



INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION AND MANAGEMENT

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CORPORATE GOVERNANCE IN INDIA: TOWARDS INTROSPECTION AND SOLUTIONS**ANJANEY PANDEY**

LECTURER (SR. SCALE)

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CHITRAKOOT SATNA, M. P.****ABSTRACT**

In the era of fast moving economy, larger emphasis has been given to the mandatory disclosures to be provided to the stakeholders who don't have otherwise easy access to the information of the enterprises. The corporate governance has been adopted by many leading Indian companies and the information provided by them have been taken to be trustworthy and recognized at their face value. But, the recent Satyam scam and several others have put the process of corporate governance under scanner. One sobering conclusion from Satyam episode is that no matter how good the regulatory system may be, it can't always prevent frauds. The best antidote to frauds is good management. The paper is an attempt to examine the disclosure practices of the organizations of today. The authors advocate that it is not the mere figures which get reflected in annual statements but it is the ethics and values which the promoters and managers deeply succumb to. Hence, the authors suggest that the managers have to get rid of the mentality of "nothing succeeds like success", and "end justifies the means". Their guiding principles should find their roots in the Gandhian philosophy which advocates the sanctity of means.

KEYWORDS

corporate governance, corruption, accountability, corporate ethics.

BACKGROUND AND RATIONALE OF CORPORATE GOVERNANCE

Corporations pool capital from a large investor base both in the domestic and in the international capital markets. In this context, investment is ultimately an act of faith in the ability of a corporation's management. When an investor commits money in a corporation, he expects the board and the management to act as trustees and ensure the safety of the capital and also earn a rate of return that is higher than cost of the capital. In this regard, investors expect management to act in their best interests at all times and adopt good corporate governance practices. Corporate governance is a concept, rather than an individual instrument. It includes debate on the appropriate management and control structures of a company. It includes the rules pertaining to the power relations between owners, the board of directors, management and the stakeholders such as employees, suppliers, customers as well as the public at large.

The simplest and most commonly quoted definition of corporate governance is that provided by the Cadbury Report (U.K.): "Corporate governance is the system by which businesses are directed and controlled." Another all encompassing definition comes from the preamble of OECD Principles stating that "Corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined". Hence, corporate governance is the acceptance by management of the inalienable rights of shareholders as the true owners of the corporation and of their own role as trustees on behalf of the shareholders. It is about commitment to values, about ethical business conduct and about making a distinction between personal and corporate funds in the management of a company.

CORPORATE GOVERNANCE IN INDIA

India's version of corporate governance is basically an 'Anglo-American' adaptation. Some of it has been drawn out of the Sarbanes-Oxley Act, which came up in the US after a series of accounting scandals. Corporate governance reforms in the US and the UK have focused on making the board, independent of the CEO. In India, the focus is not much on the 'conflict between management and owners', but on the 'conflict between the dominant shareholders (invariably the promoters) and the minority shareholders.

The formal practice in corporate governance was initiated in 1998 with the publication of a voluntary code- the Desirable Code of corporate Governance by CII. The first formal effort in this direction was done by SEBI by evolving a regulatory framework for the listed companies following the recommendations of the Kumarmangalam Birla Committee report in February, 2000. The Ministry of Corporate Affairs had appointed Naresh Chandra Committee on Corporate Audit and Governance in 2002 in order to examine various corporate governance issues. It made recommendations in two key aspects of corporate governance: financial and non-financial disclosures: and independent auditing and board oversight of management. The Government of India is making all efforts to bring transparency in the structure of corporate governance through the enactment of Companies Act and its amendments. (Business Portal of India Corporate Governance.htm). The Report of SEBI committee on corporate governance under the chairmanship of Mr. N.R. Narayanmurthy (2003) had mainly focused on strengthening the responsibilities of audit committees; improving the quality of financial disclosures, including those related to party transactions and proceeds from initial public offerings; requiring corporate executive boards to assess and disclose business risks in the annual reports of companies; introducing responsibilities on boards to adopt formal codes of conduct; the position of nominee directors; and stock holder approval and improved disclosures related to compensation paid to non-executive directors.

SOME BITTER TASTES - RECENT EXPERIENCES

A study called 'Early Warning Signals of Corporate Frauds', conducted by the Pune-based India Forensic Consultancy Services, a forensic accounting and education firm, from January 2008 to August 2008 has come out with shocking revelations about corporate frauds. The study investigated 11 sectors, viz. real estate, retail, banking, manufacturing, insurance, public sector undertakings, mutual funds, transport and warehousing, media and communications, oil and gas and information technology. The study has revealed that at least 1,200 companies out of 4,867 companies listed on the Bombay Stock Exchange and 1,288 companies listed on the National Stock Exchange as on March 31, 2007, including 25-30 companies in the benchmark Sensex and Nifty indices, have messaged

their financial statements. Another revelation is that the manufacturing sector, which contributes about 28 per cent of India's gross domestic product, is the one most ridden with fraudulent behavior mainly due to the peculiar nature of the business and the procedural complexities inherent in this sector. Real estate and public sector undertakings came second.

CORPORATE GOVERNANCE - A REPRIEVE OR ILLUSION

With the introduction of corporate governance concepts based on the Kumar Mangalam Birla Committee's recommendations in 2000, investors developed a confidence of being protected from the mal-effects of the corporate frauds. However, the Satyam episode proved to be an aberration of the first order. One sobering conclusion from the Satyam episode is that no matter how good the regulatory system may become, it cannot always prevent frauds. The time has come for Indian companies to make their "corporate governance" reports more useful for investors, rather than a procedural formality. The best antidote to frauds is good management.

Noted legal expert and then Union Science and Technology Minister Kapil Sibal expressing government's disappointment over the Satyam Computers fraud remarked that careless role of independent auditors in frauds of corporate houses let the government feel down. "The system needs to be changed. You have the independent regulators, the independent directors, independent auditors in the context of the Companies Act. And what have these independent auditors done? I don't want to take examples. But they have let us down."

Mr. Sibal also suggested setting up a body on the lines of the Election Commission to oversee auditors' functioning. He added, "We need to change the system, on the basis of which we appoint these independent regulators. We need to make sure that they are not necessarily accountable directly to government or that they have a secure tenure through which they can attain independence like for example the Election Commission, where term of commissioners cannot be interfered with except through very stringent procedures of removals," (ANI) ([/independent-auditors-let-us-down-in-corporate-frauds-kapil-sibal_100145008.htm](#))

CORPORATE GOVERNANCE - WHY WE FAIL?

Monks and Minnow have noted, "Corporations determine far more than any other institution the air we breathe, the quality of the water we drink, even where we live. Yet they are not accountable to anyone" (Power and Accountability). In Nell Minnow's unforgettable words, "boards of directors are like subatomic particles—they behave differently when they are observed." More vigilant shareholders are also more likely to be "socially responsible," in the true meaning of that term, increasing triple bottom line returns (adding economic, environmental and social value).

The growing importance of the Corporate Sector calls for greater transparency and availability of data. Furthermore, the withdrawal of direct regulatory functions by the Government such as industrial licensing, import licensing, capital issues and exchange controls means that a number of avenues of collecting data have ceased to exist while the need for them has grown for the purposes of indicative planning, forecasting and research. There are more than five lakh companies registered in the ROCs but the actual number of companies, which are operating, is not known. This situation seriously affects the reliability of various estimates. An exercise conducted in March 1999 indicated that about 47 per cent of the registered companies filed their balance sheet for the year 1997-98 with the ROCs. RBI studies on company finances are based on the annual reports and balance sheets of certain sample companies. In the absence of a reliable population frame, the RBI is not in a position to apply suitable sampling techniques. Further, the RBI is also constrained by the poor response from companies and non-receipt of annual reports directly from the ROCs. The RBI's findings are thus based mainly on the data of responding companies and the Fact Sheets prepared by the DCA. The reliability of the estimates of gross savings and investment in the private Corporate Sector arrived at by blowing up the sample results available from the RBI's studies in proportion to the coverage of the paid-up capital (PuC) of the sample companies to the PuC of all companies has been questioned time and again.

The Working Group under Dr. Arun Ghosh on Modernization of Indian Statistical System strongly recommended a one-time census of all genuine and operating companies to identify all futile and nonperforming companies for de-registration. According to the group, the law may need an amendment and perhaps an Ordinance may be passed initially, followed by a Bill for presentation to Parliament, to enable this. Corporate winding up is a long-drawn procedure at present, but if the law provides for the disposal of assets and liabilities, a massive 'cleaning-up' operation could occur. The working group also recommended that after a grace period of 3 months, any company which does not submit its accounts for the previous year be 'de-registered', and the fact be properly notified (Corporate Sector statistics.htm).

WHAT IS THE WAY-OUT?

Warren Buffet in his cautionary advice to share holders has urged "Both the ability and fidelity of managers have long needed monitoring. If able but greedy managers overreach and try to dip too deeply into the shareholders' pockets, directors must slap their hands. Overreaching has become common but few hands have been slapped." The corporate laws of any country emphasize on a corporate report which is supposed to provide a true picture of the states of affair in the company. The failure of the system in several instances have questioned the very purpose of the two institutions that are supposed to be watch dogs for good corporate governance : independent directors and external auditors. In such situations, the voice of inner conscience can offer the solution.

ETHICS IN BUSINESS- THE GANDHIAN INSPIRATION

The recent failure of Satyam and other business cases of fraud and unfair reporting has caused the faith in the general public and investors in particular dived to an all time low and people woke up to the fact that ethics and business can never be divorced, a fact Gandhiji pointed out ages ago. This is being recognized more and more in business. "Trusteeship in business, the way shown by Gandhiji, is the only way to succeed in the long run," said Anu Agha, ex-chairperson of Thermax in a recent conference on Humane Capitalism. Gandhiji's principles of trusteeship, which affirms that the rich should hold themselves as trustees of the wealth they possess, and his discernment that the means are as important as the ends, are eternally relevant for responsible business. Any business enterprise that has its eye only on maximizing wealth and profit loses its moral and social legitimacy to exist and operate. Trusteeship principle advocated by Gandhiji provides a means of transforming the present capitalist order of society into an egalitarian one. It is in many ways different from the concept of socialism, as Gandhiji did not believe in using force either by the individual or by the state. Trusteeship, as a concept is not absolute but relative in time and space to the needs of the society. The essence of trusteeship as a moral principle however is not relative but absolute: what is relative or tentative is the framework of practical economic arrangements based on the moral philosophy. When the principle of trusteeship is accepted by any individual voluntarily and without any reservation, certain concomitants flow from such acceptance:-

1. Simplicity of life style, the rejection of all extravagance and the flaunting of wealth is the first and the immediate result.
2. It rules out any wrong means outside the legal and moral framework, in his pursuit of wealth. Even surplus wealth already in one's possession is regarded as wealth held in trust for society by an individual, to be utilized only for the benefit of society. Where then is the question of acquiring more wealth by adopting unfair or unjust or unfair means?
3. Any activity harmful to society (although it may result in wealth to particular institution or individual) has thus to strictly avoided.
4. One has to treat others as human beings and not as units of labour to be purchased at the lowest price for increasing production and maximizing profits.
5. One stands committed to giving full opportunities to workers in the enterprise, to learn to take greater responsibility, and to participate in decision making at all levels, according to the actual and potential capacities. This includes the decision, of the formula for apportioning profits and surpluses generated by the institute.
6. Since trusteeship presupposes voluntary acceptance, all violence is scrupulously avoided. Trusteeship is promoted only by love and persuasion.

