphical representations, bar diagrams and pie charts & analysis and conclusion drawn thereby.

## IV. RESULTS AND DISCUSSION

Recruitment trends of any industry are judged with the help of both the recruiters as well as the individuals seeking job in that industry. Therefore keeping this in mind, we have analyzed the influence of these sites from both the angles.

**Recruiters' perspective:**

- The most popular and widely used medium of recruitment in most of companies is through internal referrals followed by job portals. Preference of social networking sites is at par with print media. While other companies also recruit potential candidates through campus selection.
- Majority of the companies are using the social networking sites mainly as a supplementary tool for approaching potential candidates for filling up job vacancies. Recruiters feel as of now they cannot rely

only on one particular form of recruitment tool and have to combine various tools in order to attract the right talent for the right job vacancies.

- Recruiters are mainly using the social networking sites for searching talents in the middle management level positions, followed by top level management positions and then for lower level. The reason being, for lower level positions there is plenty of talent available in the market while for the top level positions not many individuals rely on these sites so experience has revealed the most lucrative segment is the middle level managers (Managers, Asst. Managers, Dy. Managers etc)
- Reference and background checks play a very important role in understanding an individual's psychology, behavior patterns, professionalism and sociability. So majority of the firms do refer to a candidate's social profile in order to get a deeper understanding of an individual and also to analyze the employee-job-fit.
- There has been a positive response rate of almost 63 % from most of the candidates approached for

job vacancies which shows the growing reliability of job seekers for this mode of placement

- Linked In tops the chart in the list of the most sought after recruitment site through social networking with 52 % firms using it to shortlist candidates, followed by Facebook (25 %) while 23 % firms under the survey preferred a combination of both.
- 72 % of the firms do not blindly rely on the information provided in the social networking sites of a candidate (even if it is the most professional site like Linked In). They always supplement it with proper reference checks and background checks
- These sites are mostly preferred for candidates with Niche skills
- Almost 83 % of the firms feel that social networking sites will revolutionize the trend of recruitment and will emerge as a new age tool for recruitment with only 16 % saying that is an overhyped tool for recruitment
- Sociability is the most important aspect of one's personality that is judged through these sites to some extent. Behavior and psychology is also judged in order to ascertain proper cultural fit for the organization.

#### *Job seekers' perspective:*

- Most of the job seekers, today, have their profile uploaded on both Facebook as well as Linked In while Orkut is gradually losing ground.
- The survey has also revealed that on an average respondents have been active on the social networking sites for more than 2-3 yrs
- Most of the professionals spend approximately 21-30 hours every week on these sites
- Information pertaining to both jobs and socializing are the main motivators for being active on these sites.
- Linked In tops the charts when it comes to approaching potential candidates through social networking sites followed by Facebook
- Referrals for jobs through acquaintances still remains the most favored source to getting placed while social networking sites are closely gaining ground on this front as well.
- A majority of the respondents have admitted that they provide authentic information about their professional backgrounds in these sites which shows the growing levels of seriousness amongst professionals for this mode of job hunting
- Candidates view companies recruiting through these sites as having good employer branding and modern and up to date. They feel that these companies know how to blend into the existing trends of the market thus work culture is expected to be global and employer friendly.

## V. RECOMMENDATIONS

The findings above have revealed that social networking sites are indeed a breakthrough in new age recruitment. Its merits coupled with certain drawbacks are gradually coming to the forefront. However the advantages of this modern technique of recruitment by and large outweigh its demerits. Thus certain recommendations have been laid down in order to improvise its usage and implementation:

1. **Cheaper alternative-** Social networking sites can be used as an exciting imperative and a cheaper alternative to advertisements in newspapers and job portals given the mounting expenses and the requirement for targeting a narrowly defined candidate types through mass advertisement. It also gives an opportunity to engage with passive job seekers.
2. **Candidates' psychology-** The wealth of information that is available on these sites can be used for understanding the psychology of the potential candidates and thus helps us in understanding the employee-job-fit. This will not only give a boost to successful recruitment but also help in enhancing employee retention initiatives.
3. **Employer branding** is the latest buzz word in the business world today. These sites can be effectively used by organizations to establish themselves as good employer brands in order to attract the best talents of the industry.
4. **Niche skills-** With people spending almost 30 % of their online time on social media, this medium can be initially utilized for tapping people having niche skills followed by an all pervasive approach at a later stage as the study above has revealed that job seekers respond quite positively to opportunities offered to them through these sites.
5. **Early adopters-** Companies which can gain the first movers advantage will remain ahead of its competitors who might face entry barriers afterwards. It always pays to be constantly updated with the latest trends of the market. So it's always better to be an early adopter and encash on the situation when the completion is low.
6. **Training and motivational sessions-** Organisation can also implement this new strategy through planned phased out training and motivational sessions for their recruitment team. They need to highlight the benefits and ways in which recruiters can tap potential talents. For example, alumnus is an important pool and social media is emerging as a convenient platform to keep in touch with them.

## VI. CONCLUSION

The social media recruiting is here to stay and with the combined efforts of both the recruiters as well as the job seekers it will revolutionize the recruitment

metrics and practices. As of now in order to reap the benefits of this medium, we need to run it in tandem with other recruitment channels as well. However, its success and importance will depend on the reach, cost and the kind of people it attracts. Thus, it very important to target the right professionals for the right job.

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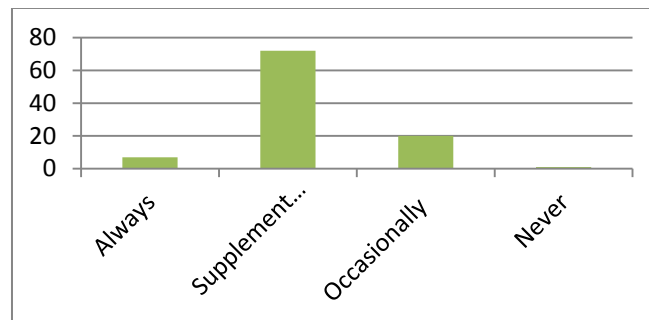
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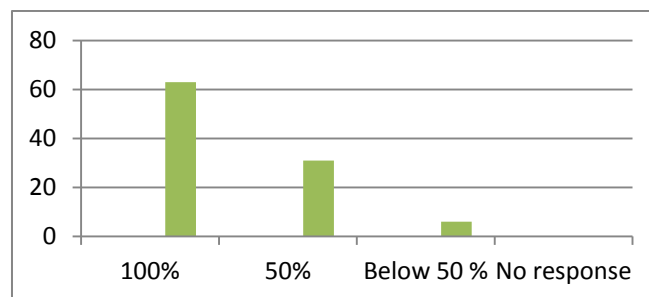
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3. [www.hrotoday.com](http://www.hrotoday.com)
4. [www.ad-ition.com](http://www.ad-ition.com)
5. [www.smeworld.org](http://www.smeworld.org)
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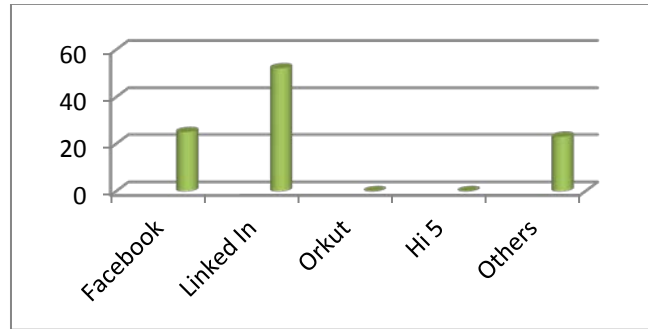
Recruiters use social networking sites mainly as a supplementary tool



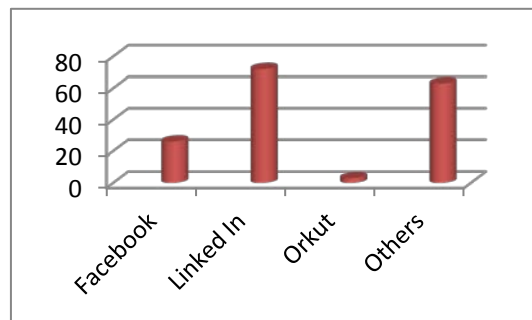
Response rate of candidates approached through social networking sites



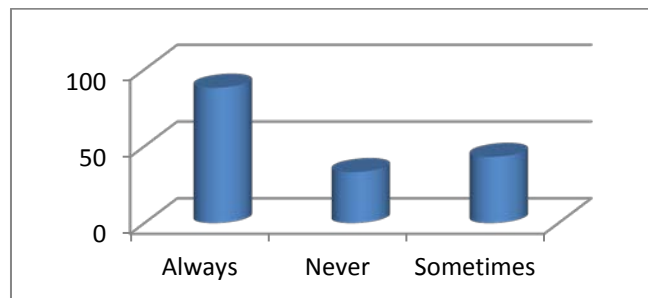
Popular networking sites being used increasingly for recruitment



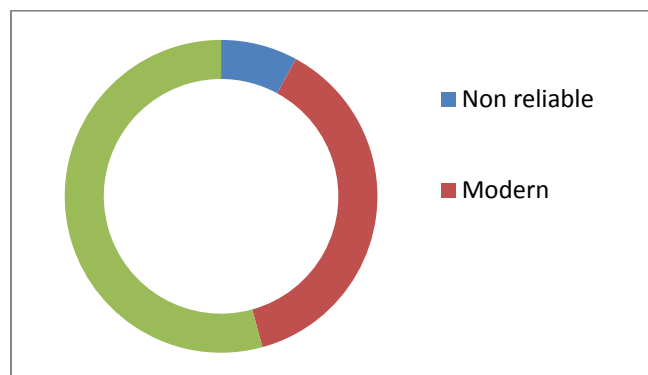
*Job seeker's perspective:*  
Sites mainly offering job opportunities



Authenticity of information given by job seeker



Opinions about companies recruiting through social networking sites







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## Stress Management in the two most well-known intensive labor oriented shrimp processing factories of Khulna city, Bangladesh

By Sadia Afroj

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**Abstract** - Workplace stress is a frequent setback facing most of the cases by the managers at all levels in all types of organization. Although stress is inherent in life and human workplace stress is not confined to the workplace, but it is frequently brought home as well increasingly, employers, trade unions, and health and safety representatives at work are finding guidance on the nature and causes of the problem and on the organizational requirements relating to its prevention and control. A number of factors are considered here, for example, the multidimensionality of the nature of workplace stress, the definition of stress, the direct relationship between stress and behavior, coping with stress and the diversified stress management strategies taken by the management of different organization. In labor oriented shrimp processing factories the promptness of stress very common and in the light of those incidents the stress handling strategies are taken accordingly.

**Keywords** : Stress, stressor, workplace stress, stress management, satisfaction level.

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## I. INTRODUCTION

The multidimensionality of stress, according to Hogan and Joyce (1982), is evidenced by the fact that it takes different forms and is the concern of different fields, for example, Clinical and Applied Psychology, Anthropology, Sociology, Psychosomatic Medicine, Industrial Relations and Epidemiology. Stress can influence individual behavior either negatively or positively. It is first necessary to understand the person and environmental circumstances before the cause of stress is understood researcher find that the environment must be dealt with first, which means that multiple variables have first to be tackled and stress which can be detrimental to health. Pressure is part and parcel of all work and helps to keep us motivated; but if demands and pressures ('stresses' and 'stressors') become too great, they can induce, in anyone, the harmful or potentially harmful mental and physical Manuscript received "Date 15<sup>th</sup> January 2012" feelings and reactions commonly known as 'stress'. If key stuff or a large number of workers are affected, work stress may challenge the healthiness and performance of the organization. Unhealthy organizations do not get best from their workers and this may affect not only their

performance in the increasing competitive market but eventually even their survival. Shrimp industry is one of the biggest industries in Bangladesh. Secondary studies extensively indicate that the Shrimp industry of Bangladesh is one of the most important contributors for economic sustenance at present and is the second largest export commodity of the country. In addition Bangladesh produces 2.5 percent of the global production of shrimp generating more than US\$300 million annually. But recently the industry suffers from significant production inefficiencies and is exposed to important social and environmental risks. The sector suffers from a lack of vision and strategic direction. However, the contribution of the industry both in terms of helping the poor as well as earning foreign exchange is immense and thus is considered by many as the future prospect of the country. Therefore, to research on Stress Management in Shrimp Industry is a consequential issue.

## II. OBJECTIVES OF THE STUDY

The title of the report reveals the objectives.

1. To explore the sources of stress in shrimp industry of Khulna city
2. To detect how individuals are coping with stress
3. To find out what the organization is doing to reduce the stress level of the employee

## III. SCOPE AND METHODOLOGY

The scope is limited within the analysis of the sources of stress in shrimp industry and how the individual employees are coping with it and also enclose what the organizations are doing to reduce the level of stress of its employees. Information is collected through questionnaire survey to the employees and managers of the shrimp industry situated in Khulna region.

For secondary data, various web sites, books and journals are used to get the needed information. The samples have been taken on judgment sampling method .5 point Likert scale is used for measuring the satisfaction level of the steps taken into account to manage the stress of the employees. Study instrument is questionnaire and a 5 point Likert scale is used as the questionnaire type. 5 point Likert scale is stating the

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agreeableness and disagreeableness to each of the statement regarding their experience. *Scores assigned to the categories are "5 for highly satisfied", "4 for satisfied", "3 for Indifferent", "2 for dissatisfied", and "1 for highly dissatisfied"*

#### IV. STRESSORS AT SHRIMP INDUSTRY OF KHULNA CITY

To get the true picture of stress level and stress management in the shrimp industry in Khulna city, two firms have been surveyed. These are Gemini Sea Food Ltd. and Oriental Fish Processing and Culture Ltd.

Gemini Sea Food Ltd. (GSFL) is a renowned frozen shrimp exporter in Bangladesh. GSFL acquires shrimp from the cultivators, processes it in their own plant and exports to the USA, UK and other Eastern countries. The Head Office of GSFL is in Dhaka, Branch office is in Khulna and factory is in Rupsha. In Khulna their main office is in Ahsan Ahmed road. It is a production-oriented firm and has 300 workers in the factory. They work in two shifts consists of 12 hours each

Oriental Fish Processing and Culture Ltd. (OFPCCL) is a shrimp processing company, started its operation on the year 1991. It also exports the shrimp product to UK, USA and in some other European countries. It has 69 regular workers in the factory. And all of them are female. But at the peak season it hires some workers on a contractual basis. Both the head office and factory are situated in Khan-A-Sabur Road, Khulna, Bangladesh.

The shrimp processing industry operates only in a specific season of the year. The peak season for shrimp collection and processing is from March to November. So there are so many reasons to create stress to the workers at the peak season. Some of these affect the physical health of the workers and some indirectly affects their performance. Which may lead to lesser productivity, lesser quality performance or it may increase absenteeism or turnover. The main reasons of generating stress in the work place are segregated in two main sections-

- ✓ Organizational stressors
- ✓ Life stressors.

While working in the office or factories the employees may face external and internal pressure for a number of reasons. For individual, whether he/she is a worker or manager, individual stress can have an effect on him/her work. The stressors are

**Poor lighting system/ Ventilation:** In case of Gemini Sea food Ltd. both the ventilation and the lighting system inside the factory is at a standard level. On the other hand Oriental Fish Processing and Culture Ltd. the lighting and ventilation is quite standard for the comfort level of the workers. Both the firms have got company fitness certificate from EU and USFDA. It has

been found from the survey that the ventilation and lighting system of both the factories have a very little role in creating stress among the workers.