In an excellent review of the Gandhian philosophy and its implications for today's business and policy related decisions Pani (200) suggests few things which the management needs to take into consideration for being more accountable. The major problem that the business managers of today face is a constant challenge to showcase their competence, dynamism through the scintillating statements of accounts as their perks and career advancements depend upon how indispensable you pretend yourself for the organization. Such a mentality seems to be proving disastrous to the business and also to the humankind. The way out is in Gita- the 'nishkam karma'. If one performs his duties for duties sake without being concerned about the results then what is undesirable in the action is eliminated. According to Gandhi, man is always in search of godliness (devatva) and this can be achieved only through the performance of one's duties for duties sake. This also means that the actions, which cannot be carried out without aiming at the fruits derived from them, should not be taken up; they should be discarded. Thus activities involving falsehood, violence, exploitation, etc. are automatically discarded as undesirable. It can be summed up in the statement of Norman Vincent Peale "integrity pays, you need not cheat to win." The power of ethical management provides much needed message-that acting ethically is the vital responsibility of any leader.

CONCLUSION

It is said "The mother earth has enough for everyone's need, but not enough for anyone's greed". If the business owners and managers follow the righteous path, it is a win-win situation for the all- a true corporate social responsibility. Although it seems difficult, but not impossible as we have the examples of success in the case of Infosys, Bajaj industries and Tatas. All it needs is an effort with pure heart. It took over three centuries for the modern industrial civilization to reach the present stage of development. In this civilization, morality and ethics do not have a place they deserve. And to replace this civilization with a real modern civilization based on morality, equality and human dignity would not be a quick fix affair. Modern civilization, based as it is on violence, competition and exploitation, has brought about a socio-economic and political infrastructure, which supports, sustains and promotes it. This infrastructure will have to be dismantled and a new one put in place for a new civilization to take roots. But we know that the building of the infrastructure cannot be independent of the building of the mind and soul of a new civilization. It means a paradigm shift, which does not come in a day; it takes time to fructify.

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QUALITY FUNCTION DEPLOYMENT FOR SERVICE DEVELOPMENT OF SELECTED PRIVATE COLLEGES/UNIVERSITIES

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ABSTRACT

The study aimed to identify the preferences of the parents and the senior high school students in private colleges and universities. On the basis of these preferences, House of Quality (HOQ) was then applied to capture the whole picture of the organization relative to the needs of its customers and its strengths and weakness to its competitor. Forty Eight (48) respondents from senior high school students and twelve (12) respondents from the parents of the senior high school students have been asked to accomplish a 21-item survey questionnaire about their requirements in choosing a college/university. The results of this is a prioritize criteria list of six elements namely; Curriculum, Quality of Instruction, Security and Safety, Achievement of School, Technological Advancement, Cost of Education. Considering these criteria, a customer satisfaction survey was developed and was given to thirty-four (34) randomly selected senior college students from University/College X and two focus groups from University/College Y and Z were then asked to fill out the customer satisfaction survey. The data obtained were then transferred to one of the tools in Quality Function Deployment that is the House of Quality. This resulted to competitive-assessment of University/College X. The House of Quality revealed that the percentage passer in board examination is the most critical factor in translating the desirable criteria of the respondents in choosing a University/College. It was followed by the faculty qualification tied with the achievement of the students. Third critical factor is upgraded instructional facilities. On the other hand, Competitive Advantage of the University/College X was also revealed where the cost of education is its current strength. In the end, recommendations were made for service development of University/College X relative to the needs of its incoming customers and current customers.

KEYWORDS

competitive advantage, cost of education, house of quality, quality function deployment.

INTRODUCTION

Customers nowadays, seek more requirements to the product or service being rendered by the business industry. They want more value to the trade-off like money and time they've given in exchange to the service or finished goods they've purchased. Education is one of the biggest budgets that parents allocate in their resources. No doubt parents would like to give the best to their children within their means. Education also is the stepping-stone in the achievement of the parents' dream for their children and also to the child's own goal. However, free education is limited in our country because of lack of public schools and universities within the different regions. That's why parents would stretch their means and ways just so their children will be given their right to education. There are private schools and universities that they might go to in order to finish their studies and consequently, achieved their desired goals.

REVIEW OF LITERATURE

"Quality function Deployment (QFD) is a planning and problem-solving methodology that is renowned for translating customer requirements (CRs) into engineering characteristics (ECs) of product planning and improvement" (Li, et al , 2011). For instance, Dar et al (2011) used Quality Function Deployment in analyzing the customers' requirement in a cement industry and the input data came from the customers, competitors and company's higher authorities through questionnaire. The results revealed that "customers require good quality, strength with nominal price" (Dar, et al. 2010). Li et al (2011),also used Quality Function Deployment- House of Quality in determining the aggregated priority ratings of an engineering characteristics of a product. They included a new approach in House of Quality, which exploits the competition and preference engineering characteristics, which could be used in product planning and improvement. Wang and Zhong (2009) used House of Quality for translating the requirements of enterprises for the graduates in Higher Education. The enterprises' requirements were analyzed and classified into four groups and linking this to the Higher Education's quality dimension, which was categorized into seven groups. A case study was conducted and one university was selected to demonstrate the application of Quality Function Deployment for "identifying the gap between the higher education and the enterprise requirements, and finding the weak points for further improvement"(Wang, 2009). Koksals, et al. (1998) used quality Function Deployment approach to improve the Industrial Engineering Education at Middle East Technical University. Stakeholders requirement were identified through survey from the IE students, faculty and future employers. Then, IE education requirements are identified to meet the stakeholders' requirements. The study revealed a strong initiative to consider improvement in teaching and counseling and curriculum design. (Koksals, et al, 1998). The incoming customers' need in Higher Education have not fully identified yet in the literature. Hence, the aim of this study is to identify the incoming customers' needs and wants in Higher Education so as to improve the Universities'/Colleges' competitiveness. Specifically, the aim of this study is to determine the critical factors that parents of senior high school students and the senior high school students seek in private colleges and universities. From these, their inputs were translated into "technical requirements" that the private colleges and universities had been offering. Then, benchmarking of the different colleges and universities would follow in the study.

PROBLEM STATEMENT

This study sought to identify the top-ranked preference of the parents of senior high school students and the senior high school students in private colleges and universities.

Specifically, it attempted to answer the following questions:

1. What are the factors that influenced the preferences of Senior High School Students in choosing and seeking for admission to a private university?

➤ SCHOOL RELATED FACTORS

- Cost of Education (tuition fee)
- Facilities (building design)
- Technological Advancements (air conditioned room, laboratory room with internet access, audio-visual rooms, etc.)
- Achievement of the School (board exam passers, quiz bee champions, Third Party Accreditation)
- Quality of Instruction (Faculty members with masters degree)
- Curriculum (relevance of subjects being offered in the programs)
- Support Systems of the College/University (different student's organization such as, university choral, theater group, dance group, English and Math clubs, Youth for Christ)
- Scholarship and financial assistance offered by the College/University.
- Security and Safety
- Advertisement of the schools (career talk, brochure, leaflets, newspaper ads)

➤ STUDENT RELATED FACTORS

- Influenced by parents in choosing their course or college/university
 - Influenced by friends to join them to a particular college/university
 - Career choice (availability of the desired course in the university)
 - Income of Parents
 - Proximity to residence
2. What are the strengths and weaknesses, opportunities and threats of University X, Y, Z?

SIGNIFICANCE OF THE STUDY

Surveying the parents and the senior high school students provides information for improvement in the early stage of the educational requirement. This would help the administrators to identify and validate the critical factors that their incoming customers seek in private college/universities. The study would also be a great help to build harmonious relationship to the parents and administrators to have confidence that their desired expectations to the colleges/university would be met by the technical requirements of the colleges and universities. The study would also show the advantage of using Quality Function Deployment as a scientific approach in transforming the voice of the customer into a technical or company terminology, as a result, product or service improvement would emerged.

METHODOLOGY

This study used descriptive research employing correlation. It employed a scientific approach in evaluating the voice of the customer and transforming it to quantitative measures with the help of the Quality Function Deployment tool. The sources of data for the customer’s requirements come from the randomly selected senior high school students and their parents within Metro Manila. Another source of data was the technical requirements or the so-called college/university customers’ requirements. The study used survey questionnaires to identify the preferences of the respondents in choosing a college/university. The survey questions consisted of 21 items that were divided into 3 major categories, which represent their preferences in choosing and seeking for admission in a private college/university, these are:

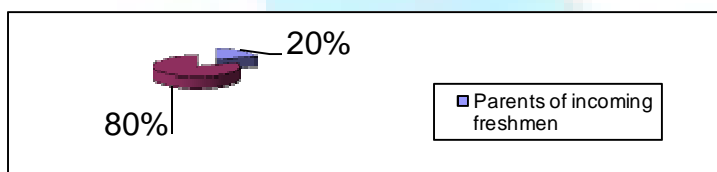
1. Respondent’s Personal Information (6 items)
2. School Related Factors (10 items)
3. Student Related Factors (5 items);

Descriptive statistics was used in this study such as the measurement of central tendency, variability and the correlation analysis.

RESULTS

PROFILE OF THE RESPONDENTS

FIGURE 1: PERCENTAGE DISTRIBUTION OF RESPONDENTS



Sixty respondents answered the 21-item survey questionnaire pertaining to the factors that influenced them to seek admission to a particular college/university. Twenty percent of the respondents were parents of incoming college freshmen and eighty percent were senior high school students in Metro Manila.

FIGURE 2: FACTORS THAT INFLUENCE THE PREFERENCES OF THE RESPONDENTS IN CHOOSING AND SEEKING FOR ADMISSION IN A PRIVATE COLLEGE/UNIVERSITY

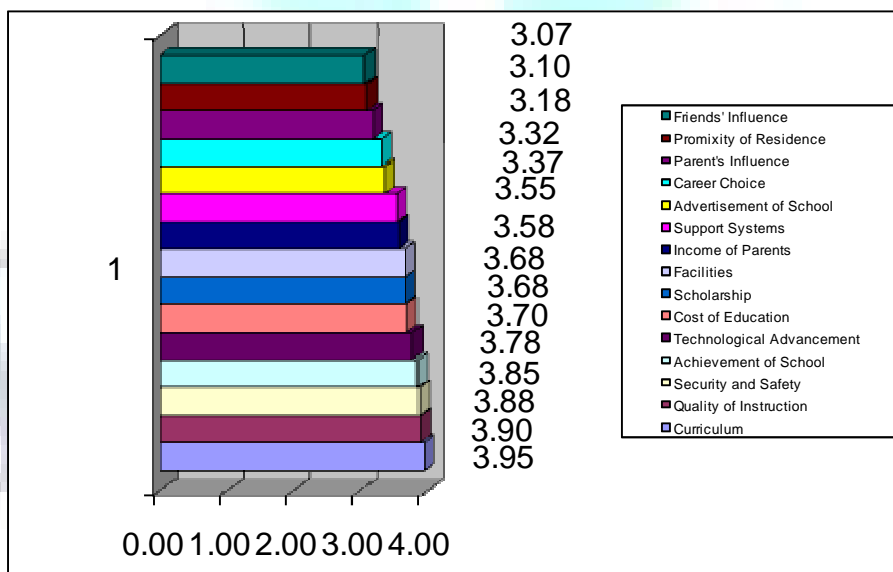


Figure above pertains to the factors that influenced the preference of the parents of the senior high school students and the senior high school students in seeking for admission in a college/university. It is presented in an increasing level of importance. Beside the graph are the mean values resulted in the respondents’ response in the survey questionnaire. It has only one main question stated as: “Does the following factors influenced your preferences in choosing and seeking for admission in a private college/university?”. The rating scale is from 1 to 4. Where value of 1 means Never, value of 2 means Seldom, value of 3 means Often and value of 4 means Always.

The proponent conducted test for significant difference to all the factors mentioned in the survey questionnaire. The results revealed that the top priority no.1 to no.6 namely: Curriculum, Quality of Instruction, Security and Safety, Achievement of School, Technological Advancement and Cost of Education do not have

significant difference among each other with 99% confidence level. Therefore, this means that these are the most influential factors in choosing and seeking for admission in a private university/college.

The needs of the incoming customers were then transferred to the "House of Quality" to further evaluate and assess the university/college in meeting the desired needs of the incoming customers.

CONSTRUCTION OF HOUSE OF QUALITY

There were several phases in constructing a House of Quality in order to capture the position of the organization in relation to the customers' needs and its competitors. In summary, the first step was to identify customers' wants, then it was translated to technical requirements, these are internal engineering restatements of the wants (Eureka, 1998). These became the specification for the overall product or service. Next was the establishment of the interrelationship of the technical requirements. The WHAT items (customer wants) from the House of Quality were mapped into the How items (technical requirements, therefore relationship was defined between them and the strength of relationship was identified through symbol, double circle represents a strong relationship, a circle depicts a moderate relationship and a triangle represents a weak relationship. Values of the technical requirements were determined. Then, construction of Competitive-Assessment was also present in the House of Quality located at the right side in order to depict its position in the market in relation to the performance of the other competitors. Lastly, importance rating was measured to assist in the prioritization and identify most critical factors in the organization.

FIRST STEP: HEARING THE VOICES OF THE CUSTOMERS - Incoming Students Needs (WHAT)

The voices of the customers, in this study are the incoming customers or the senior high school students. The 21-item survey questionnaire was given to them and the results are the top priority 1 to 6 criteria. These were then transferred to the left side of the House of Quality. This is also known as the WHAT of the House of Quality and is considered as the basic foundation of HOQ.

SECOND STEP: TRANSLATING THE NEEDS OF CUSTOMERS INTO TECHNICAL REQUIREMENTS - Measures for Incoming Customers' Needs (HOW)

These needs were then transformed into technical requirements, which were the measures of quality characteristics of the institution. It represents HOW the organization responded to each of the priority criteria stated in the incoming students needs. These were the items that are controlled by the institution to assure that customers' demands are met.

Given the needs of incoming students how to satisfy them were manifested by the following characteristics: Updated Course Syllabi, Faculty Qualification, Number of Course Preparation, Upgraded Institutional Facilities, Instructional Materials, Achievement of Students/Employee, Percentage Passer in Board Exams, Book Collection, Frequency of Incidents or Chaos, Financial Assistance Programs.

THIRD STEP: ESTABLISHING INTERRELATIONSHIP AMONG THE TECHNICAL REQUIREMENTS (HOW) - Interaction (Roof of the House)

It is also called Roof of the House. The entries of this part signify the interrelationship of the technical requirements or quality characteristics of the institution. The strength of the relationship among them was described with the aid of symbols. A double circle indicated a strong relationship; circle indicated a moderate relationship and a triangle indicated weak relationship. The identification of the interrelationship among the technical requirements was done by comprehensive analysis of the quality characteristics of the institution.

It reflected in the study that one of the quality characteristics of an institution is passing percentage in the board exam passer signified that it is interrelated to almost all of the technical requirements or quality characteristics of the institution. This means that a change for all technical requirements affected the outcome of the board exam passing percentage.

FOURTH STEP: ESTABLISHING RELATIONSHIP BETWEEN "WHAT" AND "HOW"

The body part of the House of Quality revealed the relationship of the incoming students' needs (WHAT) to the Quality Characteristics (HOW) of the Institution. The relationship is reflected in symbols. Double circle means a strong relationship of the variables involved; circle means a medium relationship of the variables involved and triangle means weak relationship.

For instance, highly developed curriculum had a strong relationship with updated course syllabi as depicted in figure 3. Moreover, updated course syllabi have a strong relationship with quality of instruction. Faculty qualification had a moderate relationship with the curriculum because the faculty is one of the sources in upgrading the curriculum in the department. Likewise, faculty qualification had a strong relationship with the quality of instruction in the institution. However, it had a moderate relationship with the achievement of the school since there are still other factors that influence the achievement of the school such as the support of the rest of the institution's community. Percentage of Board exam passer has a moderate relationship with the curriculum, had a strong relationship with the quality of instruction and achievement of the school. Further, it had a weak relationship with the technological advancement of the institution because technology itself cannot teach the students but in the presence of these, it required to have a qualified faculty and a right attitude of the students.

FIFTH STEP: IDENTIFICATION OF THE VALUE OF THE TECHNICAL REQUIREMENTS (HOW) - Criticality

The value of the technical requirements of the institution was based on the current specifications of each technical requirement. For example, the updated course syllabi requirements of the institution should be done every semester. The institution's current state in hiring qualified faculty is at least with units in masters' degree or better yet a graduate of master's degree. As for the number of course preparation for each faculty, at present the average is six preparations.

SIXTH STEP: DEVELOP COMPETITIVE ASSESSMENT GRAPHS - Current Customers' Rating

Considering the resulted six criteria in choosing and seeking for admission in private university/college a customer satisfaction rating was developed. The respondents were the thirty-four (34) randomly selected current students of the institution. The customer satisfaction survey was used in evaluating the institution performance based on the set criteria of the incoming customers. The results were then graphed at the right side of the House of Quality. Benchmarking with the competitors was then applied. Two respondents from each competitor were asked to fill up the same customer satisfaction survey in their institution. The respondents were selected in the basis of the criteria that they have at least three years residency in their institution. The result was then plotted and graphed at the right side of the House of Quality.

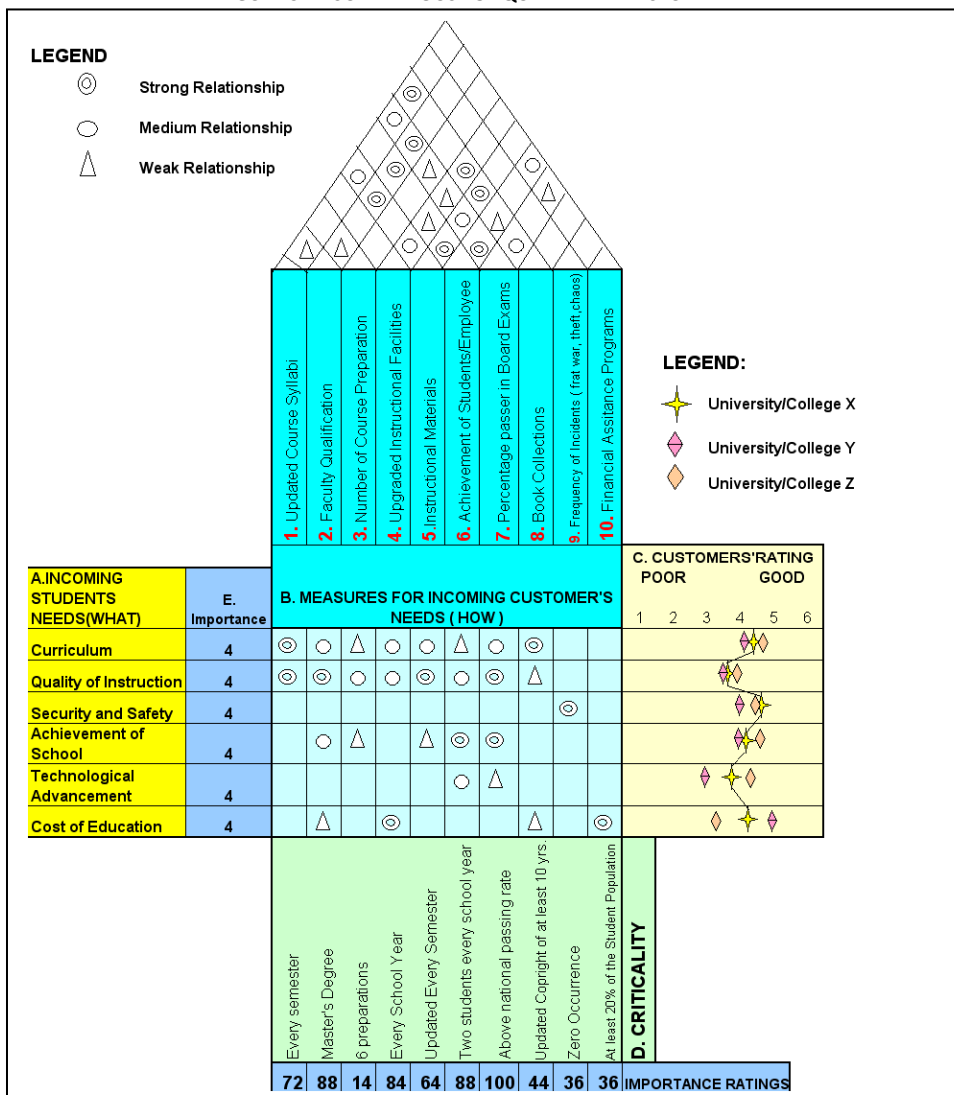
There were three symbols present on the right side of the HOQ. The star symbol with color of yellow is the performance of University/College X based on the feedback of their current students. The other symbol pertains to the level of performance of the competitors, which was also based on the feedback of their current students.

SEVENTH STEP: SET IMPORTANCE RATINGS

The bottom side of the house of quality reflects the importance ratings of the quality characteristics based on their relationship to the desired needs of incoming students. This would help the institution to identify their priority in relation to the needs and wants of the incoming customers. Relationship symbols of double circle had a value of 9, circle symbol had a value of 6 and triangle had a value of 1. Importance ratings were calculated from the summation of the value of relationship symbol multiplied by the value of the rank of importance of the "what" (Incoming customers' needs) criteria. For instance, the value of 72 came from the strong relationship of the Curriculum to the Updated Course Syllabi plus the strong relationship of Quality of Instruction to the Updated Course Syllabi. Thus, the Curriculum strong relationship value of 9 multiplied by 4 which is the rank value of the Updated Course Syllabi plus the Curriculum strong relationship value of 9 multiplied by 4 which is the rank value of the Quality of Instruction. In other words the importance rating came from the summation of the product of equivalent value of relationship times the rank value of the What of HOQ. The rank value for all the What of HOQ is the same because it was previously tested that there was no significant difference between them, hence their priority rank is the same and the rank value is four.

It is noted therefore that the passing percentage of board exam had the highest importance rating with a value of 100. This factor is a critical quality characteristic that highly affected the decision of the incoming students to seek enrolment or admission to the desired university/college. It was followed by achievement of school and faculty qualifications. The House of Quality revealed that the competitive advantage of University/College X to its competitors is the cost of education.

FIGURE 3: RESULTED HOUSE OF QUALITY IN THE STUDY



DISCUSSION

With the above-mentioned result the following are the suggested service development to meet the perceived needs of the incoming customers:

1. Evaluation of all board exam subjects for all courses with board examinations. Currently, evaluation for the University/College X was done randomly in different subjects of a particular faculty member.
2. Although multi-tasking is important, faculty member might be specialized in one or two board exam subjects so faculty member continue to get better, thus achieved expertise in the subject area. For example, Engineering Economy subject is a board exam subject for all engineering courses; one faculty could be tapped to teach these subjects to all engineering courses. On the average, there are five to six engineering economy sections; hence there is only one preparation of faculty of the 18 units that he handled. This would enable the faculty to have adequate time in exploring the subject and have ample time to prepare a good teaching methodology for the subject matter.
3. Organize board exam circle for every course that requires board exam. This is usually composed of the graduating class. Although there is an existing organization for all courses, however it caters to all year level. This one is exclusively for graduating students who will take the board examinations. Just like any other organization, the activities to be done are for the preparation for the upcoming board examination, preparing them physically, mentally and spiritually. This organization will facilitate the sharing of notes and other relevant information about board exams. In effect, they are empowering themselves. There will be elected president, vice president and secretary and adviser for each course that requires board examination.
4. Encourage students to create and implement student's achievement plan. The concept of this achievement plan is to have each and every student take responsibility for his or her own path and assemble a plan of action for success.