**Congested work space:** In GSFL the factory layout is properly organized and the workers has appropriate space to do their assigned work in the right way. Despite being smaller, OFPCL is also maintaining a properly-planned working condition for the workers

**Uncomfortable temperature:** Working under extreme temperature for longer time causes stress for the workers. The same result is occurred when the workers need to work long time in improperly heated or cool factories. In GSFL some of the employees feel a little stress while working under the low temperature. OFPCL workers are also prone to get stressed under the low temperature.

**Overcrowding:** Both the factories hire contractual laborers when they have to finish any order within a shorter stipulated time. In GSFL some of the employees feel stress while they have to work in an overcrowded environment. Their concentration gets hampered in such a condition. In the firm OFPCL, the workers are also tending to get stressed under the overcrowding surroundings. It hampers their free movement and also create conflict among the workers.

**Occupational danger:** In case of processing the workers need to work with unsafe devices like knife, scissors. Without using proper safeguard like gloves or musk increase the accident probabilities and health hazards.

**Ambiguous role -no clear instruction about roles:** The quality and productivity also decrease as a result of ambiguous role of the workers. In GSFL it has detected that the workers sometimes get confused with their role inside the organization. They are not provided with clear cut instruction from their supervisors to do their job. This problem is prominent mostly in the management level. Role ambiguity is also one of the sources for raising the stress level of the employees of OFPCL.

**Life Stressors:** Outside the organization some critical incidents may take place in the life of the workers. Most of the time this change bring burden for the workers such as Constant family pleasure Increase demand because of family expansion. For example for the new born baby the family demand also increased as well as cost. Increased emphasis on education, price level fluctuation, diversified demand pattern create huge pressure and that brings stress

#### V. CONSEQUENCES OF STRESS

Stress can have a number of consequences. If the stress is positive the result may be more energy, enthusiasm, and motivation. But from the survey it is found that the stress the employees are encountering are negative stresses most of the time. It can produce

individual consequences, organizational consequences and burnout as well. The individual consequences of stress are the outcomes that mainly affect the individual performance. The organization also suffers by the individual consequences of stress. Some times directly and some times indirectly stress hampers the organizational output but the stressed people pay the real price. The individual consequences directly affect the organizational performance. Most of the time stressed workers decline the overall organizational performance or bring negative changes in their attitude. The organizational image also hampered by the direct effect of stress.

## VI. COPING STRATEGIES: AS WAY TO BATTLE WITH STRESS

In today's competitive business world, huge work pressure to increase productivity, improve quality and cost control, constant deadlines from the organizations as well as from family, tough and vulnerable economic condition, desire to get faster and better result impose people to engage most of their time at work. It can indeed increase performance, higher profit and faster growth, but it may create stress and other side effects. If any organization wants to achieve the expected profit level they cannot avoid themselves from stress. Because the current demanding environment bound them to act such way. So the organization as well as the individual wants to adjust with the stress in positive way to keep it minimum and also overcome from the unexpected situation. To survive up with stress, different endurance strategies are taken individually and by the authority of the organizations.

To keep the stress level minimum the organizational coping strategies are ;

- ✓ Ensure pleasure work design
- ✓ Convenient work schedule
- ✓ Increase employees' autonomy & control
- ✓ Keep employees up-to-date with technology
- ✓ Increase employee's involvement in decision making
- ✓ Employee fitness program
- ✓ Reward
- ✓ Avoid unnecessary competition

## VII. STRESS MANAGEMENT IN THE ORGANIZATIONAL EDGE

Most of the cases stress is extensive and disrupt the normal organizational activities. So it is essential to control stress most effectively and manage it effectively. In different organizations stress management strategies have been developed in different ways. According to the requirement of the employees and workers, stress management policies are designed there. The authority always try to design their job in such a way that it can maintain a smooth

working environment by keeping the minimum stress level so that it may not hamper the usual working atmosphere.

For controlling, managing and minimizing the level of stress in the organization, the authorities of Oriental Fish Processing and Culture Ltd. and Gemini Sea Food Ltd., have taken some strategies. The satisfaction level of the workers and the employees are measured on the basis of the acceptance of the measures taken for them.

### Job Security & Career Development

**Opportunity:** Job security increases the deliberation and contribution to job. On the other hand career opportunity keeps the workers in their existing job. Oriental Fish Processing and Culture Ltd. and Gemini Sea Food Ltd., provide job security and career development opportunity within a package which contains adequate Job Security and Certain Salary structure and regular Increment.

*Table 1:* Career and development opportunities of the organization

Career & Development opportunity	No. of employees	% of employees
Highly Satisfied	17	85%
Satisfied	2	10
Indifferent	1	5
Dissatisfies	0	0
Very Dissatisfied	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

*Source: Field Survey*

From the above table and chart it is obvious that the large portion that is, 85% of the employees are highly satisfied with the measure taken to reduce the degree of stress of the employees. And rests of them are satisfied. Both organizations are successful to manage stress in their workstation.

**Emphasize to improve the Physical condition of the organization:** The physical condition of the factory must have to be well-organized to maintain the predetermined requirement of the exporters. It includes proper lighting, ventilation, adequate work space, wash room facility, fire exit and extinguisher, spacious stairs etc.

Without being properly accepted by the global importers, the firm could not get the fitness certificate, which is an essential prerequisite to get the order. So the firms maintain the physical condition for its own sake, and this eventually help the workers to trim down their stress level.



*Table 2* : Physical condition of the organization

Improve the Physical condition of the organization	No. of employees	% of employees
Highly Satisfied	18	90%
Satisfied	1	5
Indifferent	1	5
Dissatisfies	0	0
Very Dissatisfied	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

*Source: Field Survey*

With out the fitness certificate no organization can get the permission to start their business. For this reason both organizations is trying to maintain a standard working environment for the workers. From the above table I can easily find that 90% of the workers expressed their higher satisfaction about the working environment. Rest of 10% said they are satisfied and indifferent about the issue divided into two parts equally

**Reward and Incentive Structure of the Organization:** To encourage performance improvement and provide a stress free working surface both organizations arrange different programs like;

- ✓ **Picnic:** Seasonal picnic arrangement is common in both of the organizations.
- ✓ **Occasional gift:** In different occasion like Eid or Puza the management facilitates the by providing special leave, dress, special feast etc.
- ✓ **Sports and cultural program:** For the entertainment of the workers in different occasion the management arrange sports and cultural program

*Table 3* : Reward and incentive structure of the organization

Reward and incentive structure of the organization	No. of employees	% of employees
Highly Satisfied	13	65%
Satisfied	3	15
Indifferent	2	10
Dissatisfies	2	10
Very Dissatisfied	0	0
<b>Total</b>	<b>20</b>	<b>100%</b>

*Source: Field Survey*

From the total workers above table I can see the more than average workers are highly satisfied with the reward and incentive structure of the organization.

**work place Counseling:** Proper counseling is a important aspect to provide mental support to the workers. When they get the opportunity to disclose and discuss their problems with the counselor. In both of the factories there is no option to get professional

counseling facility. But the workers may have a discussion with their superiors in case of problems and if needed they can go to higher authority for solving the trouble.

*Table 4* : Counseling at work place

Counseling at work place	No. of employees	% of employees
Highly Satisfied	0	0%
Satisfied	6	30%
Indifferent	12	60%
Dissatisfies	2	10%
Very Dissatisfied	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

*Source: Field Survey*

Because the absence of professional counsellor, most of the workers expressed that they are indifferent about the organizational counselling. The workers are not that much aware about the significance of counselling at work place.

**Insurance facilities:** For shrimp processing industries, workers need to work under such a situation where there are several reasons to cerate hazardous situation. Problems like-skin diseases, breathing problem, high blood pressure, dizziness are very common. Both the organizations provide health insurance facilities for all workers.

*Table 5* : Insurance facilities

Insurance facilities	No. of employees	% of employees
Highly Satisfied	4	25%
Satisfied	12	60%
Indifferent	1	10%
Dissatisfies	2	5%
Very Dissatisfied	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

*Source: Field Survey*

From the very beginning both of the organizations provide necessary insurance facilities for its permanent workers. 25% workers are highly satisfied with the available insurance facilities. But 60% of the workers expressed their satisfaction and also expressed their expectation to increase the available facilities.

**Communication and information flow:** As a result workers get necessary information they needed and convey their requirements to the higher authority. For stress management this communication flow works as a tonic for the workers as ill as management. Because here workers can be relaxed, that they will get proper instruction from management about their duties.It



will not create any uncertain work demands from the organization and keep the workers free from stress.

*Table 6 :* Communication and information flow

Communication and information flow	No. of employees	% of employees
Highly Satisfied	16	80%
Satisfied	2	10%
Indifferent	2	10%
Dissatisfies	0	0%
Very Dissatisfied	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

*Source:* Field Survey

The workers expressed their higher satisfaction, it is 80% that they get necessary instruction and information from higher authority.

**First-aid and medical facilities:** At the time of full demand, worker need to stay at the organization longer time than they do other seasons. So stress becomes is a common incident here. The probability of small accidents also increases. It includes cutting hand, dizziness, headaches etc. At these events they are provided with first-aid facilities.

*Table 7 :* First-aid and medical facilities

First-aid and medical facilities	No. of employees	% of employees
Highly Satisfied	11	55%
Satisfied	3	15%
Indifferent	4	20%
Dissatisfies	2	10%
Very Dissatisfied	0	0%
<b>Total</b>	<b>20</b>	<b>100%</b>

*Source:* Field Survey

Because of delayed treatment, about 20% workers are dissatisfied with the prevailing medical facilities.

**Work flexibility:** Hard and fast rules does not work always to improve the Productivity, rather it can create unnecessary pressure and stress and reduce the productivity ultimately. It is true that there is no option of time management, but work freedom inspires the workers to work more with eagerness. Though the workers of both of the organizations enjoy monthly fixed salary facility, but the organization always try to maintain a standard level productivity. The organizations does not fixed the working hour very strictly, rather they provide the flexibility to interchange the shift among the workers if they need to.

*Table 8 :* Flexibility and Freedom at work

Flexibility and Freedom at work	No. of employees	% of employees
Highly Satisfied	16	80%
Satisfied	1	5
Indifferent	3	15%
Dissatisfies	0	0.00
Very Dissatisfied	0	0.00
<b>Total</b>	<b>20</b>	<b>100%</b>

*Source:* Field Survey

Because of the presence of exchanging shift facilities, 80% workers are highly satisfied by the flexible work environment of the organizations.

**Conflict handling at workplace:** The management of these processing factories always ready to assists through their straightforward activities regarding to manage conflict at the organization. To minimize the stress level and avoid any unexpected situation the authority always keep the conflict minimum between employees/workers with higher authority. Normally conflict is created with the temporary workers who are haired in the peak season of shrimp. But the problem is handled very tactfully with the conductors. The management is very much cautious to wipe out any kind of disruption and keep away their permanent workers such type of situation.

*Table 9 :* Conflict handling at work place.

Conflict handling at work place	No. of employees	% of employees
Highly Satisfied	15	75%
Satisfied	5	25%
Indifferent	0	0.00
Dissatisfies	0	0.00
Very Dissatisfied	0	0.00
<b>Total</b>	<b>20</b>	<b>100%</b>

*Source:* Field Survey

All the workers are highly satisfied about the actions taking by the authority in different problem situation. The effectiveness of the management helps the workers to keep stress free most of the time. 100% workers agreed that the management as well as the higher authority is very much conscious in solving any conflict immediately.

**Other Stress Management Arrangement:** For stress management at the organizations higher authority have taken some other strategies as:

- ✓ Walk-around inspection
- ✓ Monitoring
- ✓ Regular supervision of quality control department
- ✓ Consult with association

The level of stress in both the organization is at its minimum. As a result the organizations need lesser managerial responsiveness towards stress management at work place. Till now none of the companies have encountered any law suite regarding its HR activities and have achieved USFDA certificate and environment friendly certificate from the authority.

## VIII. CONCLUSION

The term "job stress" is a buzz word today and peoples of all the level of the organization are facing it continually throughout the world. The Shrimp industry of Bangladesh is one of the most important contributors for economic sustenance at present and is the second largest export commodity of the country. The survey result depicts that the workers of the industry or more or less optimistic to their personal and professional life. Most of them poses external locus of control and they are fine with what they get from the life. Some of the workers get stressed mostly from monotonous work nature, temperature of the workplace. They are also stressed with job insecurity, excessive work load at peak-season, lack of advancement opportunity. Even they are inclined to get stressed by the personal life that is of changing life style, violence at home, price hike etc. The effect of occupational stress could be individual or/and organizational. It has been found that people are encountering some physical and psychological problems while they are under stress. The organization also face some crisis comes from individual problems such as poor performance level, drop the productivity & quality, increased absenteeism, being irritable dealing with other and so forth. But after all most of the employees are concerned about their organization and they care for their workplace as their second home. The firms have taken several steps to manage the stress pattern and these includes providing adequate job security, forming a certain salary structure, improving the physical condition of the organization, arranging annual picnic, providing occasional gift etc. But there is the absence of professional counseling and the workers are not provide any formal training to cope up with job stress.

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## A Statistical Evaluation of Factors That Attract Customers to Banks in Lagos, Nigeria

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**Abstract** - Economists consider the banking system the heart of a country's economy because it pumps the money through the economy thus driving production, exchange and its growth. Competition in banking industry has become acute since the late 1980s liberalisation of the sector; it was intensified after 2005 consolidation, the keenest aspect of the competition is the competition for deposits. Nigerian banks have deployed an array of tools to position themselves for this battle for deposits, ranging from glitzy branding and marketing campaigns to the deployment of smart marketing staff. These banks also attract customers with the deployment of e-banking solutions and the construction of an ever-increasing number of branches. This work set out to find out the factors that affect the decision by individuals to open bank accounts in a particular bank, with a view to using statistical tools to evaluate the relative importance of each factor that attracts customers to a particular bank, determine the strongest factor, and also depict some types of products/services banks should include in their array.

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# A Statistical Evaluation of Factors That Attract Customers to Banks in Lagos, Nigeria

Adamu M.O.<sup>α</sup> & Adeola B.S.<sup>α</sup>

**Abstract** - Economists consider the banking system the heart of a country's economy because it pumps the money through the economy thus driving production, exchange and its growth. Competition in banking industry has become acute since the late 1980s liberalisation of the sector; it was intensified after 2005 consolidation, the keenest aspect of the competition is the competition for deposits. Nigerian banks have deployed an array of tools to position themselves for this battle for deposits, ranging from glitzy branding and marketing campaigns to the deployment of smart marketing staff. These banks also attract customers with the deployment of e-banking solutions and the construction of an ever-increasing number of branches. This work set out to find out the factors that affect the decision by individuals to open bank accounts in a particular bank, with a view to using statistical tools to evaluate the relative importance of each factor that attracts customers to a particular bank, determine the strongest factor, and also depict some types of products/services banks should include in their array. The main analysis was done with the use (aid) of SPSS's version of full profile conjoint analysis, where the utilities of the profile cards were analysed. However it was deduced that security of funds was the most considered factor, followed by customer relations, but the least considered was interest rates. A small descriptive analysis was done, and the result confirms what we deduced from conjoint analysis. Banks are advised to include savings plus into their array, employ smart staff and train them to be efficient and friendly, provide Automated Teller Machine ATM in strategic locations, and ensure branding right product for the right set of people or organisations.