SUMMARY OF THE FINDINGS

The study reflected that 48.3% of the respondents' desired courses are offered in the institution. Moreover, 46.7 % of the respondents' do not have a target college/university after graduation from secondary schools. 31.7 % of the respondents' parents have a salary range of 20 thousand pesos and above per month, however, 68.3% of the respondents' parents have a salary range of less than 20 thousand pesos per month.

The study also resulted in six top most criteria in seeking for admission in a university, these are: Highly Developed Curriculum, Quality of Instruction, Security and Safety, Achievement of School, Technological Advancement, Cost of Education. The House of Quality revealed that the percentage passer in board examination is the most critical factors in translating the desirable criteria of the respondents in choosing a university/college. It was followed by the faculty qualification tied with the achievement of the students. The third critical factor is upgraded instructional facilities. On the other hand, competitive advantage of the University/College X was revealed where the cost of education is its current strength.

CONCLUSIONS

Using Quality Function Deployment technique particularly one of its tool, the House of Quality (HOQ), it enable to capture the whole picture of the organization relative to the needs of its customers and its strengths and weaknesses to its competitors. Hence, there is a greater likelihood of meeting the needs of the incoming and current customer and eventually closing the gap. Moreover, identifying the most critical area and set priority to it is a must to avoid an exponential

effect to the institution. These tools helped the institution to evaluate whether the current strategy and action plan are going to the right direction in meeting the needs of the customers.

RECOMMENDATION

The proponent recommends to further validate the target value of each quality characteristics and its future value so that institution will continue to have competitive advantage over the other competitors. Further study is also recommended on the technical requirements of the customers' needs. Lastly, further study is also recommended on identifying the main driver of the most critical factors.

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CULTURAL APTITUDE & ADJUSTMENT - THE IMPACT OF THE EXPECTED TENURE OF A CROSS CULTURAL PROJECT

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ABSTRACT

This research investigates the impact of the anticipated tenure of an international assignment on the relationship between Cultural Intelligence and adaptation measures. A proposed model expands already existent models concerning the relationship of the facets of Cultural Intelligence (cognitive, met cognitive, motivational, and behavioral CQ) and the dimensions of cross-cultural adjustment (interaction, general, and work adjustment) with measures for the willingness to adjust and the pre-determined tenure of an assignment. Questionnaires have been sent to 49 international students and expatriates in 22 countries. Results offer further support for the Cultural Intelligence Scale (CQS) while highlighting inconsistencies with prior researches. The most crucial results are the support of motivational CQ as a significant predictor for general adjustment and meta-cognitive CQ as significant predictor of general adjustment. Furthermore, the pre-determined tenure of an assignment moderates the impact of motivational CQ on general adjustment. Willingness to adjust is neither related to any of the CQ facets, nor to pre-determined tenure. However, it is significantly predicted by CQ in general terms.

KEYWORDS

CQ Cultural Intelligence Country National Arithmetic Mean Multi-National Company Standard Deviation Standard Error.

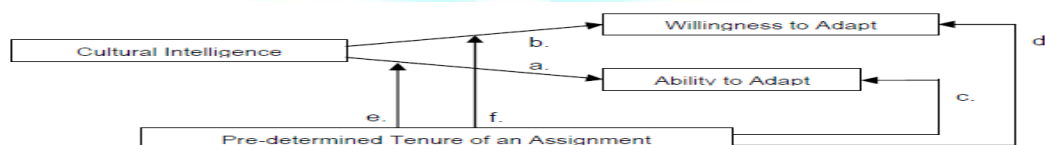
INTRODUCTION

Attitudes of respect for other nations' talents and traditions, of fascination with the variety of other worlds, of readiness to revise one's own prejudices, and of adjustment to local tasks and circumstances – these are the elements of the basic formula for success in an MNC. This first research deals with the introduction into existing literature, the problem statement and research questions, the purpose of the study and the structure of the following research.

PROBLEM STATEMENT AND RESEARCH QUESTIONS

This paper addresses the linkages of Cultural Intelligence, cross-cultural adaptation and tenure to each other. Following the existing literature, a relationship between CQ and the ability to adapt is present at least for some of the different CQ facets. In this research also other variables are taken into consideration which, on the one hand, might also be influenced by CQ and, on the other hand, might influence the expatriate's adaptation and the relationship between CQ and adaptability. Assuming that an expatriate has a certain level of Cultural Intelligence, it is expected that he/she is more able to adapt and also more willing to adapt due to the advantages CQ gives him/her in a cross-cultural context. The research questions which underlie this model are: What impact does the pre-determined length of an assignment have both on the expatriate's different dimensions of adaptability (general, work and relationship) and on the willingness to adjust to the culture of the host country? Furthermore, does the pre-determined assignment tenure moderate the relationship between the different dimensions of cultural intelligence and these above mentioned aspects of adaptation?

FIGURE I. SIMPLIFIED RESEARCH MODEL



The extended models in which the single relationships between the different dimensions of the variables are illustrated in detail (which at the same time represent the hypotheses) are shown below (see Figure III and IV). In order to approach the research questions, they are further broken down into several sub-questions, which later represent the hypotheses of this research. Several direct and moderating relationships between these four main variables are proposed.

- A. To what extent are the four facets of CQ related to the different types of adjustment?
- B. b. To what extent are the four facets of CQ related to the willingness to adapt.
- C. c. Is the tenure of an assignment directly related to the different types of adaptability?
- D. d. Is the tenure of an assignment directly related to the willingness to adapt?
- E. e. Does the tenure of an expatriate's assignment moderate the relationship between the different dimensions of Cultural Intelligence and the different dimensions of adaptability?
- F. f. Does the tenure of an expatriate's assignment moderate the relationship between the different dimensions of Cultural Intelligence and the willingness to adapt?

As already mentioned in the introduction, the four facets of CQ are cognitive, meta-cognitive, behavioral, and motivational CQ. The ability to adapt will be split up in the three dimensions called interaction, general and work adjustment.

CULTURAL INTELLIGENCE

The question of measuring abilities, knowledge and capabilities has led to increasing recognition of the importance of different intelligence constructs like interpersonal intelligence, emotional intelligence, and social intelligence, which each measures certain kinds of intelligences in a quotient (e.g., EQ or SQ) (Ang et al., 2007). By focusing on specific capabilities that are important for high quality personal relationships and effectiveness in culturally diverse settings, CQ complements IQ (cognitive intelligence). Gardner (1999), as one author who focuses on the differentiation between different types of intelligence, summarizes ten different intelligences in the multiple intelligence theory.

Hypo research 1: Cultural Intelligence is positively related to cross-cultural adjustment. Assuming that, irrespective of the awareness of his/her level of Cultural Intelligence, the high CQ expatriate is more willing to adapt to a foreign culture than a low CQ expatriate. CQ describes the capability to adapt effectively to new cultural contexts, thus it means that the interest in and consideration of adaptation increases with a decrease of effort which has to be taken. As an expatriate is more capable for instance in seeing differences in cultures, in knowing how to work with HCNs, or more interested in foreign cultures, he/she might be more willing to adapt.

Hyporesearch 2: Cultural Intelligence is positively related to willingness to adapt.

However, due to being a rather new approach, studies about CQ and its relations to other influences on the ability to adjust to a foreign culture are still sparse. Recent research has focused on relationships of single variables within the concept of CQ and the antecedents of CQ (e.g., Templer et al., 2006; Ang et al., 2006; Ang et al., 2007). Ang et al. (2007) deliver the broadest insight into the relationships of CQ to other variables. They come to the conclusion that CQ predicts cultural judgment, decision-making, and task performance. More important, CQ increases one's understanding of these performance outcomes over and above demographic characteristics, general cognitive ability, emotional intelligence, and openness to experience. In other words, even after accounting for the effects of these other predictors, CQ further increases one's ability to predict and understand decision-making performance.

Hyporesearch 1a: Motivational CQ is positively related to general, work, and interaction adjustment.

Those who are interested in experiencing other cultures and feel confident that they can interact with people who have different cultural backgrounds might be more willing to adjust in culturally diverse situations. Without the interest in a foreign culture and the interaction with the host nationals it is less likely that one is taking the effort of adaptation. Motivation already describes a certain kind of willingness to do something. Therefore, the hyporesearch is:

Hyporesearch 2a: Motivational CQ is positively related to the willingness to adapt.

It has also already been mentioned that the behavioral facet is positively related to all three dimensions of adaptation (Ang et al., 2007). Fulfilling the requirement of having the capability to adapt to verbal and nonverbal behaviors, which are appropriate for different cultures, a person is more able to adapt. Selmer (2006b) supports that language ability as one part of the behavioral dimension is positively related to the three dimensions of cultural adaptation. If a person does not have this repertoire of capabilities a high CQ gives him/her the ability to acquire such behaviors (Earley and Ang, 2003). The matter of having the knowledge and knowing how to work with it gives a person the possibility to adapt regardless to the general work, or relationship level of adjustment.

Hyporesearch 1b: Behavioral CQ is positively related to general, work, and relationship adjustment.

Knowing how to conduct yourself in culturally diverse setting, being able to speak foreign languages, and to express oneself non-verbally in line with the host culture standards, makes it easier for people to adapt to a foreign culture. Therefore, a person who already possesses these capabilities is more willing to adapt because it implies less effort than for someone who must learn this particular knowledge in order to be able to adapt.

Hyporesearch 2b: Behavioral CQ is positively related to the willingness to adapt. Just as personality traits like openness, agreeableness, and extroversion have been found to be directly related to the different facets of cultural adaptation (Huang, Chi and Lawler, 2005), their association with CQ has been tested as well. Ang et al. (2006) have found by relating the Big Five personality traits to CQ that especially openness to experience is a crucial personality factor. It is significantly related to a person's capability to function effectively when interacting with those who have different cultural backgrounds. Results demonstrated the discriminant validity of the four CQ factors compared to the Big Five personality factors. The individual traits are related too differently to the facets of CQ. Conscientiousness is positively related to meta-cognitive CQ, high agreeableness is positively related to behavioral CQ, emotional stability is negatively related to behavioral CQ, and extraversion is positively related to cognitive CQ, motivational CQ, and behavioral CQ. Only openness to experience (which is characterized by curiosity, broad-mindedness, and imagination) is related to all four facets of CQ (Ang et al., 2006).

Hyporesearch 1c: Cognitive CQ is positively related to general, work, and interaction adjustment.

Cognitive CQ determines how a person makes sense of inter-cultural experiences and reflects the processes individuals use to acquire and understand cultural knowledge. Assuming that a person is more willing to adapt to something he/she not only knows but also understands, the facet of CQ is proposed to be positively related to an expatriate's willingness to adapt. It gives the expatriate the ability to rethink his/her own culturally determined behaviors and helps to realize the appropriateness of adaptation.

Hyporesearch 2c: Cognitive CQ is positively related to the willingness to adapt.

Differences and similarities between the country of origin and the country of stay can be described as cultural novelty (Selmer, 2006a). Research shows that this variable has no association to adjustment variables. Consequently, expatriates adjust to a foreign location with a low cultural novelty as easily or as difficult as to one with a high cultural one (Selmer, 2006a). Nevertheless, an important prerequisite for being able to adapt is not the existence but an individual's awareness of similarities and differences between cultures. The meta-cognitive facet describes this understanding and includes knowledge about all basic concepts of a foreign culture as values, norms and rights (Earley and Ang, 2003).