## 1. INTRODUCTION

The First Bank Of Nigeria plc was established in 1894, known as Standard bank, then Union Bank of Nigeria Plc also known as Barclays bank, WEMA bank also started as Agbomagbe, so many banks came afterwards. Banking was done manually before the use of computer.

Up till 1980's, banks were practising what you can call ARMCHAIR BANKING, because then bankers do not do marketing, they do not bother about treating customers right or acting fast, rather they use tally numbers etc, and the time spent by customers in the bank was much, but by 1990 banks started using computer fully which further strengthened the banks by reducing the average waiting time of customer, thereby drawing more customer to the banks. Increase in branch network became imperative for banks, and also easier

for customers to have access to their funds on time. Introduction of great banking software that enabled the banks official serve their customers better. Almost all banks are now fashioning out good products that are Customer Friendly.

The study sought the investigation of major factors that attracts customers to a particular bank, which of the factors is the most considered, and also what banks should include or remove in their array of products/services.

Clarkson et al. (1990) study suggests that the characteristics and financial service requirements of consumers vary with age, and that these differences could be used in developing marketing strategies for such services. A paper of Boyd et al. (1994) reveals that reputation, interest charged on loans, and interest on savings accounts are viewed as having more importance than other criteria such as friendliness of employees, modern facilities, and drive-in-service. Stafford (1996) stated that demographics continue to be one of the most popular and well-accepted bases for segmenting markets and customers. Even if others types of segmentation variables are used a marketer must know and understand demographics to assess the size, reach and efficiency of the market. The general conclusion of this study is that there is a significant relationship between demographics characteristics and the service quality perception.

Banking services are characteristically different from physical products and as such the focus of differentiating customers based on these should be multi-faceted, various studies Zeithamal and Bitner (1996); Lovelock (1996); Legg and Baker, (1996) found banking services being closely related to intangible like Trust, Commitment, Transparency, Inseparability, Heterogeneity. Effective positioning reflects how customers perceive the products, factors that make the customer satisfied and whether customers behave differently with different factors while choosing a bank.

Customer Satisfaction has a close relationship to customer retention, in this regards, studies on customer segmentation and bank selection criteria along with customer satisfaction were done Snow et al (1996) and Furrer et al (2000). Their studies conclude that there were clear differences in the services expectation for retail banking.

Moreover, market segmentation and customer satisfaction have been largely affected by banks

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massive involvement in technological banking activities. Keeton (2001) found that some customers willingly pay high service charge since they are receiving e-banking services at the next footstep, however some people still believe in personalised attention instead of technological investment which may bring along increase in cost.

Authors such as Luce and Tukey (1964) and Krantz, et al (1991) explored the behavioural axioms that would enable a decomposition of an overall judgment using Conjoint Analysis. In a seminal paper (Green and Rao (1971)), they drew upon this conjoint measurement theory, adapted it to the solution of marketing and product-development problems, considered carefully the practical measurement issues, and opened a flood-gate of research opportunities and applications.

Conjoint Analysis is a tool that allows a subset of the possible combination of product features to be used to determine the relative importance of each

feature in purchasing decision, it is based on the fact that the relative values of attributes considered jointly can be better measured than when considered in isolation. It is a technique for measuring consumer preference for products or services, taking attributes of the products/services into consideration. The remaining parts of the paper are as follows: Section 2 presents the methodology. Section 3 involves the analysis of data and results. Simulation results are presented in section 4 and finally, section 5 concludes the study.

## II. METHODOLOGY

In this work, six factors that determine the choice of a bank were considered at different levels. These are location, customer relations, innovations, interest rate, security and product type. The levels for each of the factors are as given below:

FACTORS	LEVELS
LOCATION	PROXIMITY NATIONWIDE SPREAD LOCALISED COVERAGE
CUSTOMER RELATIONS	PROMPT SERVICE FRIENDLINESS+EFFICIENT STAFF COMPLAINT HANDLING
INNOVATION	ATM INTERNET BANKING FESTIVE/BIRTHDAY WISHES
PRICING	FIXED DEPOSIT LOAN/CREDIT FACILITY OTHERS
PRODUCT TYPE	SAVINGS PLUS TARGET SAVINGS SALARY ADVANCE
SECURITY	OTHERS VERY SECURED FAIRLY SECURED

Table 1: Factors and Levels

The questionnaire was constructed with the help of some friends and colleagues who are well versed in banking, the factors and levels were derived by the use of an interview sessions with some top bankers, some bank customers and some that does not have any account at all. A set of profile cards were distributed alongside the questionnaire to allow customers choose the their preference of some combination of factors at different levels combined at random, this was generated with the use of computer (SPSS) and all the 25 profile cards were orthogonal., as against the whole ( $3 \times 3 \times 3 \times 3 \times 4 \times 2 = 648$ ) possible profile cards. The respondents were charged with the responsibility of ranking all the 25 profile cards with the least number 1, going to the most preferred profile, up to 25 which goes to the least preferred profile card.

The questionnaires were administered randomly at both the mainland and Lagos Island branches of all

banks. Only 200 questionnaires were completely and correctly filled, along side with the ranking of profile cards. The method of analysis was Full profile Conjoint Analysis, with the aid of Statistical Package for Social Sciences (SPSS17).

## III. ANALYSIS OF DATA AND RESULT

From the utilities part-worth's given below, it is evident that out of the location levels the most preferred was the proximity because it has a higher utility value ( 1.167), next to it is nationwide spread of the bank branches (0.068) , and the least considered was localised coverage of the branches (-1.235). A higher utility value connotes a higher preference.



## Utilities

		Utility Estimate	Std. Error
LOCATION	PROXIMITY	1.167	.290
	NATIONWIDE SPREAD	.068	.290
	LOCALISED	-1.235	.346
	COVERAGE		
CUSTOMER.RELATIONS	PROMPT SERVICE	-.217	.290
	FRIENDLINESS+EFFICIENT STAFF	2.284	.290
	COMPLAINT HANDLING	-2.067	.346
INNOVATION	ATM	1.150	.290
	INTERNET BANKING	.080	.290
	FESTIVE/BIRTHDAY WISHES	-1.230	.346
PRICING	FIXED DEPOSIT	.564	.290
	LOAN/CREDIT FACILITY	-.135	.290
	OTHERS	-.430	.346
PRODUCT.TYPE	SAVINGS PLUS	.865	.318
	TARGET SAVINGS	-.209	.394
	SALARY ADVANCE	-.244	.394
	OTHERS	-.412	.394
SECURITY	VERY SECURED	-10.309	.424
	FAIRLY SECURED	-20.619	.848
(Constant)		26.268	.647

Table 2 : (Utility part worth of all levels of factors)

For the Customer relations levels, the most considered level was for the staff of the bank to be very efficient as well as being friendly with utility part worth 2.284, followed by customers being attended to promptly even if the staff frowns with utility part worth -0.271, the least considered level was for any complain from customers to be handled rightly and on time, with utility part worth -2.067. For Innovation desirability level, Availability of the Automated Teller Machine (ATM), was the most preferred, with utility part worth 1.150 followed by the access to internet banking services, with utility part worth 0.080, the least preferred was birthday and festive wishes to customers on phone, with utility part worth -1.230. For the pricing/interest rates, customers chose the high interest rate on fixed deposit with utility part worth 0.564, to be more useful than that of loan /credit facility -0.135 with a lower rate, the least considered was the bank charge on all other service(s) rendered, with utility part worth -0.435. Again, for desirability within the product type levels, the most preferred was the savings plus with utility 0.865, followed by target savings, with utility part worth -0.209 next was salary advance, -0.244 and the least considered was other types with utility part worth -0.412. Lastly, for Security, obviously, most bank customers

went for a more secured bank, with utility -10.319, rather than a fairly secured with utility -20.619, though all the banks have an average level of security because of the existence of Nigerian Deposit and Insurance Corporation, which is a body that ensures that a certain amount of money is paid back to depositors in case of distress.

LOCATION	12.959
CUSTOMER.RELATIONS	19.087
INNOVATION	11.911
PRICING	7.540
PRODUCT.TYPE	13.065
SECURITY	35.439

Table 3 : Relative Importance Values

profile	location	customer re	innovations	interest rates	security	product type	constant	total utility
1	1.167	-0.217	0.08	0.564	-10.309	-0.412	26.268	17.141
2	-1.235	-2.067	0.08	0.564	-20.619	-0.244	26.268	2.747
3	0.068	-2.067	-1.235	0.564	-10.319	0.865	26.268	14.144
4	-1.235	-0.217	1.15	0.564	-10.319	-0.412	26.268	15.799
5	1.167	-0.217	1.15	0.564	-10.309	0.865	26.268	19.488
6	1.167	-2.067	0.08	-0.43	-10.309	0.865	26.268	15.574
7	0.068	2.284	1.15	0.564	-20.619	0.865	26.268	10.58
8	0.068	-2.067	1.15	-0.135	-20.619	0.412	26.268	5.077
9	1.167	2.284	1.15	0.564	-20.619	0.865	26.268	11.679
10	0.068	-0.217	0.08	-0.135	-10.309	0.865	26.268	16.62
11	-1.235	-0.217	-1.23	-0.135	-10.309	0.865	26.268	14.007
12	1.167	2.284	0.08	-0.135	-10.309	0.865	26.268	20.22
13	0.068	2.284	0.08	-0.43	-10.309	0.412	26.268	18.373
14	1.167	-0.217	0.08	0.564	-20.619	-0.209	26.268	7.034
15	-1.235	2.284	0.08	-0.135	-20.619	0.865	26.268	7.508
16	0.068	2.284	0.08	0.564	-10.309	-0.244	26.268	18.711
17	0.068	-0.217	1.15	-0.43	-20.619	0.865	26.268	7.085
18	-1.235	2.284	1.15	-0.43	-10.309	-0.209	26.268	17.519
19	0.068	-0.217	0.08	-0.135	-20.619	-0.209	26.268	5.236
20	1.167	-2.067	1.15	-0.135	-10.309	-0.209	26.268	15.865
21	1.167	2.284	-1.23	-0.135	-20.619	0.412	26.268	8.147
22	0.068	-0.217	1.15	-0.135	-10.309	-0.244	26.268	16.581
23	1.167	2.284	1.15	-0.135	-10.309	-0.244	26.268	20.181
24	1.167	-0.217	-1.23	-0.43	-20.619	-0.244	26.268	4.695
25	0.068	2.284	-1.23	0.564	-10.309	-0.209	26.268	17.436

Table 4 : Averaged Importance Score for the 25 profiles

To get the total utility for each profile card, the individual utilities are added up, so as to evaluate the utility of the best profile card. For example,

Utility of profile 1 =  $1.167 + (-0.217) + 0.08 + 0.0564 + (-10.309) + (-0.412) + 26.268 = 17.141$ .

Utility of profile 2 =  $-1.235 + (-2.067) + 0.08 + 0.564 + (-20.619) + (-0.244) + 26.268 = 2.747$

A visual inspection of Table 4 indicates that profile 12 was the best combination of a bank attribute out of all the 25 set of hypothetical product (profile

cards), the second card was the profile 23, and next to it is profile 5. The least was profile 2.

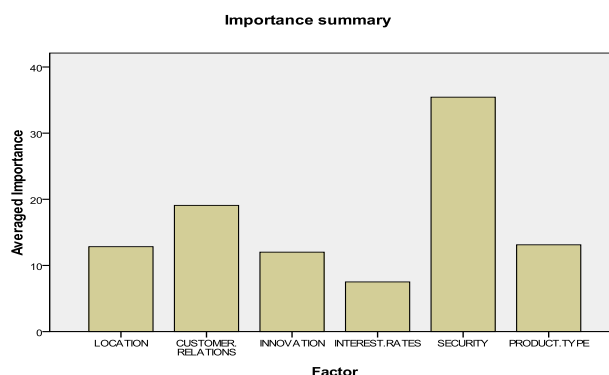


Figure 1: The Importance Summary

The relative importance of each factor was derived with the use of SPSS Conjoint analysis. It was observed that Security of funds was the most important factor, followed by customer relations, then product type, closely followed by location of the bank branch(es), the fifth factor preferred was innovation of the bank and the least preferred factor was the interest rates.

#### IV. SIMULATION RESULTS

The real significance of conjoint analysis is its ability to predict preference for profiles (hypothetical products) for profile cards that were not included in the main ranking, that is, it was not part of the first 25 profile cards. The numbering of the simulation products was differentiated by the use of numbers that were not serial to the main 25 profile cards.

Card Number	ID	Score
1	50	21.309
2	51	19.875

Table 5: Profile Scores

The above table shows that profile 50 has a higher score and therefore a better product than profile 51. Table 6 displays the predicted probabilities of

choosing each of the simulated products in three different ways. Maximum utility, Bradley -Terry - Luce, and Logit models.

Card Number	ID	Maximum Utility <sup>a</sup>	Bradley-Terry-Luce	Logit
1	50	55.3%	52.3%	56.8%
2	51	44.8%	47.7%	43.2%

Table 6 : Preference Probabilities of Simulations<sup>b</sup>

The maximum utility model was used to determine the probability of the number of respondents who are predicted to choose the profile divided by the total number of respondents. Bradley-Terry-Luce model is calculated as the ratio of a profile's utility to that of all simulated profiles, and then averaged across all respondents. The Logit model is very close to Bradley-Terry-Luce model, but it uses the natural logarithm of the utilities in place of the utility values.

#### V. CONCLUSION

The competition for deposits in Nigerian banks is very keen. All Nigerian banks have deployed an array of tools to position themselves for this battle for deposits, but before deposits can come, customers have to open account or at least maintain the account. Banks are expected to study customer's preference on factors that can attract them to their bank, in order to

satisfy the existing customers and also woo potential customers.

Conjoint analysis gave us an insight into customers' preference on factors that attract them to banks. Security of funds was the most important factor, followed by customer relations; both product type and location were also given a high consideration by customers. On the relative importance of all factors, security was placed to be the most important, interest rates was rated as the least, but this does not mean that interest rates does not have an impact, it does have but it was just the trade-off or the alternative forgone, banks are therefore advised to get the right product for the right price.

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## Pricing of Index Options Using Black's Model

By Dr. S. K. Mitra

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**Abstract** - Stock index futures sometimes suffer from 'a negative cost-of-carry' bias, as future prices of stock index frequently trade less than their theoretical value that include carrying costs. Since commencement of Nifty future trading in India, Nifty future always traded below the theoretical prices. This distortion of future prices also spills over to option pricing and increase difference between actual price of Nifty options and the prices calculated using the famous Black-Scholes formula. Fisher Black tried to address the negative cost of carry effect by using forward prices in the option pricing model instead of spot prices. Black's model is found useful for valuing options on physical commodities where discounted value of future price was found to be a better substitute of spot prices as an input to value options.

In this study the theoretical prices of Nifty options using both Black Formula and Black-Scholes Formula were compared with actual prices in the market. It was observed that for valuing Nifty Options, Black Formula had given better result compared to Black-Scholes.

**Keywords** : Options Pricing, Cost of carry, Black-Scholes model, Black's model.

**GJMBR - B Classification** : FOR Code:150507, 150504, JEL Code: G12 , G13, M31



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## I. INTRODUCTION

It is generally assumed that the relation in prices between the underlying assets and the futures is maintained by arbitrageurs. If this relation is maintained effectively, then investors find these markets as perfect substitutes, and their choice of trades in these markets are governed by conveniences and costs. However, many studies have reported substantial deviation between futures prices from their theoretical values.

Prices of index futures quoting below the theoretical prices of the stock index futures are a common phenomenon. Since the inception of Nifty future trading in India, Nifty futures even traded below the Nifty spot value. Future prices quoting below spot prices are sometimes observed in commodity prices. Even though Future prices are less than spot prices, the owners of physical commodity may not be able to sell the commodity at the current higher prices and exploit the price differential due to certain constraints. In cases of certain agricultural crops, spot prices increase before harvest due to shortages but just after the harvest prices are reduced when fresh supplies are available. These deformities can cause difference between actual price of options and the prices calculated using options pricing formulas.

Fisher Black (1976), one of the co-author of the famous Black and Scholes model (1973) attempted to

address this problem of negative cost of carry in the option pricing model by using forward prices instead of spot prices. He found that actual forward prices also capture other irregularity faced by market forces in addition to the inventory carrying cost. Black's model is found useful for valuing options on physical commodities where negative cost of carry is common.

In this study we estimated option prices using both Black's formula and Black-Scholes formula and compared these theoretical values with actual prices in the market and observed that Black formula gives better result in comparison to Black-Scholes formula for Nifty options.

## II. LITERATURE SURVEY

A number of studies are available where differences between theoretical and actual option prices and arbitrage trading opportunities are explored. The arbitrage process is based on the existence of a frictionless market in which traders can make transactions whenever prices of options and futures contracts deviate from their respective fair values. The arbitrage process are sometimes affected by various frictions such as: regulatory restrictions and barriers, transaction costs, risks from the arbitrage process, regulatory restrictions, operating restrictions such as margin size and short selling constraints, etc.

These factors are responsible for an arbitrage-free band around the futures and the options prices and minor deviations of pricing within the band can not be used for profitable trades. A number of papers have observed significant variation in the option and futures prices from their fair value relative to the underlying asset. In some cases the deviations may not be sufficient to generate risk less arbitrage and significant profits after costs are taken into account.

Cornell and French (1983) studied stock index futures pricing and arbitrage opportunity with daily data by using the cost of carry model and found that mispricing did exist. Modest and Sundaresan (1983) found that when arbitrageurs lose the interest earnings on the proceeds of the short sale of stocks then pricing band would be asymmetric around the fair price. However, presence of various restrictions will discourage taking short positions in futures; they generally sell stock they own or control when the futures are underpriced.

Mackinlay and Ramaswamy (1988) carried out studies using the cost of carry pricing involving the S&P 500 contract from June 1983 to June 1987, and

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examined the mispricing of futures contracts from their fair values. They found that a positive or negative persistence in mispricing existed. They used regression analysis and found that the mispricings are a function of the average absolute daily mispricing and the time to expiration of the futures. Further analysis of the arbitrage violations led them to conclude that once an arbitrage band was crossed it was less likely for the mispriced value to cross the opposite arbitrage band. They did not provide information on the size of the average arbitrage profits.

Stoll and Whaley (1988) studied the impact of similar strategy on the index futures using a forward-contract pricing relationship. Lee and Nayar (1993) have studied the S&P 500 options and futures contracts traded on the Chicago Board Options Exchange (CBOE) and Fung and Chan (1994) analyzed trading in the Chicago Mercantile Exchange (CME), respectively to detect pricing efficiency and detected presence of mispricing.

Yadav and Pope (1994), studied the UK markets examining futures against the index and reported that the absolute magnitude of mispricing often exceeds the estimated trading costs and cannot be explained by dividend uncertainty, marking to market cash flows, or possible delays in trade execution. Sternberg (1994) observed that the options contracts available against futures reduce the mispricing since the options can be priced directly against the underlying futures contract.

Traders in options frequently use futures contracts to hedge their positions. Fleming, Ost diek, and Whaley (1996) found that dealers price the S&P 500 index options based on the prevailing S&P 500 futures price. They found that it is cheaper and more convenient to hedge the options with the futures than with the stock basket. Fleming, Ost diek and Whaley (1996) analysed trading of S&P 500 futures and found that S&P 500 futures prices appear to lead the S&P 500 stock index, even after controlling for the effects of infrequent trading on the index. The structure of trading costs revealed that futures trades had permanent price effects as traders prefer to exploit their information advantages in the futures market rather than in the cash market.

Traders and market makers often value index options based on the prices of index futures than the spot price of the index. Gwilm and Buckle (1999) observed that the use of the Black's formula of option pricing to price European index options gave better results when delta hedging was possible in futures market. They tried to relate mispricing of the index futures with the mispricing in the index options using Black's formula.

Verma (2003) observed that Nifty futures trade at a discount to the underlying and credited this occurrence on the short sale restrictions in the cash market and estimated the implied (risk neutral)

probability distribution of the underlying index using the Breeden-Litzenberger formula.

Berkman, Brailsford and Frino (2005) used the FTSE 100 stock index futures contract and found that there was a small permanent price impact associated with trades in index futures. Their results revealed that the initial price reaction is reversed soon. They did not find evidence of asymmetry in the price reaction following large trades in stock index futures, and suggested that the asymmetry documented in previous studies was specific to equity markets.

Majority of the studies referred above found evidence of mispricing in both futures and options market. It was also found that mispricing in one instrument influence pricing of other instrument. Black's formula paves a way to connect mispricing of futures in option price estimation

### III. PRICING OF FUTURES WITH COST OF CARRY

The cost of carry is calculated taking the difference between the actual future prices and the spot value of the underlying asset. The cost of carry concept is based on the cost involved in holding the asset for the validity period of the future contract that include cost of funds blocked, storage, insurance and other handling costs incurred in acquiring and storing the commodity. For financial assets, the cost of carry is measured as equal to the interest rate in a risk free asset. It should be emphasized that it is difficult to formulate a model for the deviations of futures prices from fair values. Consider the following portfolio, bought today and held until the expiry of forward contract at date t:

- Buy the stocks at the price S (the current price) and reinvest the dividends received, if any, until date t.
- Borrow an amount S today to finance the purchase of stocks.
- Sell a future contract at the current forward price F.

To create an arbitrage free situation that is to avoid losses or gains in the above action, following cost of carry based future pricing model can be established.

$$F = (S + H)e^{(r-d)t}$$

F is the forward price,

S is the spot price,

r is the risk-free rate of interest,

H is the cost of holding the asset,

d is the dividend or income from the asset during the holding period and

t is the duration of the forward contract (expressed as a fraction of 1 year).

Generally, forward prices follow cost of carry arbitrage. When a commodity can be stored, the forward price of that commodity is the cost of purchasing the commodity and holding costs of keeping the position until the forward delivery date. However some products

like natural gas, perishable commodities, etc do not follow cost of carry model as such products can not be stored. In case of financial assets, cost of carry is the cost of financing the position that includes cost of funds blocked. In general, the cost of carry is 'positive' as a result of positive interest and storage costs, but in some situations it can also be negative.

The main factors that influence differences between commodity and equity index futures are:

- There are no costs of storage involved in holding equity (depository costs are negligible).
- Equity offers a dividend income, which is a negative cost when stocks are held and positive when stocks are short sold.

Therefore, Cost of carry for a financial product is equal to financing cost – dividend income. When the future price at market F is greater than  $Se^{-rt}$  then a strategy of buying the index and selling the future contracts will earn risk less profits in excess of the risk-free rate, similarly when F is less, then a strategy of selling index and buying futures contracts will achieve financing below the risk-free rate.

Trading in the stock index derivatives has become popular as they are useful to hedge equity portfolios against market fluctuations. The transaction costs in the derivatives markets are lower compared to the trading costs in the cash market. Further, the securities available for trade in the cash market sometimes exhibit illiquidity and higher bid-ask spread. Additionally, short sales of index futures are easy but short sales of securities are restricted in many markets.

For futures involving Nifty index, it was found that future prices were lower than the cost of carry model. When a under priced stock index future is available, the stock index future can be purchased but selling the constituents of the stock index is difficult as there are restrictions on short sales in the spot market. Thus, at the time when market opinion is bearish, anyone can easily take a short position in futures market but can not do so in spot market. When sellers outnumber buyers, the index future price declines and, sometimes go below the spot prices. Since this under pricing can not be exploited by the arbitrageurs these mis-pricing persists for a long time. On the contrary, when Nifty futures are overpriced the arbitrageurs can sell nifty futures and buy underlying stocks from the spot market and take advantage of the mis-pricing. These operations would diminish the arbitrage opportunity quickly and overpricing of futures would soon be corrected. The logic makes it clear that under pricing of Nifty futures can persist but overpricing cannot.

As both futures and options are traded in the same exchange wrong pricing of one instrument are bound to influence pricing of the other and accordingly under pricing of Nifty options are certainly to have an effect on pricing of Nifty futures. Black observed that under priced futures could result in under priced call

options and overpriced put options. The effect can be termed as the low-call-high-put bias in option prices due to under pricing of futures.

#### IV. BLACK-SCHOLES MODEL AND BLACK'S MODIFICATION

The Black and Scholes (1973) model of options pricing, was a significant development in theoretically estimating the option pricing problem. The Black-Scholes model is attractive since it gives a closed-form solution for pricing of European options. With the sole exception of volatility measure, all other variables used in the model are observed from the market and therefore the model had contributed to the expansion of the options markets as a effective pricing technology were made available. Though the original model was developed for non-dividend paying securities in European type options, the model can be modified for the pricing other types of options. The Black-Scholes formulas for the prices of European Calls (C) and Puts (P) for no dividend paying stocks are given below.

$$C = S.N(d_1) - X.e^{-rt}.N(d_2)$$

$$P = X.e^{-rt}.N(-d_2) - S.N(-d_1)$$

$$\text{Where } d_1 = \frac{\ln(S/X) + (r + \sigma^2/2)t}{\sigma\sqrt{t}}$$

$$d_2 = \frac{\ln(S/X) + (r - \sigma^2/2)t}{\sigma\sqrt{t}} = d_1 - \sigma\sqrt{t}$$

In this formula

S = current price of the security

X = Exercise price of option

r = Risk free rate of interest

t = Time to expiry of the option content

$\sigma$  = Volatility of the underlying asset

N(x) is the cumulative probability function for a standardised normal variable. It represent the probability that a variable with a standard normal distribution  $\Phi(0,1)$  will be less than x.

A number of assumptions used in the Black-Scholes method appears to be unrealistic. First, it assumes a geometric Brownian motion of stock prices where the series of first differences of the log prices must be uncorrelated. But actual returns from stocks exhibit small but statistically significant correlations in the differences. The next question is whether the innovations returns are normally distributed. It is also a common observation that the returns are leptokurtic, i.e., they have much more of a tendency to exhibit outliers than would be possible from a normally distributed series. Finally, the assumption of constant variation is also questionable. The levels of volatility (i.e., fluctuation)

often change with time. The periods of high volatility follow immediately after a large change in the level of the original prices and high volatility usually persists for some time. When the underlying assumptions are violated, the use of Black-Scholes formula to compute options prices may not always be accurate.

In spite of the violations mentioned above, Black-Scholes model is still very widely used, but sometimes adjustments are made to account for some of the identified inadequacy.

#### a) Black's Formula

The original Black-Scholes model has undergone several theoretical developments. One such development for the valuation of futures options is introduced by Black (1976). Black proposed a formula for options under the assumption that investors generate risk less hedges between options and the futures or forward contracts. The problem of negative cost of carry was addressed by using 'forward prices' in the option pricing model instead of 'spot prices'. Black observed that actual forward prices not only incorporate cost of carry but also takes into account other irregularities in the market. In his proposed model, he substituted spot price (S) by the discounted value of future price ( $F.e^{-rt}$ ) in the original Black-Scholes model. Black's model found application in valuing options on physical commodities where future price is a better alternative input for valuing options.

The Call options prices as per Black's formula can be observed solving following equation:

$$C = Fe^{-rt}.N(d_1) - X.e^{-rt}.N(d_2)$$

$$= e^{-rt} [F.N(d_1) - X.N(d_2)]$$

Where  $d_1 = \frac{\ln(F/X) + (\sigma^2/2)t}{\sigma\sqrt{t}}$

$$d_2 = \frac{\ln(F/X) - (\sigma^2/2)t}{\sigma\sqrt{t}} = d_1 - \sigma\sqrt{t}$$

In the formula F is the future price of the asset and other input parameters are similar to the inputs used in the Black-Scholes model.

According to Black, future prices provide valuable information for the market participants who produce, store and sell commodities. The future prices observed during the various transaction months, help the producers and traders to decide on the best times to plant, harvest, buy and sell the physical commodity. The future price of a commodity therefore reflects the anticipated distribution of Spot prices at the time of maturity of the future contract. Black observed that changes in spot price and change in future price are usually correlated. Both spot prices and future prices

are governed by the general shifts in cost of producing a commodity and the general shifts of demand of the commodity. Shifts in demands and supply due to fresh harvesting can create difference between spot and future price.

In the Black-Scholes formula, the term  $X.e^{-rt}$  represents the present value of exercise price discounted at risk free rate  $r$  for the time to maturity. The expression is based on the premise that the exercise price of the option at a future date includes an interest rate component over the intrinsic value of exercise price. In the same logic, the future prices are supposed to be higher than the spot price due to the positive interest rate component. Thus the important difference between Black's and Black-Scholes in that Black uses forward prices and Black-Scholes uses spot prices.

The Nifty future prices are usually lower than their theoretical prices. The main reasons of futures trading less than their fair value are due to the short selling restrictions of underlying stocks. When future price is higher than the spot value plus cost of carry (i.e.  $F > S.e^{rt}$ ) one can sell future and buy underlying stocks, on the other hand when future price is less than the spot value plus cost of carry, (i.e.  $F < S.e^{rt}$ ) stocks can not be short sold on account of short sell restrictions. As a result of this restriction in India, future prices time and again trade less than their fair values. It was observed that all the futures of Nifty index were trading at prices less than their intrinsic values and in many instances the futures were traded even below their spot prices.

## V. DATA AND ANALYSIS

Call options of Nifty index traded in National Stock Exchange of India from the period 1st July 2008 to 30th June 2011 were collected from website of the exchange: [www.nseindia.com](http://www.nseindia.com). Similarly, closing prices of the Index for the said period were also gathered. Since only closing prices of the day were available with the exchange, inter-day prices could not be compared. The comparison of closing prices can give error for thinly traded options due to mismatch of timing. For example, when an option was traded last at 1.00 pm, the spot price of the same asset was different than the closing price taken at the close of the day. Thus the closing price of the asset can not be used to evaluate a trade that took place much earlier. With the availability of data from the exchange, comparing call option prices traded at different times with the corresponding spot values at that time were not possible. This effect of timing mismatch was reduced by short listing only highly traded options that were traded till last few minutes and hence options where the volume of trading was higher than 100 lots in the day were selected for the study.