Hyporesearch 1d: Meta-cognitive CQ is positively related to general, work, and interaction adjustment. Being aware of the cultural differences or similarities might be positive in order to be able to adapt. However, the question of its impact on one's willingness to adapt is different. As it has already been mentioned, Selmer (2006a) states that differences and similarities between the country of origin and the country of stay have no impact on adjustment variables. Nevertheless, the meta-cognitive facet of CQ focuses on the expatriate's consciousness about cultural diversity and not its actual existence. Following Selmer's (2006a) initial proposition of cultural novelty being negatively related to adjustment, he also assumes that the effort which has to be taken in order to adapt is higher the bigger the cultural novelty.

Hyporesearch 2d: Meta-cognitive CQ is negatively related to the willingness to adapt.

Expatriate research deals with the impact of this factor in various ways. But looking at the existing literature which deals with the tenure of an assignment, it becomes clear that the understanding of what this factor actually implies is diverse. Many researches focus on the current assignment tenure defined by the actual time spend in a foreign country and by the time of the empirical elicitation (e.g., Takeuchi et al., 2005; Taveggia et al., 2001). Others consider the time that has been spent abroad in general also considering prior international assignments (e.g., Tung, 1998).

Following these results, the proposed influence of the pre-determined tenure of an assignment is similar. As expatriates already know that they will stay only for a short period, they might presume that it is not necessary or even impossible to adapt properly. This goes in line with the previous hypo research and the relation of tenure and adaptability. Since adaptation is considered to be an effort which has to be taken, the consciousness of having only a short period of time to do so might make the expatriate resist to adapt. The effort which has to be taken is too big in order to remunerate. Since it is controlled for the impact of current assignment tenure, the hypo research is as follows:

Hyporesearch 4: The pre-determined tenure of an assignment has a positive effect on the expatriate's willingness to adapt to the host culture. Assuming that expatriates hold a certain level of cultural intelligence, they are more willing and more able to adapt to the culture of their host country than people who do not hold CQ (or only at a low level). Nevertheless, the question arises whether this relationship is influenced by the set tenure of an assignment. Is an expatriate who knows that his assignment is only of a short duration willing and able to use his CQ to adapt effectively?

Hyporesearch 5a: The pre-determined tenure of an assignment and the expatriate's knowledge about this tenure has a moderating effect on the relationship between the expatriate's CQ and his willingness to adapt to the host culture.

Hyporesearch 5b: The pre-determined tenure of an assignment and the expatriate's knowledge about this tenure has a moderating effect on the relationship between the expatriate's CQ and his ability to adapt to the host culture. These hypotheses based on the literature discussed in this and the previous sections of this research are summarized in the research model.

RESEARCH MODEL

This model, moreover, depicts the proposed moderating effect of the pre-determined tenure of an assignment on the relationship between the facets of CQ and the willingness to adapt (see Figure IV).

FIGURE III. DETAILED RESEARCH MODEL – ABILITY TO ADAPT

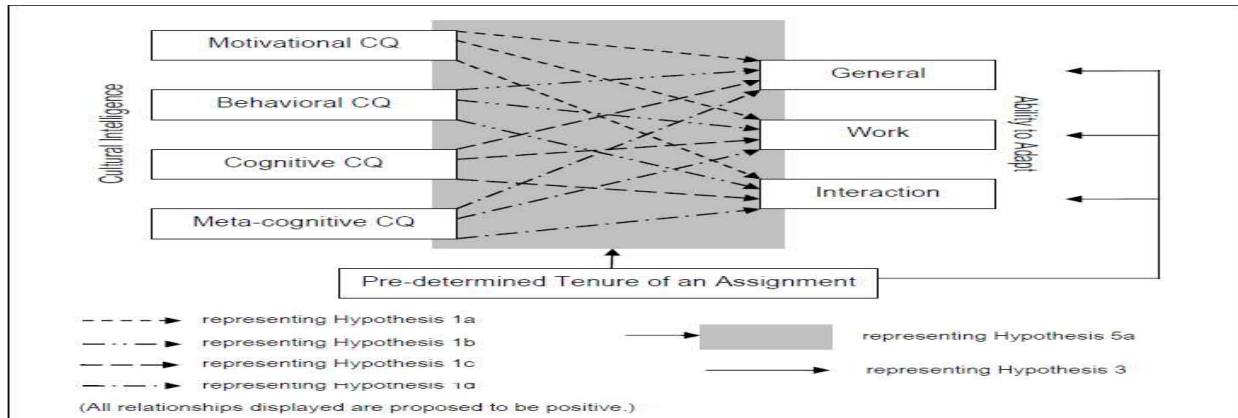
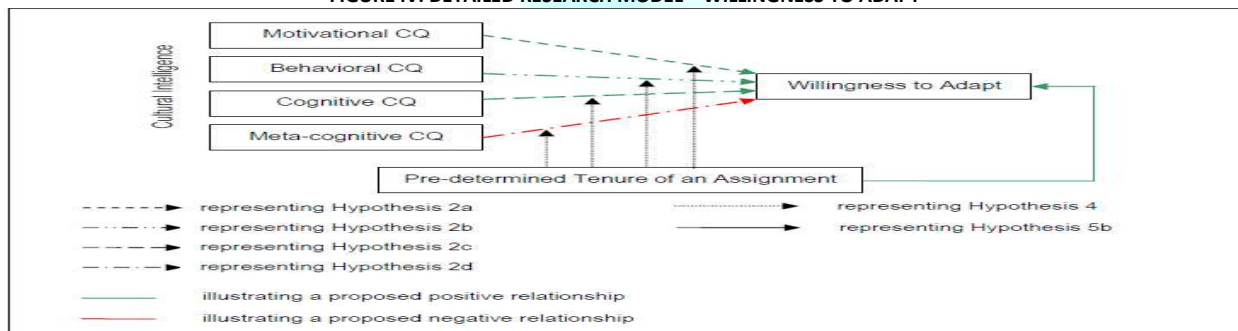


FIGURE IV. DETAILED RESEARCH MODEL – WILLINGNESS TO ADAPT



DISCUSSION OF RESULTS

In the following the results of the multiple regression analyses are related to the hyporesearch. Underlying the research model of this research and discussed with regard to prior research on this topic. The regression input per hyporesearch can be found in Appendix D. Regression results for the dependent variables interaction, general and work adjustment, willingness to adjust, and adjustment and willingness in general terms are shown in Appendix E (a, b and c, d, and e respectively). \ Hyporesearch 1: Cultural Intelligence is positively related to cross-cultural adjustment. The results in Table e (Appendix E) support this hyporesearch. Overall Cultural Intelligence has a significant a positive effect on overall cross-cultural adjustment, $\beta = .63, p < .001$. These results imply that the higher the level of an expatriate’s CQ, the more able he/she is to adapt to a foreign culture regardless of the differing impact of the four facets of CQ, and the three dimensions of adaptability. YR^2 of Cultural Intelligence in general terms indicates that CQ explains about 33% percent of the variance in adaptability.

Hyporesearch 1a: Motivational CQ is positively related to general, work and interaction adjustment. This hyporesearch can partly be supported by the results of regression analysis. Although bivariate correlation results support the assumed relationship and indicate that motivational CQ and interaction, general, and work adjustment are positively related ($r = .53, .62, \text{ and } .42, p < .05$), the strength of a relationship can only be significantly predicted for interaction adjustment, $\beta = .38, p < .05$, and general adjustment, $\beta = .45, p < .005$ over and above other predictors. These results show that motivational CQ predicts interaction and general adjustment significantly and positively, i.e. people with a high level of motivational CQ adapt more easily to interacting with host country nationals and to the general environment. In prior researches motivational CQ was related also to work adjustment (Templer et al., 2006). In this research a positive direction can be assumed ($\beta = .16$), however, this result is with $p = .29$ relatively far from significant. Further, prior support for behavioral CQ as predictor for adjustment (Ang et al.2007) cannot be repeated in this study.

Hyporesearch 1b: Behavioral CQ is positively related to general, work and interaction adjustment. Despite prior support from other researches (Ang et al., 2007; Selmer, 2006b), this hyporesearch is rejected for this sample. Higher levels of behavioral CQ do not explain higher levels of general, work, and adjustment. Nevertheless, the strength of the bivariate correlations support prior research results on this relationships ($r = .37, .38 \text{ and } .43$ respectively, $p < 0.01$).

Hyporesearch 1c: Cognitive CQ is positively related to general, work and interaction adjustment. Relating cognitive CQ to a persons’ skills and level of intelligence, it was proposed that the higher the level of cognitive CQ, the high the ability to adapt to the general, work and interaction environment in a foreign country. This hyporesearch is rejected for this sample. On the one hand, no significant relationships were obtained; on the other hand, in contrast to correlation results, regression results even indicate a possible small negative impact of cognitive CQ on interaction and work adjustment.

Hyporesearch 1d: Meta-cognitive CQ is positively related to general, work and interaction adjustment. This hyporesearch can partly be accepted. Regression results support that higher levels of meta-cognitive CQ predict higher levels of work adjustment ($\beta = .53, p < .005$). The relationship to the other two adjustment dimensions must be rejected due to the lack of significance. Interestingly, cultural distance is also a significant predictor of work adjustment ($\beta = .30, p < .05$). Although during literature review an impact of cultural novelty or distance could not always be supported, the knowledge of these differences and consequently meta-cognitive CQ was assumed to have an impact on adjustment. Concerning this sample, cultural distance and meta-cognitive CQ are significant and positive predictors of work adjustment.

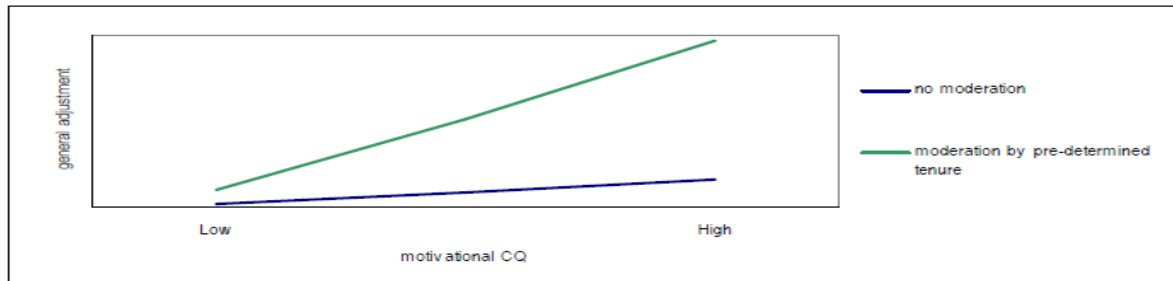
Hyporesearch 2: Cultural Intelligence is positively related to willingness to adapt. Based on the results in illustrated in Table e (Appendix E), CQ in general terms predicts the willingness to adjust in a positive way ($\beta = .41, p < .01$). This indicates that high levels of CQ explain higher levels of the willingness to adjust. Supporting this conclusion is the strength of the bivariate correlation between the single CQ facets and willingness to adapt, cognitive CQ $r = .43, p < .01$, motivational CQ $r = .32, p < .05$, behavioral CQ $r = .38, p < .01$, and meta-cognitive CQ $r = .37, p < .01$. Hyporesearch 2a-d: The facets motivational, behavioral, and cognitive CQ are positively and meta- cognitive CQ is negatively related to the willingness to adapt. These four hypotheses have to be rejected due to the lack of significance. Although Cultural Intelligence in general does predict the willingness to adjust (see Hyporesearch 2), the individual facets fail to pass the significance level. Further, while not significant, the proposed positive direction of the first three facets can be found in the regression results. The proposed negative relationship of meta-cognitive CQ and willingness to adjust is not reflected by the results.