#### a) Under pricing of Nifty futures

In this study Nifty futures traded during the period July 2008 to June 2011 were analyzed. Out of



743 days observation, it was found that in case of 603 days (80.89% of the days) corresponding futures prices were lower than their fair value (i.e. spot price plus cost of carry) (table-1). This bias is bound to influence options pricing in the options market. The future prices quoting lower than their fair value were common during the sample period.

In many days the future prices even quoted below their corresponding spot values. Out of 743 days, as many as 271 days (36.47% of the cases) futures prices were below their corresponding spot prices.

#### b) Other parameters used in option Pricing

Other input parameters for estimating call option prices with the formulas are obtained as follows. Among input parameters required in the models, the standard deviation ( $\sigma$ ) of the returns for the duration of the option are not observable from the market and therefore an estimate is required. There is no agreement on the suitable method for estimating standard deviation of the returns series. Further, it is a common observation that ' $\sigma$ ' of the price series changes with time. Sometime the returns remain volatile and this volatility persists for some time and again the volatility may remain low in other periods.

The past volatility of a security can be estimated as the standard deviation of a stock's returns over a predetermined number of days. Choosing the appropriate number of days is complicated. Longer period of observation has an averaging effect and as volatility varies with time and very old data may not be relevant for the current situation and can not be used for predicting the future. In absence of an agreed method to estimate volatility to be used in options pricing models, a simple method of estimating standard deviation using past three months return was used in the study.

According to Hull (2004), use closing daily prices of few recent months a compromise solution. The daily volatility can be annualized as follows.

$$\sigma_{\text{annualised}} = \sigma_{\text{daily}} \sqrt{\text{Trading days per annum.}}$$

The number of trading per annum are usually taken 250 or 252 that exclude weekly offs and holidays.

The value of risk free rate of interest was taken at 8% as small investors can earn this rate from post office savings schemes and similar government backed savings.

#### c) Comparison of errors using option pricing models

After gathering the required data call option prices using both Black-Scholes formula and Black's formula were estimated and compared. The easiest way to measure efficacy of a valuation formula was to compare the calculated values with the option prices quoted in the market. Any difference between actual

price and calculated value was taken as the error of the formula. The formula that had produced lowest error was considered better. The error for each observation was added to obtain total error.

$$TE = \sum_{n=1}^N e_n$$

Summarized total error data using both Black-Scholes model and Black model is presented in table-3. It can be seen that total error in Black model was less than that of B-S model.

To find effectiveness of the models, a paired sample t-test was carried out involving error measures of the two methods. The Paired Samples t-test compares the means of two variables. It computes the difference between the two variables for each case, and tests to see if the average difference is significantly different from zero. The following hypothesis was tested:

- Null: There is no significant difference between the means of the two variables.
- Alternate: There is a significant difference between the means of the two variables

In the test the mean of error measures between Black's method and Black-Scholes method were compared to verify if the use of Black's method improved accuracy of estimating call options. The test was carried out in SPSS and the descriptive statistics for both the error measures are presented in table 4.

In the table the difference between the pair of variables is given. The mean error of the Black method was 1.76 and the mean of the B-S model was -10.49. The results of the significant tests are produced in table 5, where the difference between two means were 12.25 and the result was significant with the value of  $p = .000$ . It is therefore concluded that the differences of the mean was significant and it is more likely to obtain better result using Black's method compared to Black-Scholes method.

## VI. CONCLUSION

The purpose of the study was to evaluate the accuracy of option pricing models to value Nifty Index Futures traded on National stock exchange of India. Though the use of Black-Scholes model is popular, the model does not exactly fit into the real life situations. Index futures suffer from the negative cost of carry effect and Nifty futures quoting below the theoretical prices of Nifty are very common. Since the beginning of Nifty trading in India, Nifty futures remained under priced and sometimes trade below the Nifty spot value. This type of mismatch in pricing of futures is usually seen in commodity futures. When future prices are lower, the owners of the commodity may not be able sell the product due to various reasons and benefit from the mismatch in pricing.



The paper tried to address issues related to under-pricing of Nifty options on account of negative cost of carry in futures market. In this study, 29,724 option quotes from 1st July 2008 to 30th June 2011, are analyzed using both B-S formula and Black formula and found that the Black's formula produce better alternative than use of Black and Scholes formula.. From the analysis of errors, it is verified that Black model produces less error than that of Black-Scholes model and for that reason use of Black model is more fitting than that of B-S model for valuing Nifty options.

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*Table 1* : Comparison of future prices vs. spot Prices plus cost of carry

Sl	Period		No. of Observation			% cases where $F < S^{ert}$
	From	To	Total	$F < S^{ert}$	$F > S^{ert}$	
1	1-Jul-08	30-Sep-08	64	39	25	60.94%
2	1-Oct-08	31-Dec-08	60	42	18	70.00%
3	1-Jan-09	31-Mar-09	59	59	0	100.00%
4	1-Apr-09	30-Jun-09	59	47	12	79.66%
5	1-Jul-09	30-Sep-09	64	57	7	89.06%
6	1-Oct-09	31-Dec-09	61	53	8	86.89%
7	1-Jan-10	31-Mar-10	60	57	3	95.00%
8	1-Apr-10	30-Jun-10	63	59	4	93.65%

9	1-Jul-10	30-Sep-10	65	55	10	84.62%
10	1-Oct-10	31-Dec-10	64	33	31	51.56%
11	1-Jan-11	31-Mar-11	62	50	12	80.65%
12	1-Apr-11	30-Jun-11	62	50	12	80.65%
Total			743	601	142	80.89%

Table 2 : Comparison of Future prices vs. Spot Prices

Sl	Period		No. of Observation			% cases where Future < Spot
	From	To	Total	Future < Spot	Future > Spot	
1	1-Jul-08	30-Sep-08	64	18	46	28.13%
2	1-Oct-08	31-Dec-08	60	22	38	36.67%
3	1-Jan-09	31-Mar-09	59	51	8	86.44%
4	1-Apr-09	30-Jun-09	59	14	45	23.73%
5	1-Jul-09	30-Sep-09	64	29	35	45.31%
6	1-Oct-09	31-Dec-09	61	26	35	42.62%
7	1-Jan-10	31-Mar-10	60	24	36	40.00%
8	1-Apr-10	30-Jun-10	63	34	29	53.97%
9	1-Jul-10	30-Sep-10	65	19	46	29.23%
10	1-Oct-10	31-Dec-10	64	1	63	1.56%
11	1-Jan-11	31-Mar-11	62	15	47	24.19%
12	1-Apr-11	30-Jun-11	62	18	44	29.03%
Total			743	271	472	36.47%

Table 3 : Comparison of Total Error between Black Scholes model and Black's model

Sl	Period		No. of Observation	Total Error	
	From	To		B-S Model	Black's Model
1	1-Jul-08	30-Sep-08	1968	(68,764)	(48,551)
2	1-Oct-08	31-Dec-08	2337	(49,495)	(41,726)
3	1-Jan-09	31-Mar-09	1838	(25,819)	(176)
4	1-Apr-09	30-Jun-09	2173	(73,642)	(55,519)

5	1-Jul-09	30-Sep-09	1966	(16,043)	8,802
6	1-Oct-09	31-Dec-09	2021	7,087	36,163
7	1-Jan-10	31-Mar-10	2249	(6,882)	31,010
8	1-Apr-10	30-Jun-10	2597	(39,830)	9,906
9	1-Jul-10	30-Sep-10	2954	9,034	68,724
10	1-Oct-10	31-Dec-10	3088	6,701	25,504
11	1-Jan-11	31-Mar-11	3417	(28,735)	4,378
12	1-Apr-11	30-Jun-11	3116	(25,311)	13,804
Total			29724	(311,699)	52,319

Table 4 : Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error of Mean
Pair 1	Total Error : Black's Method	1.76	29724	48.66	0.28
	Total Error : B-S Method	-10.49	29724	50.05	0.29

Table 5 : Paired Samples Test

Pairs: Total Errors Using Black's Method and Black-Scholes Method

Paired Differences			t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error of Mean			
12.25	15.64	0.09	135.00	29723	0.000



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# The Role of Service Marketing Mix and Ship Service Quality towards Perceived Value and Its Impact to Ship Passenger's Satisfaction In Indonesia

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**Abstract** - The purpose of this research is to analyze the implementation of service marketing mix, service quality, perceived value and ship passenger's satisfaction.. The observed unit in this research is ship's passenger in Indonesia. The research showed that; (1) service marketing mix doesn't have partially affects perceived value,(2) service quality on ships partially affects perceived value, (3) service marketing mix and service quality on ships simultaneously affects perceived value, (4) service marketing mix partially affects passenger's satisfaction, (5) quality on ships partially affects passenger's satisfaction, (6) service marketing mix and service quality on ships simultaneously affects passenger's satisfaction, and (7) perceived value affects passenger's satisfaction.

**Keywords** : *Service marketing mix, ship service quality, perceived value and ship passenger's satisfaction.*

**GJMBR - A Classification** : *FOR Code: 150501, 150505 JEL Code: M31, L85.*



*Strictly as per the compliance and regulations of:*



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## 1. INTRODUCTION

Low understanding of service quality, specifically sea transportation service at the present has been deviated from its coverage on characteristic of dimension selection of service quality of sea transportation, service quality does not only provide the service dimension on punctuality, durability, reliability but also safety and environment protection. In the frame word to adjust with ship safety standard as determined on Law Number 17 of 2008 on Shipping, and environment, as stated on Chapter. VIII – safety and security of shipping part one general article 116 (1): safety and security of shipping includes safety and security of transportation in sea, ports and Maritime protection.

Part 4 of Maritime environment protection article. 123: Maritime environment protection is the condition of fulfillment of Procedures and preventing requirements and controlling pollution from the activity of: (a) portship, (b) ship operating, (c) transporting waste, Hazardous and Toxic Materials within the sea, (d) dumping waste in the sea, and (e) ship recycle. As mentioned by Hawkins (2001) and Singapore Marine

Port Authority (MPA) (2000) that the implementation of sea transportation service has 85% portion out of safety dimension at sea, environment protection such as corporate social responsibility and behavior of sea transportation service company. Similar statement also stated by Green Award (2004) that sea transportation service quality does not only involve safety dimension, trustworthy, and efficient but also behavior of corporate social responsibility and activity which care on safety and environment. The Ministry of Transportation, Directorate General of Sea Transportation has stated below program to increase: (a) the role as trusted partner to sea transportation business to support National economic and public welfare; (b). safety and security in operating facility and infrastructure of sea transportation to support Road Map To Zero Accident and (3). To increase the quality of sea transportation and port service throughout Indonesia effectively and efficient (Directorate Generale of Sea Communication at sea, 2010).

Besides service quality, other very important variable is service marketing mix which is a good marketing strategy so that the offered service quality can be seen, heard, and bought by passenger by promoting, producing service product, distributing, fixing price, conveying service, there is a service process and physical evidence on marketing target. Service marketing mix is needed by sea transportation service as the beginning to make decision on how service marketing mix is positioned and what kind of market segment that is targeted (Thai, 2008).

While Gronhold et al. (2000) conducted research to test the process of formation of customer's satisfaction by using European Customer Satisfaction Index (ECSI) Model. ECSI model showed that customer's satisfaction is influenced by image, customer expectation, software quality, hardware quality and value. The research of Mc Dougall and Levesque (2000) has proven that customer's satisfaction is influenced by core quality, relational quality and perceived value. Based on the above background, then this research will test and produce the influence of service marketing mix and ship service quality towards

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the perceived value on ship passenger satisfaction, in which analysis unit of this research is the ship passenger. Originality submitted on this research is the measurement of service quality without gap on sea transportation which measures directly without using ROPMIS dimension which are resource, outcome, process, management, image, and social responsibility corporate (Thai, 2008).

## II. LITERATURE REVIEW AND HYPOTHESES

Marketing is the main core of company to produce customer's satisfaction and customer's welfare for long term as a key to obtain profit. This is valid for companies which operate in service industry or for the companies which operate in non-service fields. While according to Lovelock and Gummesson (2004), service can be said as a system, which is service operation system, service delivery system elaborated in service marketing mix. Because in service operation system, service elements that are made are elements of service marketing mix, so as to the service delivery system of delivered service elements to the customers are elements of service marketing mix. Service marketing mix is controlled variables which can be used by company to influence consumer response from certain market segment who are targeted by the company Lovelock and Gummesson (2004) .

The tools of marketing mix or internal factors that can be controlled by company from marketing mix consist of 4 main components that are product, price, distribution and promotion, and in the progress there are 3 more added that are people, physical evidence, and process). The addition of these 3 elements are in line with the opinion of Valarie et al. (2009). According to Palmer and Ponsonby (2002), he said that marketing mix is divided into 7 Ps which are product, pricing, place, promotion, process, people, physical evidence. Service marketing mix needs another aspects that are : people, physical evidence, and process.

Consumer or customer chooses service provider based on their expectation and after consuming the service, they will compare it with that they have felt. If the service quality they consumed are far below their expectation, then the consumer will lose interest on such service provider and vice versa. Definition of service quality centralized to fulfillment of needs and demand of customer and also the certainty of delivery to balance customer's expectation. According to Kotler (2000), Kotler and Kevin (2009), and Lovelock and Gummesson (2004) service quality shall begin from the consumer needs and ended on consumer perception. Consumer perception towards service quality is an entire evaluation of consumer on the excellence of a service. The measurement used on service quality of sea transportation consists of 6

dimension which are: resources-related dimension, outcomes-related dimension, process-related dimension, management-related dimension, image/reputation-related dimension, and social responsibility-related dimension.

According to Petrick (2001), Petrick (2004), Yang and Peterson (2004) stated that perceived value plays a role in identifying consumer's satisfaction. Petrick (2001, 2002, 2004) stated that perceived value can be increased by adding value on service or decreasing the cost for sales and service usage. Petrick (2001, 2002, 2004) stated that perceived value is trade off between customer perception towards quality or benefit of product and sacription conducted through paid price. Sweeny and Soutar (2001) stated that value dimension consists of 4 aspects which are: emotional value, social value, quality value value for money: utility gained from perception towards quality and expected performance over product.

Satisfaction is level of feeling of someone after civilizing the perceived performance/result with former expectation (Kotler and Keller, 2009; Kotler and Armstrong (2010). Satisfaction of a service is determined by importance level of a customer before using the service, compared to customer's perception after he felt the performance of such product. Consumer expectation on service gives framework towards measurement and product given by the Company. The impact of service quality perception towards Purchase Intentions, satisfaction influences intention to switch. Research result of Robert et al. (2003) found that the relation of marketing mix and service quality have different construction and different influence, and the relation of both shall be better to be construed as predictor with the intention to behave on service quality.

Moreover, findings of McDougall and Levesque (2000) stated that perceived value plays role in acknowledging consumer satisfaction. Findings of Tam Jackie (2004) explain that costumer satisfaction and perceived value significantly influence post-purchase behavior. Parasuraman and Grewel (2000) and Parasuramwan and Colby (2001) found that perceived value as a dynamic construct which consist of 4 type of values which are acquisition value, transaction value, in-use value and redemption value. Finding of McDougall and Levesque (2000) and Keiningham et al. (2007) that consumer perception on perceived value in form of money correlate positively towards consumer satisfaction. Based on theory study and above variables relation then the submitted hypotheses are:

- H1.Service marketing mix partially affects perceived value,
- H2.Service quality on ships partially affects perceived value,
- H3.Service marketing mix and service quality on ships simultaneously affects perceived value,

- H4. Service marketing mix partially affects passenger's satisfaction,
- H5. Quality on ships partially affects passenger's satisfaction,
- H6. Service marketing mix and service quality on ships simultaneously affects passenger's satisfaction,
- H7. Perceived value affects passenger's satisfaction.