Hyporesearch 3 and 4: The pre-determined tenure of an assignment has a positive effect on the expatriate’s ability to adapt generally, to work and relationships in the host culture and on the willingness to adapt to the host culture. These two hypotheses predicting that the anticipated tenure of an assignment has a positive influence on the adjustment dimensions and the willingness have to be rejected. Both correlation and regression analyses do not support the proposed relationship. Correlation coefficients are, though positive, with $r = .05-.16$ relatively low and not significant. The same applies to individual regression analyses (β

= .20-.24, p = .11-.26). Consequently, it can be concluded that the tenure of an assignment, which is known before the start of the assignment, does not influence whether expatriates are more willing to adapt. Consequently, prior researchers (Bhaskar-Shirinivas et al, 2005; Takeuchi et al., 1997) who found a positive relationship cannot be supported.

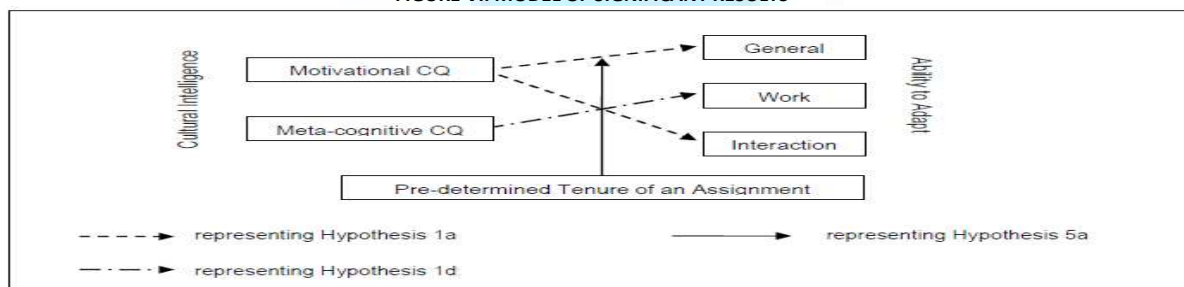
Hyporesearch 5a: The pre-determined tenure of an assignment and the expatriate’s knowledge about this tenure has a moderating effect on the relationship between the expatriate’s CQ and his/her ability to adapt to the host culture. Regression results indicate that only the relationship between motivational CQ and general adjustment, which has been pointed out to be significant earlier, is moderated by the predetermined tenure of an assignment. The strength of this relationship increases significantly with the influence of pre-determined tenure and changes from $[\beta = -.45, p < .005$ to $\beta = 2.76$. Based on these results it can be concluded that an expatriate who holds a particular level of motivational CQ is more able to adapt to the general environment in case of the knowledge of a longer tenure of an assignment. The relationship is graphically illustrated in Figure V.

FIGURE V. INTERACTION PLOT FOR MODERATING EFFECT OF PRE-DETERMINED TENURE ON GENERAL ADJUSTMENT



Hyporesearch 5b: The pre-determined tenure of an assignment and the expatriate’s knowledge about this tenure has a moderating effect on the relationship between the expatriate’s CQ and his/her willingness to adapt to the host culture. The proposed relationships and the consequent assumption that expatriates with a particular level of CQ are more willing to adjust to the host country culture the higher the tenure of the expatriate assignment is cannot be supported. Neither the individual relationships are significantly related to willingness to adjust nor do the total models with all included variables obtain significant results for F statistics. This indicated that the independent variables (CQ facets, moderated CQ facets, and pre-determined tenure) do not explain the variation in the dependent variable (willingness to adjust).

FIGURE VI. MODEL OF SIGNIFICANT RESULTS



A reason for the low significant results in the regression analysis, in particular of the relationships which have been shown to be existent in prior research, can be the low number of participants. Another reason could be multicollinearity of the independent variables, the CQ facets. However, it is striking that Ang et al. (2007), who worked extensively with the concept of CQ did not come across this problem. They mention moderate inter-correlation of the CQ facets but do not mention further related problems. These results give rise to the discussion of practical implications, limitations and suggestions for further research. These are stated in the following paper along with final conclusions.

CONCLUSION

This research has resulted in many interesting findings, which partly support already existing literature and point towards new perception of examined relationships. This paper includes a summary of the research and final concluding thoughts. Further, practical implications of the results are discussed. Finally, this research closes with a section with the elaboration of the limitations and consequential suggestions for further research.

This research has tried to find answers to the several questions. Firstly, this investigated how far the different facets of Cultural Intelligence explain the variance in cross-cultural adaptation in order to either support or reject results of prior research concerning this topic. Secondly, it tried to answer the question whether these four facets of CQ also have an influence on an expatriate’s willingness to adapt. The assumption was made that high levels of CQ increase the willingness to adjust as CQ was opted to facilitate adjustment. Thirdly, this research has focused on the question whether the contractually set duration has any influence on the expatriates’ willingness and ability to adjust to the host country. It was proposed that expatriates are not willing to adjust the shorter their assignment, since the expected outcome does not remunerate for the effort adjustment entails. Moreover, although expatriates comply with the requirements for successful adaptation, it was expected that the shorter the tenure the lower the actual ability to adjust to a foreign culture. Based on the literature, a model which illustrated several hypotheses was constructed. The theoretical background and prior researches concerning consequences of Cultural Intelligence, antecedents of cultural adjustment and willingness to adjust as well as the impact of tenure was considered in detail to design the model and back the direction of the hypotheses. From practitioners’ and theorists’ point of view the importance cultural awareness and consequently Cultural Intelligence increases steadily with the growing internationalization of companies and businesses in general. This research, however, only partly supported proposed relationships and results were partly different from prior research. Only motivational and meta-cognitive CQ were detected to be predictors of general and work adjustment respectively. Moreover, CQ in all its individual facets does not predict the willingness to adjust. However, a high level in the total CQ scale has a significant impact on an expatriate’s willingness to adjust. Furthermore, the pre-determined tenure does not relate to any of the adjustment measures, neither ability nor willingness to adjust. A final interesting finding is that pre-determined tenure moderates the impact of motivational CQ on general adjustment. This indicates that the extent of interest and drive to adapt to cultural surroundings increases with the knowledge about a certain tenure of the assignment. The longer the duration of the international assignment the higher is the consequent general adjustment. Since cultural adjustment is a crucial predictor for assignment success, the question arises whether short assignments can be considered less successful as the expatriates adjust less to the host culture. Yet, success measures were not included in this research, thus this question could be an interesting approach for further investigation.

Since the results show that the contractually set tenure of an assignment positively moderates the impact of motivational CQ on general adjustment, it offers implications for the development and schedule of an expatriate’s assignment. Although the pre-determined tenure does not affect adjustment directly, general adjustment of expatriates can be fostered by contractually setting a longer tenure. Consequently, in case of facing the consideration of setting a short tenure with the option of an extension of the assignment or setting a longer period right away, the latter option offers to be the more prosperous one resulting in a

higher level of expatriate adjustment. Another implication can be directed towards the expatriates' preparation for international assignments via cross-cultural training. Since the results point out the particular importance of meta-cognitive and motivational CQ for cultural adjustment, the approach of Earley and Peterson (2004) can be supported. These authors highlight training methods which concentrate on meta-cognitive, motivational, and behavioral facets of CQ. Consequently, training programs could include modules of both facets, which are significantly related to adjustment in this research. Possible training interventions are cognitive structure analysis for examining knowledge structures and enhancing the awareness and reflection (for meta-cognitive CQ), and methods focusing on the values-orientation to develop empathy to the culture and role-plays to increase self-efficacy and confidence, and foster curiosity in cross-cultural settings (for motivational CQ) (Earley and Peterson, 2004).

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REPORTING ENVIRONMENTAL ISSUES AND INFORMATION DISCLOSURES IN FINANCIAL STATEMENTS**DR. TAIWO ASAOLU****PROFESSOR****DEPARTMENT OF MANAGEMENT AND ACCOUNTING****OBAFEMI AWOLOWO UNIVERSITY****ILE-IFE, NIGERIA****DR. JOHN A. ENAHORO****SR. LECTURER****DEPARTMENT OF ACCOUNTING****BABCOCK UNIVERSITY****ILISHAN-REMO, NIGERIA****ABSTRACT**

Corporate neglect and avoidance of environmental costing have left of financial incompleteness and absence of fair view of financial information reporting to users of financial statements, environmental regulatory agencies and the general public. Environmental reporting in accounting and in accounting information disclosure is crucial to the general public and today's management decision process. This study reviewed some environmental concepts. Specifically, the study assessed the level of independence of tracking of costs impacting on the environment; level of efficiency and appropriateness of environmental costs and disclosure reporting. The research instrument for the study was secondary data. For this purpose, both cross-sectional content analyses (within and across sector companies) and longitudinal (ten-year annual report and financial statements) content analyses were carried out. Findings are that environmental operating expenditures are not charged independently of other expenditures. There is also, absence of costing system for tracking of externality costs. Environmental accounting disclosure does not however, take the same pattern among listed companies in Nigeria.

KEYWORDS

Environmental Quality Reporting; Environmental Cost Accounting; Environmental Detection, Prevention and Failure Costs; Environmental Audit; and Externality Environmental Costs.

BACKGROUND

Corporate organizations are engaging more actively in environmental disclosure in their annual financial statements. This is peculiar with more financially successful companies in both the United States and the United Kingdom. In the United States of America, SEC regulations and accounting standards require American companies to disclose environmental information in annual reports (Soonawalla:2006 and IFAC: 2005). An International Public Accounting firm, KPMG, in 1999 (Gernon and Meek 2001:98), and Aert, Cormier and Magnam (2006:303) report from the KPMG's survey in 1996 that 'since 1993 the percentage of 100 companies in 12 leading industrial nations that mention the environment in annual reports have almost doubled to 69%'. Also, that '23% now produce separate environmental reports compared to 13% in 1993'.

This study draws from the study of Campbell, Craven and Shrivs (2003), who captured voluntary social disclosure over a longitudinal period in excess of 20 years (1975 – 1997) in three companies, the tobacco, brewing and retailing in the U.K. Measurable variables for Environmental Quality Model (EQR) were explored through both primary and secondary data. EQR is expressed in two models 1 and 2 as shown in this study.

In the light of the background of increasing environmental attention, and that the oil and gas sector, the mineral extractive and indeed the manufacturing sectors have profound production impact on the environment, the study intends to explore an assessment of environmental accounting in these economic sectors in Nigeria. This is expected to facilitate effective and efficient costs measurement and reporting for corporate decision making.

The approach in this discus is subdivided into five parts: the first part constitutes the background to the study and the issue of environmental information; second part is the Review of literature theory, the third is the study methodology, the fourth is the discussions and findings and lastly the fifth constitutes policy recommendations and study conclusions

THE ISSUE OF ENVIRONMENTAL INFORMATION

Canada, Norway, The Netherlands, the United Kingdom and the United States of America have led in the pursuit of degradation and pollution prevention, control and the need for environmental safety (Skillius and Wennberg: 1998:54-59; IFAC: 2005:9). Leading developing nations are Zimbabwe, Namibia, The Philippines and Indonesia. They have led in championing policies to address need for accounting and accountability for environmental costs. The need for corporate organizations to develop environmental cost responsiveness and to disclose in annual financial reports environmental information has become of great importance.