### III. RESEARCH METHOD

Based on the objective of the research, this research is intended to know the process of determination and implementation as well as to test the hypothesis of the influence of Service Marketing Mix, service quality towards perceived value as well as its impact upon ship passengers' satisfaction. Descriptive research intends to obtain description on implementation, service marketing mix, quality service, perceived value and ship passengers' satisfaction. Meanwhile, verificative research is conducted in order to know relation among variables through hypothesis analysis. To achieve all of the above, the used research method is survey.

Collected data in this research consists of primary and secondary data. To achieve the first objective as analysis unit is the ship passengers of the route of Jakarta, Surabaya, and Samarinda in Indonesia which have been recorded as customers for 2 (two) years or minimum 4 x round trip. The selection of recorded ship passenger is conducted since the passenger experiences the impact of service quality, perceived value and satisfaction by themselves. The sample taken in this research amounts to 210, thus fulfilling the requirement to be managed by using the method of Structural Equation Modelling.

### IV. RESULT AND ANALYSIS

#### a) Descriptive Analysis

Based on the response of passengers upon service marketing mix, the score value at the interval score 4-7 obtain an average score above 87.3, it illustrates that the respondents state that the application of service marketing mix of product, price, promotion, location, process, human resources, and physical evidence in general provide a high value and tend to very high. Meanwhile, the interval between 1-3 show an average score below 12.6. This means that only 12.6 of respondents state that the application of service marketing mix is still insufficient. Meanwhile, the response of passengers towards the ship service quality score at the interval of 4-7 obtain an average score above 84.02, this illustrates that the respondents state the quality of service of the ship is high and tend to very high. As for the interval between 1-3 show the average score below 15.97 means that the majority of respondents approximately of 15.97 state that service quality is still not good. This is due to the delivery of

services at ships are still less suitable.

Meanwhile, the response of the passenger towards perceived value for the score at the interval of 4-7 obtain an average score above 88.01 for ship passengers at the functional score. This illustrates that the respondents state that passenger perceived value is very high. Meanwhile the average value of ship passenger in response to emotional value stands at 88.3 and above at intervals of 4-7, while for the interval between 1-3 show the average value of 11.98% below, meaning that the respondents who state that perceived value experienced by the respondents that is not unsuitable correspond only 11.98. Meanwhile, the response of passengers towards the ship social value at the interval of 4-7 obtain an average score above 81.4 meaning that there is a tendency that the passenger deems social value of the ship as sufficient.

Passenger responses towards ship passenger satisfaction score at the interval of 4-7 obtains average scores above 84.02, it illustrates that the respondent express general satisfaction of the passengers give a high value even tend to very high. As for interval between 1-3 show the average score below 15.975%, this means that the majority of respondents at approximately 15.97 state that they are not satisfied.

#### b) Testing Hypothesis

To test the hypotheses, the result of path coefficient could indicate the causal relationship between those variables being examined. See Table 1 for that relationship.

Based on the Table 1, it can be concluded that: (1) service marketing mix does not have partially affects perceived value (H1 is rejected), (2) service quality on ships partially affects perceived value (H2 is supported), (3) service marketing mix and service quality on ships simultaneously affects perceived value (H3 is supported), (4) service marketing mix partially affects passenger's satisfaction (H4 is supported), (5) quality on ships partially affects passenger's satisfaction (H5 is supported), (6) service marketing mix and service quality on ships simultaneously affects passenger's satisfaction (H5 is supported), and (7) perceived value affects passenger's satisfaction (H7 supported)

### V. CONCLUSION

Based on the analysis of the research results described in the previous description, it can be concluded that shipping companies have optimized the application of service marketing mix, service quality, perceived value and satisfaction of passengers, this is seen in the scores that gathered at the score of 4-7. Service Marketing Mix does not partially affect perceived value, but service quality partially affects perceived value. This means, service marketing mix does not prove that it will increase perceived value.

Meanwhile, service quality contributes the increase of perceived value. And service marketing mix and service quality simultaneously affect perceived value.

*Table 1:* Path Coefficient (Standardized And Unstandardized Regression)

Hypothesis	CR Score	T Value (p<0.05)	Note
Service marketing mix partially affects perceived value	-1.394	0.163	Non Significant (H1 rejected)
Service quality on ships partially affects perceived value	2.700	0.000**	Significant (H2 supported)
Service marketing mix and service quality on ships simultaneously affects perceived value	50.496	0.000**	Significant (H3 supported)
Service marketing mix partially affects passenger's satisfaction	2.812	0.000**	Significant (H4 supported)
Service quality on ships partially affects passenger's satisfaction	4.860	0.000**	Significant (H5 supported)
Service marketing mix and service quality on ships simultaneously affects passenger's satisfaction	113.013	0.000**	Significant (H6 supported)
Perceived value affects passenger's satisfaction	4.855	0.000**	Significant (H7 supported)

\*\*significant at alpha 5%

And service marketing mix and service quality influence the satisfaction of the ship passengers both partially or simultaneously. This means, service marketing mix and service quality of ships can jointly increase passenger satisfaction, perceived value directly affects the Ship passenger satisfaction. This means, the greater the perceived value, the higher the satisfaction of passengers is.

Shipping companies should implement good standards of service quality through the measurement of ROPMIS namely resources, outcome, process, management, image and social Responsibility. Identifying the attributes of the service to improve the crew (crew) through training. Every 2 or 3 years, the company changes the interior of the ship.

The company seeks to conduct socialization that sailing by ship has a prestigious social value by using "Let's Sail By Sea Ship Slogan". Provide maximum service, responding to passenger complaints, and conduct passenger satisfaction surveys. Developing services products performed by the marine transportation service company in accordance with the demand of the ship passenger. Analyze in determining the price to see the purchasing ability of passengers and the level of competition. Evaluate media which will be used so that promotional effectiveness can reach the target segment. Company perform its distributions to agents through ON LINE providers in the purchase of tickets and schedule of departure and arrival at destination.

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# Le Management De L'eau Potable Dans Le Long Terme (Vers Une Gestion plus Efficace: Application Au Tunisien cas Tunisien)

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**Résumé** - l'objectif de ce travail est d'étudier la politique sectorielle de la gestion de l'eau potable en Tunisie en mettant l'accent sur ses limites et sur les contraintes auxquelles ladite gestion est soumise. Les résultats montrent que le prix de l'eau potable ne constitue pas un outil d'incitation à la baisse de sa consommation. L'analyse sectorielle montre que pour le secteur domestique l'eau est un bien de première nécessité. Pour l'industrie et le tourisme, la baisse de la consommation d'eau est due, relativement, au fait que ces secteurs sont à la recherche d'autres sources d'approvisionnement substituant l'eau de la « SONEDE » 1. Pour le secteur de borne fontaine, la baisse de la consommation est due principalement à la dégradation de ce secteur vu l'urbanisation que connaît la Tunisie durant les dernières décennies. Par ailleurs, l'hypothèse de cointégration, dans les quatre secteurs, entre la consommation, la production, le prix et le nombre d'abonnés est rejetée dans la plupart des cas.

**Mots-clés:** eau potable, efficacité, politique sectorielle, cointégration, racine unitaire.

**GJMBR - A Classification :** FOR Code: 150305, 150312 JEL Code : L87 , O15



*Strictly as per the compliance and regulations of:*



# Le Management De L'eau Potable Dans Le Long Terme (Vers Une Gestion plus Efficace: Application Au cas Tunisien

Ali Bouchrika<sup>α</sup>, Dr Fakhri Issaoui<sup>σ</sup> & Khaled Thabet<sup>ρ</sup>

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**Mots-clés** : eau potable, efficacité, politique sectorielle, cointégration, racine unitaire.

**Abstract** - The aim of this paper is to study the sectorial policy of the management of fresh water in Tunisia putting the stress on its limitations. The results show that the fresh water price does not stimulate the decrease of consumption. Indeed, for the domestic sector water is a good of first necessity. For the industry and Tourism the decrease of consumption is due to the abundance of 'SONEDE water'. For the 'Borne Fontaine' sector the decrease of consumption is due to the degradation of this sector. Besides the cointegration hypothesis, in the four sectors between consumption production price and number of customers, is rejected in the majority of cases.

**Keywords** : Fresh water, efficiency, sectorial politic, cointegration, unit root test.

## 1. INTRODUCTION

La disponibilité de l'eau en quantité et en qualité adéquate représente une contrainte majeure au développement économique et social surtout dans

les régions arides et semi-arides. Auparavant, cette ressource a été considérée comme un simple fluide ou un produit chimique alors qu'aujourd'hui elle est envisagée comme un milieu de vie qu'il faut préserver la quantité et la qualité. Par conséquent, l'eau doit être gérée comme un patrimoine précieux afin que son usage soit organisé pour permettre la satisfaction optimale de l'ensemble des besoins des usagers, éviter les gaspillages et empêcher la dégradation.

Dés lors, la maîtrise de l'eau et sa gestion rationnelle constituent le centre de préoccupation des nations. Le contrôle de cette ressource représente aussi bien un atout majeur au développement économique qu'une condition nécessaire de la promotion du bien être sociale. Toutefois, à cause de la rareté des ressources et leurs importances comme base de vie, des fondements juridiques sont apparus via la législation des lois que se soit au niveau de l'organisation de la gestion de l'eau ou bien au niveau du contrôle de la gestion de la ressource pour assurer une gestion équitable et durable. Les fondements économiques font qu'une gestion durable des ressources en eau signifie que l'exploitation doit se faire à un taux compatible avec leur renouvellement si cette ressource est renouvelable.

Du moment que la demande en eau constitue la somme de toutes les utilisations effectives et les pertes enregistrées, la gestion de la demande constitue l'ensemble des interventions et système d'organisation que les gouvernements et organismes de tutelle peuvent mettre en œuvre. Ladite gestion de la demande vise, par conséquent, à réduire les pertes physiques et économiques et à mieux satisfaire la demande de générations présentes et futures. Dans ce contexte général, Foster [1996] propose une structure d'analyse pour les processus de modernisation et de restructuration du secteur de l'eau et de l'assainissement. Il propose un modèle de planification dont l'objectif général est d'améliorer le bien être de la population.

Pour assurer un tel développement, la Tunisie est dans l'obligation de tirer les meilleurs rendements de ces ressources en eau et qui sont, par essence, limitées, aléatoires et inégalement réparties. Les pénuries conjoncturelles et structurelles sont des

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réalités anciennes dont la Tunisie a su gérer les conséquences d'une manière efficace.

Dans un contexte d'une gestion durable, la rareté de la ressource en eau peut être un obstacle qui coïncide avec les politiques de sa gestion. En outre, la croissance démographique suivit par l'augmentation de la population complique davantage le problème. Ainsi, l'objectif de ce papier est de savoir dans quelle mesure le mode de gestion actuel en Tunisie peut atteindre la durabilité de ses ressources en eau ?

Pour mener à bien ce travail nous allons voir l'évolution temporelle de la consommation totale et sectorielle ainsi que leurs composantes (section II). Ensuite, nous allons pencher sur les politiques sectorielles de gestion de l'eau potable (section III). La quatrième section étudiera l'existence d'une relation équilibrée de long terme et ce via une relation de cointégration. La cinquième et la dernière section conclura les principaux résultats.

## II. ÉVOLUTION TEMPORELLE DE LA CONSOMMATION ET SES COMPOSANTES

La Tunisie est située dans une zone semi aride caractérisée par une irrégularité de la pluviométrie engendrant des périodes, de plus en plus fréquente, de sécheresse. En outre, la nature des ressources tunisiennes est caractérisée par une multitude de problèmes dont principalement la variabilité temporelle et spatiale des ressources en eau, ce qui rend la gestion de cette ressource relativement délicate. La mobilisation de toutes les ressources disponibles et le recours à des ressources non conventionnelles sont parmi les solutions utilisées pour éviter la pénurie de l'eau.

En Tunisie la rareté des ressources exploitables a pour conséquence de pousser la gestion de la ressource envers l'optimisation des utilisations d'eau moyennant des politiques spécifiques visant la mise en place de systèmes d'incitations/sanctions aux différents usagers.

### a) Production et consommation totale

La production de l'eau de la SONEDE s'est évoluée durant les périodes 1971 et 2004 selon un taux de croissance annuel moyen de 3.6%. En effet, les eaux de surface produites par les différents barrages, ce sont évoluées de l'ordre de 230,7 Mm3 en 2004 (dont 2,9 Mm3 ont été recyclées pour des utilisations ultérieures). Les eaux souterraines produites en 2004 par les différents forages, sondages et puits sont élevées à 187,1 Mm3 représentant ainsi 46,2% de la production totale .

D'un autre côté, la consommation totale d'eau potable n'a cessé d'évoluer selon des rythmes relativement importants d'une année à une autre en atteignant 314,6 Mm3 en 2004. Conséquemment, la

pression sur la consommation due au développement démographique et sociale présente des contraintes majeures auxquelles la politique actuelle de gestion de la ressource est assujettie.

Les graphiques, illustrant l'évolution de la production et de la consommation totale ainsi que la consommation sectorielle et ses composantes (annexe I), montrent que la consommation croît avec un rythme non compatible à celui de la production, ce qui se traduit par un problème au niveau de la durabilité de cette ressource.

### b) Consommation sectorielle et l'évolution temporelle

Le volume d'eau consommé par le secteur domestique a enregistré un accroissement de 3,5% en 2004 par rapport à 2003. Cette évolution progressive, qui s'explique en partie par la croissance démographique de la population, affecte négativement le programme de la conservation de la ressource dans notre pays (le graphique 2 nous fournit une illustration de cette évolution).

Par ailleurs, le secteur industriel a enregistré une baisse de la consommation d'eau de la SONEDE. Ladite consommation suit un rythme faible et parfois décroissant et ce malgré le développement qu'a connu le secteur surtout depuis 1998.

Le secteur touristique, a connu une réalité similaire au secteur industriel malgré l'évolution qu'il a connue et le rôle qu'il joue dans l'économie nationale. Le secteur de borne fontaine est caractérisé par un rythme décroissant de la consommation comme l'illustre le taux élevé de desserte par des branchements individuels et qui a atteint 95,6% en 2004 pour l'ensemble de la Tunisie.

### c) Politique des prix

La manière de la fixation de prix de l'eau potable est l'un des outils permettant la rationalisation de la consommation de ce bien vital. Dans ce cadre, la politique de la SONEDE est basée essentiellement sur une tarification progressive par tranche de consommation et dont l'objectif est de pénaliser les groupes de consommateurs qui gaspillent le plus la ressource en eau. Notons que le prix moyen de vente d'eau a connu une évolution moyenne de 2,8 % par an durant la période 1971 et 2004. Sur le plan sectoriel l'évolution des prix a connu de multiples disparités.

En effet, concernant le secteur domestique et industriel, le prix a enregistré une évolution assez progressive et surtout pour les tranches inférieures de consommation. Toutefois, pour le secteur touristique, le prix était uniforme [égal au prix de la troisième tranche des deux premiers secteurs] alors que pour le secteur de borne fontaine le prix a connu une nette diminution depuis 1999.