The statement of the problem is that conventional approaches of cost accounting have become inadequate since conventional accounting practices have ignored important environmental costs and activities impacting consequences on the environment. Corporate neglect and avoidance of environmental costing leave gap in financial information reporting. There is no completeness and correctness of fair view to users of financial information, such as shareholders, environmental regulatory agencies, environmentalists and potential financial investors. For example, degradation or other negative impact on the environment could affect corporate financial statement such as create actual or contingent liabilities and may have adverse impact on asset values. Consequential effect on corporate organizations may result in incurring future capital expenditure and cash flows which may impinge on going concern as balance sheet secured loans may not be secure after all if land values for instance are affected by environmental factors. The limited awareness of environmental costing principles and methodology has is an important issue to be addressed. If vital environmental issues and activities are not disclosed, financial statement cannot be said to reveal state of a 'true and fair view of affairs'. It is important too, to note that ethical investors will only invest in ethical companies and therefore, will watch out for these ethically responsible companies. Ethical companies therefore, have marketing advantage if they strategically position themselves environmentally. Ethical companies stand at advantage for corporate financing. The challenge of cost and valuation for damage, depletion and degradation of the environment externalities is a critical problem which continues to demand attention.

Since current requirement for reporting on environmental issues is voluntary, it is observed from most financial statements of corporate organizations that it has engendered disclosures of information which totally exclude environmental issues. At best where reported, are grossly inadequate. Environmental disclosures are critically important to informed public and financial stakeholders. Pertinent is the difficulty of evaluating environmental remediation for environmental degradation where environmental costs do exist.

The United States Securities Exchange Commission (SEC) has required of listed companies, information impacting on the environment in financial reporting. This is also now the requirement for the European Union countries effective 2005 (Soonawalla:2006 and IFAC: 2005). It is therefore, considered appropriate for

companies impacting on the natural environment, to design and implement environmental accounting in an emerging environmental policy changing environment. This is particularly critical for the Oil & Gas sector (prospecting and producing), the downstream sector (refining and distribution) and the manufacturing sector which impact heavily on the environment in Nigeria. There should be environmental considerations in corporate decision making for capital projects and investments.

The broad objective of the study was to investigate best practice of environmental accounting among manufacturing companies operating in Nigeria. The specific objectives of the study are to assess the independence of tracking of all costs impacting on the environment, assess the efficiency and appropriateness of environmental costs reporting and disclosure in statutory financial statements and ultimately, evolve and provide conceptual bases and design for cost and management accounting and disclosure in financial reporting of environmental information.

REVIEW OF LITERATURE THEORY

ENVIRONMENTAL QUALITY COST MODEL

This is also known as Environmental Cost Reduction Model. It suggests that the lowest environmental costs will be attained at the point of Zero-Damage to the environment. It is considered that before environmental cost information can be provided, environmental costs must be defined. Environmental quality model is the ideal state of zero-damage to the environment, which is analogous to Environmental Quality Management (EQM), a zero-defect state of total quality management. This is certainly compatible with the concept of eco-efficiency

Environmental costs incurred are costs arising because poor environmental quality exists or may exist and these have to be prevented, reduced or remedied. Hansen and Mowen (2000:668) have defined environmental costs 'as costs associated with the creation, detection, remediation and prevention of environmental degradation'. They therefore, classify environmental costs into four categories of: 1) Prevention Costs, 2.) Detection Costs, 3) Internal Failure Costs and 4) External Failure Costs.

ENVIRONMENTAL POLLUTION PREVENTION COSTS: These are costs of activities which are meant to prevent the production of contaminants and wastes which could cause damage to the environment. The costs include costs incurred in evaluating and selecting pollution control equipment, quality environment consumables, designing processes, designing products and carrying out environment studies. Others are auditing environmental risks, developing environmental management systems, recycling products and obtaining ISO 14001 certification.

ENVIRONMENTAL DETECTION COSTS: Environmental detection costs are costs resulting from activities to determine if products, processes and other activities within the company are in compliance with appropriate environmental standards. The costs include auditing environmental activities, inspecting products and processes, developing environmental performance measures, testing contamination and measuring contamination level.

ENVIRONMENTAL INTERNAL FAILURE COSTS: These are costs resulting from the activities performed because contaminants and wastes have been produced but have not been discharged into the environment. Internal costs are incurred to eliminate and manage the wastes produced. The costs are costs for operating pollution control equipment, costs incurred for treating and disposing of toxic wastes, maintaining pollution equipment, licensing facilities for producing contaminants and costs resulting from recycling scrap.

ENVIRONMENTAL EXTERNAL FAILURE COSTS: These are costs of activities performed after discharging contaminants and wastes into the environment. These costs are those for cleaning up a polluted lake, cleaning up oil spills, cleaning up contaminated soil, settling personal injury claims which are environment related, restoring land to natural state, among others.

The need for Environmental Accounting is to enhance and further drive for the benefit of eco-efficiency which maintains that organizations whose activities adversely affect the environment can carry out their activities of production while simultaneously reducing negative environmental impacts, resource consumption and costs.

GAP OF ENVIRONMENTAL QUALITY COST MODEL (EQCM): Zero-damage point to the environment may not be attainable at anytime and may therefore, be an illusion. Productivity in an environment may however, tend towards eco-efficiency. Certain costs may correctly fall on either one or two environmental costs classifications. Again, costs classification may not be held as watertight concept.

ENVIRONMENTAL AUDIT

Auditors and accountants are increasingly drawn to environmental issues and activities which affect corporate performance. To report on environment, they have to provide financial information and assurance reports which are credible. This is what decision makers in managements have to place reliance upon. Environmental auditing (INTOSAI: 2004) is expected to 'encourage greater transparency and informed decisions about the application of resources and the impact of activities on environmental outcomes without distorting existing accounting standards'.

Environmental Audit is assessing environmental impacts of corporations' operations. It is the measurement and evaluation of all inputs and outputs from the production process. In order to implement cleaner production and eco-efficiency improvements, environmental audit can be an effective risk management tool for assessing compliance with environmental legislation. This subsequently assists companies to avoid the risk of prosecution and fines arising from potential environmental breaches. According to Australian Government Department of Environment, Water Heritage and Arts, (INTOSAI: 2004) a good audit will include a number of components, some of which are listed below:

- **Data Collection:** to identify and measure all inputs and outputs from the production process and provide a baseline for comparison against targets and a background for improvement.
- **Compliance:** to review and compare a company's activities and business targets against all relevant regulations, codes of conduct and government policies to assess compliance.
- **Documentation:** to document all aspects of audit to assess progress at a further date and to verify environmental performance to staff, regulators and the general community.
- **Periodic Audits:** to assess the impacts of new or changed legislation on operations and to assess whether internal targets for environmental efficiency are being met."

ENVIRONMENTAL QUALITY COST MODEL (EQCM) AND FINANCIAL REPORTING

The Environmental Quality Cost Model prescribes ideal cost measurements which are found relevant in modern cost and management accounting. Activity Based Costing/ Management (ABC/M) and Management as approaches of cost driver certainly facilitate Environmental Quality Cost Model concept. Whereas, effective cost and management accounting in the ABC/M concept is at best reported for internal management consumption, it is not reported in annual reports and financial statements as disclosure to the public (Asaolu & Nassar: 1997:4, 2002; Okafor and Akinmayowa: 2004:106-117).

Environmental Quality Cost Model however gives us an indication and possible direction in the thought trend of environmental cost and management accounting. EQCM ideals are expected to enhance environmental accounting which is an improved state over current conventional cost accounting.

We however, consider the alternative which is based on the current financial reporting and disclosure requirement. This is what is currently feasible from our statutory annual financial statements. This will be a furtherance of the Legitimacy Theory and Risk Society Theory for companies' Voluntary SER disclosures of information and to the extent a perceived legitimacy gap can be closed. Campbell, Craven and Shrivs (2003:564), selected three groups of companies. These companies depend on their supposed depth of more justification for the 'sinfulness' negative impact on the society (these were effect of tobacco and drinking on the society). This sample was restricted to those companies that had been continual members of the U.K. FTSE 100. In this regard, references are made to the works of Lindblom (1994); Gray et al (1995a:47-77); Trotman and Bradley (1981); Guthrie and Parker (1990:159-176); Patten (1991); Hacksten and Milne (1996:77-108) and Adams, Hill and Roberts (1998).

This study focuses on a wider scope by considering the Oil and Gas Sector and Manufacturing companies (particularly those listed in the Nigerian Stock Exchange) and Security Exchange Commission which are acclaimed to have far reaching degradation effect on the environment. We have however also considered other manufacturing companies through secondary data and information (i.e. annual reports and/or environmental reports). We have therefore

considered factors or variables such as those expressed in the functional form. The rating variables and modification in this research are agreeable to Aerts, Cormier and Magnan (2006:327) categorization of environmental costs as set below:

ECONOMIC FACTORS: Expenditures for pollution control equipment and facilities, Operating costs of pollution control equipment and facilities, Future estimates of expenditures for pollution control equipment and facilities, Future estimates of operating costs of pollution control equipment and facilities, Financing of pollution control equipment or facilities, Environmental debts, Risk provision, and Provision for charges.

LAWS AND REGULATION: Litigation (present and potential), Fines, Orders to conform, Corrective actions, Incidents, and Future legislation or regulation requirements.

POLLUTION ABATEMENT: Air emission information, Water discharge information, Solid waste disposal information, Control installations, facilities or processes described, Compliance status of facilities, Noise and odours.

SUSTAINABLE DEVELOPMENT REPORTING: Conservation of natural resources, Recycling, and Life cycle information.

Land Remediation and Contamination: Sites, Efforts of remediation (present and future), Cost/potential liability (provision for site remediation), Spills (number, nature, efforts to reduce), and Liabilities (actual and potential)

ENVIRONMENTAL MANAGEMENT: Environmental policies or company concern for the environment, Environmental management system, Environmental auditing, Goals and targets, Awards, Department or office for pollution control, ISO 14000, Participation in elaboration of environmental standards, Joint projects with other firms on environmental management

This means that relationships are expected between the dependent variables and the respective independent variables. The variables stated above are feasible for measurement from secondary data source which are the Corporate Annual Reports and /or Environmental Reports. Besides, EQCM also lends support to this option since it states that a tendency towards eco-efficiency through increasing reporting of environmental issues will have positive impact on corporate turnover, profitability and consequently, corporate net worth.

COST ESTIMATION FOR ENVIRONMENTAL ACCOUNTING

IFAC (2005) International Guidance Document on Environmental Management Accounting is an appreciable work on Environmental Accounting. Although, it is not yet a regulatory standard, it is intended to be a guide document which may translate into a future regulatory standard. This will be the case as accounting for the environment and related issues are taking on increasing global importance. Emerging benefits of Environmental accounting are valuable internal management initiatives with specific environmental focus towards cleaner production, supply chain management as well as environmentally preferable purchasing and Environmental Management System. EMA Guidelines form pertinent information for external reporting purpose globally.

EXTERNALITY ENVIRONMENTAL COSTS

The manner in which producers and consumers use environmental resources truly depend on the property rights governing those resources. Tietenberg and Lewis (2009) explain property rights as 'a bundle of entitlements defining the owner's rights, privileges and limitations for use of the resources'. Therefore, who is held for externality environmental costs has become an issue of controversy. If property rights are assigned to individuals (the sufferers) as in typically capitalist economy, to carry out their activities, polluter corporate organizations will be prepared either to pay the sufferers or aggressively engage Research and Development for more efficient technology to reduce to the barest their pollution activities. This will be the case since sufferers will prefer less or zero damage to their resources. On the other hand, if the property rights are assigned to corporate organization polluters, then those who suffer may be prepared to pay the polluter to reduce its scale of activity and the level of pollution. The process of bargaining ensues either way.