Dans le secteur domestique, et malgré l'évolution du prix, la consommation d'eau a gardé un

rythme d'évolution assez fort. Ceci est expliqué par le fait que l'eau potable est un bien de première nécessité pour les ménages. Pour les deux secteurs industrie et tourisme la hausse des prix peut expliquer, du moins partiellement, la diminution de la consommation pour ces deux types d'usagers. Concernant le secteur de borne fontaine, et malgré la baisse du prix enregistrée dans les dernières années, la consommation a baissé étant donné le développement urbain et rural qu'a connu notre pays.

### III. POLITIQUE SECTORIELLE DE GESTION DE L'EAU POTABLE ET LE CRITÈRE D'EFFICACITÉ

La Tunisie est l'un des pays les moins dotée des ressources en eau. En effet, face à la croissance démographique et économique que connaît le pays; la politique tarifaire a comme objectif de rendre la gestion de l'eau plus efficace et d'assurer la viabilité du secteur de l'eau (par la couverture des charges d'exploitation est de financement de coût d'équipement). Ainsi, la politique de la gestion de l'eau potable vise alors à garantir la conservation de la ressource en eau et à rationaliser la consommation pour chaque secteur afin de garantir la durabilité de la ressource.

Dans ce contexte général, l'évaluation de la politique actuelle en termes de gestion de la consommation en eau potable dans les différents secteurs, nous oblige à recourir à une étude économétrique qui a pour objectif d'expliquer l'influence du prix et du nombre d'abonnés sur la structure des consommations sectorielles. Ainsi, nous proposons d'estimer des régressions linéaires pour chaque secteur afin de connaître la relation qui s'établit entre la consommation de l'eau [variable endogène] et le prix et le nombre d'abonnés [variables exogènes]. Toutes les variables sont exprimées sous forme logarithmique et par conséquent les paramètres constituent des élasticités.

#### a) Secteur domestique

Pour cette catégorie d'usagers, l'estimation de modèle retenu a donné le résultat suivant<sup>3</sup> :

$$CD = -4,503 + 0,2 PD + 0,63 NAD \quad R^2 = 0,9937$$

$$(-12,83) \quad (2,36) \quad (13,52) \quad \bar{R}^2 = 0,9933$$

Où CD représente la consommation domestique, PD le prix de l'eau et NAD le nombre d'abonnés domestiques.

Ainsi, nous remarquons que les coefficients estimés sont largement significatifs au seuil de 95% ce qui implique que les variables prix et nombre d'abonnés ont un effet multiplicateur sur la consommation dans le

secteur domestique. De même, nous remarquons que si le prix augmente de 1% la consommation augmente de 0,2%. Ceci nous ramène à affirmer que le facteur prix n'apparaît plus comme un outil incitatif pur la conservation de la ressource. En effet, du fait que l'eau potable est un bien de première nécessité pour les ménages, sa demande paraît non-conforme à la fameuse « loi de la demande ». En outre, la significativité de la variation de la consommation domestique par rapport au nombre d'abonnés montre qu'une augmentation de 1% du nombre d'abonnés a pour conséquent d'augmenter la consommation avec une proportion assez élevée avoisinant 0,62%. Ceteris paribus, Ce résultat prouve que l'effet de masse risque d'épuiser les ressources dans le moyen et le long terme étant donné la capacité limitée de la production.

#### b) Secteur industriel

Pour ce secteur ; la régression de la variable consommation sur les variables prix et nombre d'abonnés industriel a donné les résultats suivants.

$$CI = -0,411 + 0,22 PI + 0,27 NAI \quad R^2 = 0,886$$

$$(-1,51)(3,12)(4,06) \quad \bar{R}^2 = 0,879$$

Où CI la consommation industrielle, PI le prix industriel et NAI le nombre d'abonnés industriels. Les variables PI et NAI affectent significativement et positivement le niveau de la consommation au seuil de 99%. En effet, une hausse des prix de 1% entraîne une augmentation de la consommation de 0.22%. Cette relation positive montre que le prix ne peut être considéré comme un outil incitatif à la baisse de la consommation. Ceci n'est pas étonnant car les usagers industriels, qui sont considérés comme des gros consommateurs, sont situés généralement dans la tranche de consommations 151 m3 et plus où le prix est le plus élevé.

Concernant le nombre d'abonnés industriel, une variation de 1% de cette variable a pour conséquent d'augmenter la consommation de 0,27%. En effet, la variable « nombre d'abonnés » n'a pas un effet important sur la consommation. Ce phénomène est expliqué par le recours des industries d'une manière partielle ou totale à des sources d'approvisionnement autres que celles de la SONEDE (les usagers industriels recourent soit au recyclage de l'eau tout en restant abonné à la SONEDE ; soit à l'abandon complet de l'alimentation SONEDE par l'utilisation des forages propres).

#### c) Secteur touristique

L'estimation de la régression linéaire d la consommation touristique sur le prix et le nombre d'abonnés a donné les résultats suivants :

<sup>3</sup> le nombre entre parenthèse représente la statistique de Student



$$CT = -1,97 + 0,16 PT + 0,5 NAT$$

$$(-7,14) \quad (4,06) \quad (7,21)$$

$$\bar{R}^2 = 0,946$$

$$\bar{R}^{-2} = 0,94$$

Où CT représente la consommation du secteur tourisme, PT le prix d'eau servi à ce secteur et NAT le nombre d'abonnés du secteur tourisme.

Nous remarquons que les deux variables PT et NAT sont significatives au seuil de 99%. Egalement à ce qui a été dit pour les autres secteurs nous pouvons réaffirmer, pour le secteur touristique, l'incapacité de l'instrument « prix » à jouer un rôle incitatif pouvant rationaliser la consommation de l'eau toutes les fois que l'élasticité de la demande par rapport aux prix est positive. La variable NAT semble ne pas avoir un grand effet sur la consommation ce qui s'explique par le fait que plusieurs hôteliers ont eu recours à l'utilisation de l'eau à partir de leurs propres puits notamment pour différentes utilisations (arrosage de la pelouse, les douches etc.).

#### d) Secteur de borne fontaine

La régression linéaire obtenue dans le secteur de borne fontaine a donné les estimations suivantes :

$$CBF = -5,98 - 0,76 PBF + 1,08 NABF$$

$$(-3,40) \quad (-1,13) \quad (5,13)$$

Où CBF est la consommation de borne fontaine, PBF le prix de l'eau consommée par ce secteur et NABF le nombre d'abonnés dans ledit secteur. La variable NABF est significative au seuil de 1%. La variation de cette variable dans le secteur de borne fontaine suit presque le même rythme que la variable consommation ce qui s'explique par le fait que le développement urbain et rural du pays a diminué le nombre d'abonnés global dans ce secteur ; La variable PBF n'est pas significative même au risque d'erreur de 10%. Pour ce secteur le prix « réellement faible » ne peut pas constituer un facteur incitatif puisque la diminution enregistrée dans la quantité consommée est du essentiellement à la dégradation progressive de ce secteur.

## V. GESTION DE L'EAU POTABLE ET L'ÉQUILIBRE À LONG TERME

Dans un contexte d'une gestion durable de la ressource en eau en Tunisie, l'analyse de la structure de consommation de ce bien vis-à-vis de la capacité de production, du prix, et du nombre d'abonnés nous permet de détecter un sérieux problème au niveau de

leurs évolutions temporelles. En effet, malgré que la Tunisie est parmi les pays du monde les moins dotés de ressources en eau, la pression sur la consommation, suite au développement démographique et urbain, présente un problème dans la politique de la gestion actuelle de la ressource. Dans ce travail et tout en utilisant des données sectorielles sur la consommation, le prix et le nombre d'abonnés<sup>4</sup> nous étudions la stationnarité ainsi que la cointégration entre la consommation et ces composantes afin d'évaluer la stratégie actuelle de la gestion de l'eau potable en Tunisie.

### a) Analyse globale

L'étude empirique de l'évolution des deux variables consommation et production totale en fonction du temps nous permet d'observer des résultats non souhaitables pour réaliser une gestion durable. Pour cette raison on considère les séries annuelles de ces deux variables disponibles sur la période allant de l'année 1971 jusqu'à 2004.

Les résultats montrent que les deux séries au niveau de la consommation et la production ne sont pas stationnaires, les valeurs estimées de la statistique ADF sont respectivement 0,76 et -0,132 et qui sont supérieures à la valeur critique (-2,96) au seuil de 5%. Par contre, elles (c'est-à-dire les séries) sont stationnaires en différences première (les statistiques ADF sont respectivement -3,43 et -3,04). Les résultats issus de l'application du test ADF sur les résidus de la relation statistique entre la consommation et la production<sup>5</sup> montrent la non stationnarité des résidus au seuil de 5%. En effet, la statistique ADF estimée (-2,56) est supérieure à la valeur critique (-3,29) de Engle et Yoo (1987). Par conséquent, les séries de consommation et de production ne sont pas cointégrés et par la suite il n'y a pas un équilibre à long terme entre ces deux variables. Ceci peut poser un problème dans la gestion de l'eau potable dans notre pays.

### b) Analyse sectorielle

Pour analyser la situation de la gestion de l'eau potable dans notre pays, on va étudier les mesures de durabilité dans chaque secteur. Autrement dit, nous allons s'intéresser à l'efficacité de la politique de prix et l'évolution du nombre d'abonnés sur la structure de consommation pour une projection à long terme.

Dans le secteur domestique les deux séries de consommation et de prix sont stationnaires, en différence première. En effet, les statistiques estimées du test ADF sont respectivement -5,028 et -5,35 inférieurs à la valeur critique de (-2,96) au seuil de 5%. En outre, les résultats concluent à la non stationnarité des résidus de la relation statistique entre la consommation domestique et le prix<sup>6</sup> d'où les deux séries ne sont pas cointégrées et par conséquent il

<sup>4</sup> Les données proviennent du rapport statistique 2004 de la SONEDE.

<sup>5</sup> La relation statistique entre la consommation totale CT et la production totale PT s'écrit :  $CT_t = \alpha + \beta PT_t + \varepsilon_t$

<sup>6</sup>  $CD_t = \alpha + \beta PD_t + \varepsilon_t$



n'existe pas une relation d'équilibre à long terme entre ces deux variables.

Pour le secteur industriel, les résultats montrent que les séries de consommation, de prix et du nombre d'abonnés sont stationnaire en différence première au seuil de 5%. Les valeurs estimées de la statistique de ADF sont respectivement -5,53, -5,35 et -3,77 inférieures à la valeur critique de (-2,96). Par ailleurs, les tests de cointégration entre les deux couples consommation et prix d'une part et consommation et nombre d'abonnés d'autre part sont sujettes à des régressions fallacieuses. Cependant la non cointégration de ces deux couples montre que l'équilibre à long terme ne pourrait être atteint. Ceci explique que la stratégie de politique de gestion actuelle peut être efficace que pour des projections de court terme.

Concernant le secteur touristique l'application du test ADF montre la stationnarité des trois séries ; consommation, prix et nombre d'abonnés, exprimées en différence première au seuil de 5% (ADF estimés sont respectivement -5,008, -5,27 et -3,62 inférieures à la valeur critique de -2,96).

Les résultats montrent la non stationnarité des résidus calculés à partir de la relation statistique entre la consommation et le prix touristique<sup>7</sup>, par contre la stationnarité des résidus calculés à partir de la relation statistique entre la consommation et le nombre d'abonnés touristiques<sup>8</sup>. Par conséquent dans ce secteur de tourisme il n'y a pas une relation de cointégration entre les deux variables consommation et prix, ce qui résulte à un déséquilibre à long terme dans l'évolution de ces deux variables. Par contre, l'équilibre entre les deux variables consommation et nombre d'abonnés paraît être atteint et par la suite on peut avoir une relation stable entre ces deux variables pour une projection future. Ceci est vérifié par la relation de cointégration entre les deux variables. Cependant, ce dernier résultat est très critique du fait que la diminution de la consommation dans ce secteur est due essentiellement aux conséquences supra mentionnées.

#### IV. CONCLUSION

Les analyses faites sur la politique actuelle de la gestion de l'eau potable en Tunisie montrent des résultats étonnant dans la structure de la fonction de la demande globale et sectorielle. Ainsi, la stratégie adoptée actuellement a atteint presque ses limites vues la rareté de ce bien vital. L'inefficacité observée dans la fonction de consommation en fonction des variables prix et nombre d'abonnés est un indicateur qui complique les objectifs d'une gestion durable de la ressource de l'eau potable dans le cas tunisien.

<sup>7</sup> Cette Relation est donnée par l'équation :  $C_t = \alpha + \beta P_t + \varepsilon_t$ .

<sup>8</sup> Cette Relation est donnée par l'équation :

$$C_t = \alpha + \beta N B_t + \varepsilon_t$$

Cependant, si on suppose que les ajustements linéaires des variables réalisées sur les 34 périodes de notre étude restent vérifiées dans des horizons futuristes (dans le sens qu'on suppose implicitement l'absence des changements structurels dans la structure des consommation, des prix, du nombre d'abonnés et de la capacité de la production), les décideurs dans le secteur doivent se préparer et prendre des mesures adéquates pour dépasser la crise dans la gestion de l'eau potable afin de protéger les générations futures.

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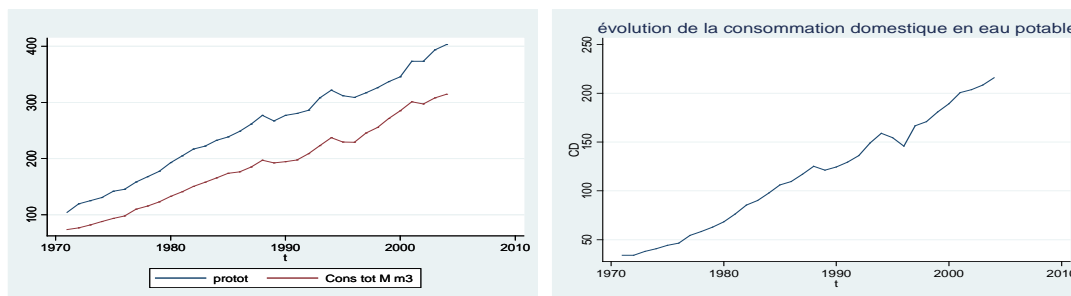
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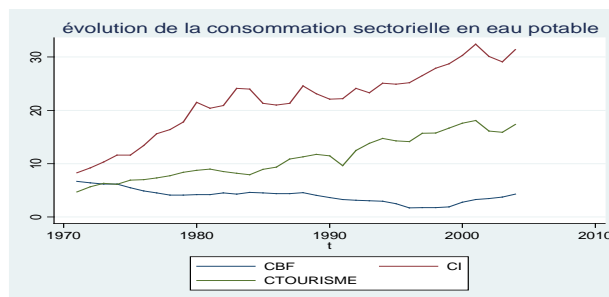
## ANNEXES

*Figure 1* : évolution temporelle de (a) consommation et production totales (b) consommation domestique (c) consommation sectorielle (d) nombre d'abonné du secteur domestique (e) nombre d'abonnée du secteur industriel (f) nombre d'abonnée par secteur (g) prix de l'eau potable par secteur

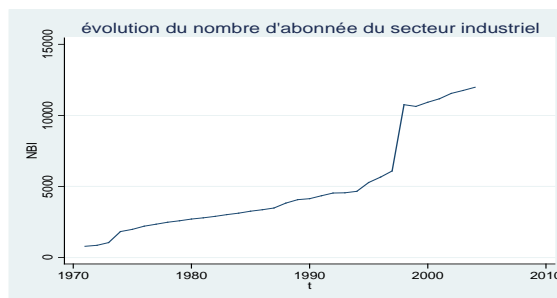
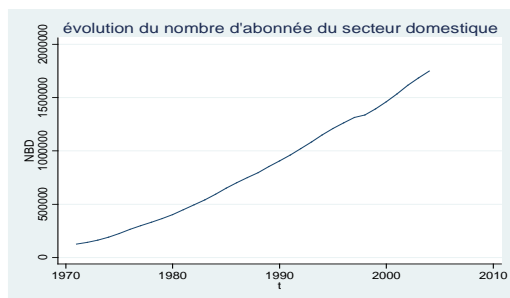
(a) évolution de la consommation et de la production totales. (b) évolution de la consommation domestique en eau potable



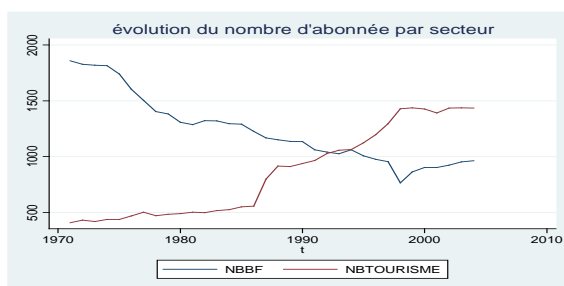
(c) évolution de la consommation sectorielle en eau potable



d) évolution du nombre d'abonnée du secteur domestique (e) évolution du nombre d'abonné du secteur industriel



(f) évolution du nombre d'abonnée par secteur



(g) évolution sectorielle du prix de l'eau potable

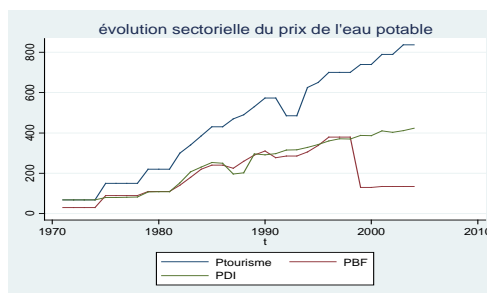
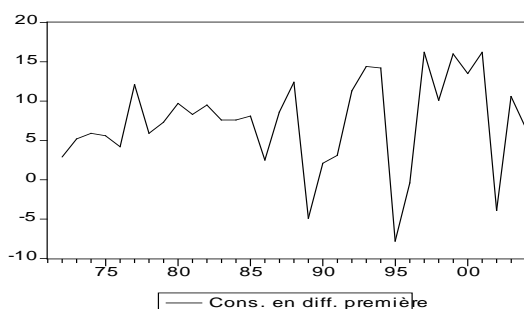
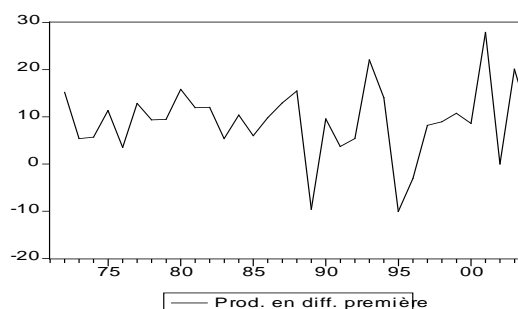


Figure 2 : (A) évolution de la consommation totale en différence première (B) évolution de la production totale en différence première. Evolution en différence première de : (a') consommation domestique (b') consommation industrielle (c') consommation du secteur tourisme (d') nombre d'abonnée du secteur industriel (e') nombre d'abonnée du secteur tourisme (f') prix de l'eau potable dans le secteur domestique (g') prix de l'eau potable dans le secteur du tourisme.

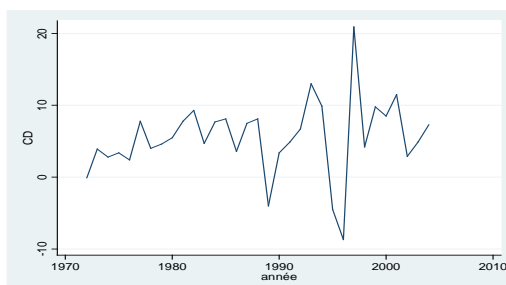
(A) Consommation totale



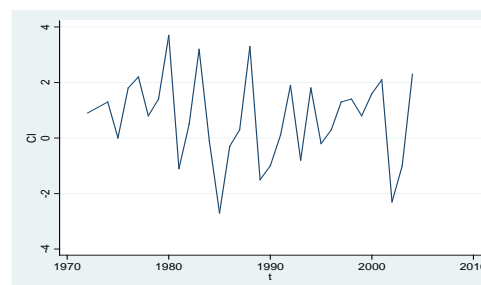
(B) Production totale



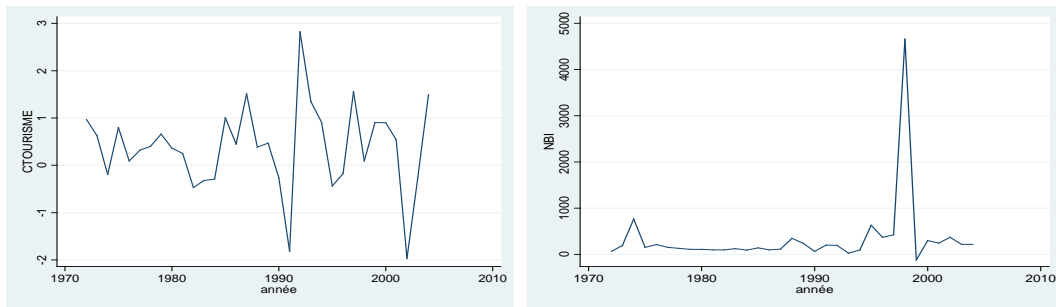
(a') consommation domestique



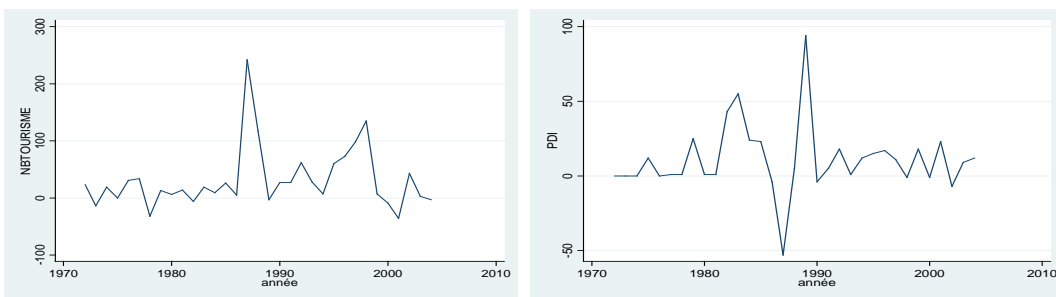
(b') consommation industrielle



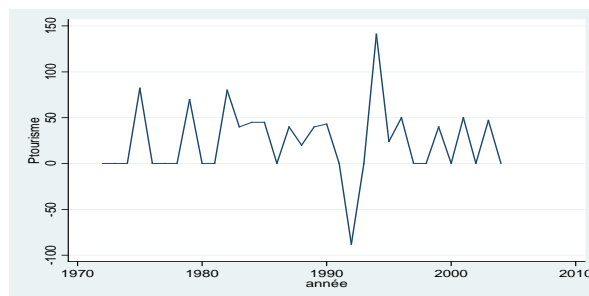
(c') consommation du secteur du Tourisme (d') nombre d'abonné du secteur industriel



(e') nombre d'abonné du secteur du Tourisme (f') prix de l'eau potable dans le secteur domestique



(g') prix de l'eau potable dans le secteur du Tourisme



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#### 4. MANUSCRIPT'S CATEGORY

Based on potential and nature, the manuscript can be categorized under the following heads:

Original research paper: Such papers are reports of high-level significant original research work.

Review papers: These are concise, significant but helpful and decisive topics for young researchers.

Research articles: These are handled with small investigation and applications

Research letters: The letters are small and concise comments on previously published matters.

#### 5. STRUCTURE AND FORMAT OF MANUSCRIPT

The recommended size of original research paper is less than seven thousand words, review papers fewer than seven thousands words also. Preparation of research paper or how to write research paper, are major hurdle, while writing manuscript. The research articles and research letters should be fewer than three thousand words, the structure original research paper; sometime review paper should be as follows:

**Papers:** These are reports of significant research (typically less than 7000 words equivalent, including tables, figures, references), and comprise:

- (a) Title should be relevant and commensurate with the theme of the paper.
- (b) A brief Summary, "Abstract" (less than 150 words) containing the major results and conclusions.
- (c) Up to ten keywords, that precisely identifies the paper's subject, purpose, and focus.
- (d) An Introduction, giving necessary background excluding subheadings; objectives must be clearly declared.
- (e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition; sources of information must be given and numerical methods must be specified by reference, unless non-standard.
- (f) Results should be presented concisely, by well-designed tables and/or figures; the same data may not be used in both; suitable statistical data should be given. All data must be obtained with attention to numerical detail in the planning stage. As reproduced design has been recognized to be important to experiments for a considerable time, the Editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned un-refereed;
- (g) Discussion should cover the implications and consequences, not just recapitulating the results; conclusions should be summarizing.
- (h) Brief Acknowledgements.
- (i) References in the proper form.

Authors should very cautiously consider the preparation of papers to ensure that they communicate efficiently. Papers are much more likely to be accepted, if they are cautiously designed and laid out, contain few or no errors, are summarizing, and be conventional to the approach and instructions. They will in addition, be published with much less delays than those that require much technical and editorial correction.



The Editorial Board reserves the right to make literary corrections and to make suggestions to improve brevity.

It is vital, that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

## Format

*Language: The language of publication is UK English. Authors, for whom English is a second language, must have their manuscript efficiently edited by an English-speaking person before submission to make sure that, the English is of high excellence. It is preferable, that manuscripts should be professionally edited.*

Standard Usage, Abbreviations, and Units: Spelling and hyphenation should be conventional to The Concise Oxford English Dictionary. Statistics and measurements should at all times be given in figures, e.g. 16 min, except for when the number begins a sentence. When the number does not refer to a unit of measurement it should be spelt in full unless, it is 160 or greater.

Abbreviations supposed to be used carefully. The abbreviated name or expression is supposed to be cited in full at first usage, followed by the conventional abbreviation in parentheses.

Metric SI units are supposed to generally be used excluding where they conflict with current practice or are confusing. For illustration, 1.4 l rather than  $1.4 \times 10^{-3} \text{ m}^3$ , or 4 mm somewhat than  $4 \times 10^{-3} \text{ m}$ . Chemical formula and solutions must identify the form used, e.g. anhydrous or hydrated, and the concentration must be in clearly defined units. Common species names should be followed by underlines at the first mention. For following use the generic name should be constricted to a single letter, if it is clear.

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Title: The title page must carry an instructive title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) wherever the work was carried out. The full postal address in addition with the e-mail address of related author must be given. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining and indexing.

*Abstract, used in Original Papers and Reviews:*

### Optimizing Abstract for Search Engines

Many researchers searching for information online will use search engines such as Google, Yahoo or similar. By optimizing your paper for search engines, you will amplify the chance of someone finding it. This in turn will make it more likely to be viewed and/or cited in a further work. Global Journals Inc. (US) have compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

### Key Words

A major linchpin in research work for the writing research paper is the keyword search, which one will employ to find both library and Internet resources.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy and planning a list of possible keywords and phrases to try.

Search engines for most searches, use Boolean searching, which is somewhat different from Internet searches. The Boolean search uses "operators," words (and, or, not, and near) that enable you to expand or narrow your affords. Tips for research paper while preparing research paper are very helpful guideline of research paper.

Choice of key words is first tool of tips to write research paper. Research paper writing is an art. A few tips for deciding as strategically as possible about keyword search:



- One should start brainstorming lists of possible keywords before even begin searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in research paper?" Then consider synonyms for the important words.
- It may take the discovery of only one relevant paper to let steer in the right keyword direction because in most databases, the keywords under which a research paper is abstracted are listed with the paper.
- One should avoid outdated words.

Keywords are the key that opens a door to research work sources. Keyword searching is an art in which researcher's skills are bound to improve with experience and time.

Numerical Methods: Numerical methods used should be clear and, where appropriate, supported by references.

*Acknowledgements: Please make these as concise as possible.*

## References

References follow the Harvard scheme of referencing. References in the text should cite the authors' names followed by the time of their publication, unless there are three or more authors when simply the first author's name is quoted followed by et al. unpublished work has to only be cited where necessary, and only in the text. Copies of references in press in other journals have to be supplied with submitted typescripts. It is necessary that all citations and references be carefully checked before submission, as mistakes or omissions will cause delays.

References to information on the World Wide Web can be given, but only if the information is available without charge to readers on an official site. Wikipedia and Similar websites are not allowed where anyone can change the information. Authors will be asked to make available electronic copies of the cited information for inclusion on the Global Journals Inc. (US) homepage at the judgment of the Editorial Board.

The Editorial Board and Global Journals Inc. (US) recommend that, citation of online-published papers and other material should be done via a DOI (digital object identifier). If an author cites anything, which does not have a DOI, they run the risk of the cited material not being noticeable.

The Editorial Board and Global Journals Inc. (US) recommend the use of a tool such as Reference Manager for reference management and formatting.

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*Figures: Figures are supposed to be submitted as separate files. Always take in a citation in the text for each figure using Arabic numbers, e.g. Fig. 4. Artwork must be submitted online in electronic form by e-mailing them.*

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Even though low quality images are sufficient for review purposes, print publication requires high quality images to prevent the final product being blurred or fuzzy. Submit (or e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Do not use pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings) in relation to the imitation size. Please give the data for figures in black and white or submit a Color Work Agreement Form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

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the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

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**12. Make all efforts:** Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

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**16. Use proper verb tense:** Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

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**21. Arrangement of information:** Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

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**24. Never copy others' work:** Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

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**26. Go for seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

**27. Refresh your mind after intervals:** Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

**28. Make colleagues:** Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

**29. Think technically:** Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

**30. Think and then print:** When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

**31. Adding unnecessary information:** Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be



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**33. Report concluded results:** Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

**34. After conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

## INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

### Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

### Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

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Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page



- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

- Use standard writing style including articles ("a", "the," etc.)
- Keep on paying attention on the research topic of the paper
- Use paragraphs to split each significant point (excluding for the abstract)
- Align the primary line of each section
- Present your points in sound order
- Use present tense to report well accepted
- Use past tense to describe specific results
- Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives
- Shun use of extra pictures - include only those figures essential to presenting results

#### **Title Page:**

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

#### **Abstract:**

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript-- must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

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shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

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- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

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- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
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Approach:

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- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
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principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

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- Explain materials individually only if the study is so complex that it saves liberty this way.
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- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

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- Report the method (not particulars of each process that engaged the same methodology)
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- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

#### Approach:

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- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

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The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently. You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

#### Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

#### What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.



- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

#### Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

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- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

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The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
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