Arguments for and against are held on the commonly held view of Polluter Pays Principle (PPP) The Polluter Pays Principle has largely affected earlier Environmental Policies which had defined environmental principles and action such as prevention better than cure, environmental impacts to be taken into account in early decisions, co-ordination of national resources, environmental impact assessment, protection of nature and biodiversity, making most use of environmental resources, reducing pollution source, setting sustainable development targets and target climate change, acid rain and air pollution, urban quality of life and coastal resources.

In the view of Ison, Peake and Wall (2002:80) reasons for the equity argument are that if polluters are aware that they will have to pay compensation in full to sufferers of pollution, this will encourage research into more environmentally friendly technology. On the other hand, if sufferers are to pay, sufferers often find it more difficult to organize themselves; also that sufferers may not have sufficient funds to compensate polluters for the cost reducing pollution.

INTERNALIZING EXTERNALITY COSTS

Howes (2002:15) explains explicitly the critical need to internalize environmental externalities as follows:

While companies 'add value' through their activities they also extract value for which they do not pay. Their activities and operations give rise to external environmental impacts such as the contamination of groundwater, traffic congestion, poor urban air quality and so on. The costs of these external impacts are picked up by the rest of society, prices do not reflect costs and as such companies (and individuals) do not pay the full costs of their production and consumption decisions. Instead sub-optimal and inefficient decisions are made as producers and consumers respond to imperfect price signals...The degree to which the company is genuinely 'adding value' through its activities remains uncertain and if the company was to pay dividend, the payment could end up being made out of natural capital rather than income- a situation which is clearly unsustainable over the long term.

RESEARCH HYPOTHESES

The following Null Hypotheses were tested in order to achieve the stated objectives of this study:

1. H_0 : The application of environmental accounting practice in the Oil & Gas and Manufacturing sectors does not impact on company performance in Nigeria.
2. H_0 : Environmental accounting disclosure does not take the same pattern among the companies in Nigeria.

METHODOLOGY

RESEARCH DESIGN

The data for this study were mainly from secondary sources. For this purpose, both cross-sectional content analyses (within and across sector companies) and longitudinal (ten-year annual report and financial statements) content analyses of 132 companies in their sub-sectors as in Nigeria Stock Exchange Commission (NSE) were employed. The researcher has largely sourced for Company Annual Reports partly directly from Corporate Registrars of companies, direct requests from the companies, obtained from the Nigeria Stock Exchange (NSE) and the Manufacturing Association of Nigeria (MAN).

POPULATION AND SAMPLING PROCEDURE

The Kyoto Convention is particularly important as a reference point in environment protection. As remarked earlier in this report, the Kyoto Convention was a follow-up on the Montreal Protocol which was on substances that deplete the ozone layer. The Kyoto Convention was designed to ensure that nations' aggregate anthropogenic carbon dioxide equivalent emissions of greenhouse gases do not exceed their assigned amount. Party nations and corporate organizations in the Kyoto Convention shall individually or jointly work towards nations' attaining to the level of the expected reduction. Target is reduction of overall emission to at least 5% below the 1990 levels in the commitment period 2008 and 2012.

Although there have been prior international agreements on environment, but the Montreal Protocol in 1987 which was enforced in 1989 and the UN Framework Convention on Climatic Change in 1992 which was the immediate follow up to the Montreal Protocol are important reference years. However, the Kyoto Protocol adopted in December 1997 is made a focal determining date of environmental issues in corporate comparative analysis in this study. It has been remarked earlier in this study report that the issues on environment arising from the Kyoto Convention have implications for compliance to regulations on pollution prevention and environmental protection.

Estimated population size of companies are incorporated and those classified as registered businesses available in the Corporate Affairs Commission (CAC) of Nigeria contained in (Enyi, 2007) is well over 550,000. Of the estimate, manufacturing companies is estimated at about 59,500 By computation of Guilford and Fruchter (1973) sample size determinant of $n = N / \{1 + N (e^2)\}$, the sample size for this study was 397. The estimated sample size comprise also of the 215

effective companies (overall manufacturing and non-manufacturing companies) which are listed in the Nigeria Stock Exchange market (NSE) and Nigerian Securities Exchange Commission (SEC). In this study, sample size for manufacturing sector was 132 companies drawn from overall company population of 215 companies listed in the Nigeria Stock Exchange and the Securities Exchange Commission. These 132 sample companies comprise of the Oil & Gas and Manufacturing Sectors. The Manufacturing companies further comprise of those in Agriculture, Automobile & Tyre, Breweries, Building Materials, Chemical and Paints. Others are Conglomerates companies, Food/Beverages & Tobacco, Footwear, Healthcare, Industrial/Domestic Products, Packaging, Printing & Publishing, and Textiles. Added to the list of manufacturing are Foreign-listed Oil & Gas companies and other Emerging Markets known as Second-Tier Securities companies in the Nigeria Stock Market and the SEC (See Table 1)

TABLE 1: SUMMARY OF SECONDARY DATA ANALYZED IN COMPANIES

Secondary Data Companies	Company Years	Company Years %	Company	Company %	Oil and Gas Company Years	Manufacturing Company Years
Calculated Sample Size	3970	100%	397	100%	200	3770
Actual Companies Available	1320	33.2%	132	33.2%	200	1120
Actual Environmental Reported Companies	199	15.1%	38	29%	93 (46.5%)	106 (9.5%)
Environmental Non-Reported Companies	1121	84.9%	94	71%	107 (53.5%)	1014 (90.5%)

Source: Enahoro, J.A (2009): Design and Bases of Environmental Accounting in Oil & Gas and Manufacturing Sectors in Nigeria; Covenant University, Ota, Nigeria; Ph.D. Thesis in Accounting.

ENVIRONMENTAL QUALITY REPORTING/ DISCLOSURE MODEL SPECIFICATION

Environmental Reporting or Disclosure entails the release of a set of information relating to a company's past, current and future environment management activities, performance and financial implications. It also comprises information about the implications resulting from corporate environmental management decisions and actions. These may include issues such as expenditures or operating costs for pollution control equipment and facilities; future estimates of expenditures or operating costs for pollution control equipment and facilities. These may include sites restoration costs, financing for pollution control equipment or facilities, present or potential litigation, air, water or solid waste releases; description of pollution control processes or facilities; compliance status of facilities; among others (Aert, Cormier and Magnan 2006). Soonawalla (2006) admits that the main environmental issues in financial reporting among others are environmental costs, whether to expense or capitalize, classification of environmental costs, disclosure on details and/or breakdowns about environmental costs, and treatment of environment-related financial impacts on assets. Others are treatment of liabilities and contingent liabilities and how to recognize these, measurement of liabilities and contingent liabilities, environmental reserves, provisions and charges to income, impact of accounting rules (GAAP) on corporate behaviour, and environment information to be disclosed in greater details.

Corporate organizations are engaging more actively in environmental disclosure in their annual financial statements. This is peculiar with more financially successful companies in both the United States and the United Kingdom. In the United States of America, SEC regulations and accounting standards require American companies to disclose environmental information in annual reports. An International Public Accounting firm, KPMG, in 1999 (Gernon and Meek 2001:98), and Aert, Cormier and Magnan (2006:303) report from the KPMG's survey in 1996 that 'since 1993 the percentage of 100 companies in 12 leading industrial nations that mention the environment in annual reports have almost doubled to 69%'. Also, that '23% now produces separate environmental reports compared to 13% in 1993'. The same source reveals that Roche, a Swiss conglomerate is reputable for environmental disclosure on: Safety and Environmental protection expenditure, accidents and incidents, audit programme, developments in environmental policy, sustainable development, and environmental remediation Aert, Cormier and Magnan (2006). Disclosures at the moment worldwide are still voluntary. Except in few countries notably the European Union countries, most companies are deliberating on policies to incorporate environment costs.

This study draws from Campbell, Craven and Shives (2003), who captured voluntary social disclosure over a longitudinal period in excess of 20 years (1975 – 1997) in three companies, the tobacco, brewing and retailing in the U.K. Measurable variables for Environmental Quality Model (EQR) were explored through secondary data. EQR is as expressed:

ENVIRONMENTAL QUALITY REPORTING MODEL

$$EQR = f(TUR, PAT, CNA, EPS)$$

$$EQR, (Y) = b_0 + b_1TUR + b_2PAT + b_3CNA + b_4EPS + \epsilon$$

The 'a priori' expectations are:

$b_1 > 0$; implying that the higher the TUR, the higher the Y.

$b_2 > 0$; implying that the higher the PAT, the higher the Y.

$b_3 > 0$; implying that the higher the CNA, the higher the Y.

$b_4 > 0$; implying that the higher the EPS, the higher the Y.

VARIABLE DEFINITIONS

Y = Environmental Quality Reporting (as Dependent Variable) and others, set below as Independent Variables

TUR = Annual Turnover of Company

PAT = Profit After Tax

CNA = Company Net Assets

EPS = Earnings Per Share

In this study Environmental Quality Reporting is expected to enhance positively relative to positive response of environmental variables of corporate organizations. Environmental Quality Reporting is also expected to enhance corporate profitability performance such as Turnover of company (TUR), Profit After Tax (PAT), Corporate Net Assets (CNA), and Earnings Per Share (EPS). This study measures the nature of responsiveness through research instrument of secondary data statutory Annual Reports and Financial Statements of the sample companies.

INSTRUMENT RELIABILITY AND VALIDITY

Secondary data instrument are the Companies' Annual Reports and Financial Statements. Annual Reports are reliable statutory reports, used in similar works (Campbell, Craven and Shives: 2003:566). It is firmly asserted that the Annual Reports are documents of companies which are produced regularly which comply with statutory standards. They also serve as the most important documents for the organization's construction of its own social image. Audited Annual Reports and Financial Statements have reliability and credibility. For this purpose, both cross-sectional analyses (within and across sector companies) and longitudinal (ten-year annual financial) survey among 132 sample companies of 1320 company-years was carried out..

For Instrument validity, face-content validity, expert advice and best practice in environmental accounting were combined. In these regards, the views of experts and specialists in the Federal Ministry of Environment and the Department of Petroleum Resources (DPR) were sought on validity. Besides, past studies on environment conducted at the U.S. Environmental Protection Agency were consulted. Typical is the Tellus Institute Benchmark Survey of Management Accountants on Environmental Costs Accounting (U.S. Environmental Protection Agency: 1995). The works of Hansen and Mowen (2000:666-684) and Campbell, Craven and Shives (2003:558-581) partly constitute bases for factor variables.

ESTIMATION TECHNIQUE / RATING SCALE

For secondary data, the scale rating (1- 3) applied in assessing environmental reporting level in sample companies were:

	Rate/Score
Environmental item described in quantitative and/or monetary terms	3
Environmental item specifically described	2
Environmental item discussed in general terms (neither quantified nor specific)	1
Environmental item not in any way referred to	0

TECHNIQUE FOR DATA ANALYSES

The study explores environmental costs reporting and disclosure content from companies in the Oil and Gas Sector as well as the Manufacturing Sector. In this regard, Environmental Reporting reflects the quality reporting rather than merely the quantity. As observed in the Estimation/Rating technique, quality estimation is measured by both the quantity of the reporting in terms of number of descriptive words and quality of the environmental items described in quantitative and/or monetary terms, Environmental item specifically described and environmental items discussed in general terms (neither quantified nor specific). No score is attached to reporting which does not have environmental content in anyway. Quantitative/monetary reporting or disclosure is regarded as of more quality than mere indicative or descriptive.

The test statistics applied in this study are the descriptive statistics, t-test and the ANOVA. The Multivariate Regression was also applied. Secondary data in the study meet with assumptions for the T- test and ANOVA, data are interval or ratio type, sample groups as randomly and independently selected, normality distribution in the population from which sample is selected and standard deviations and variability fairly similar.

The Multivariate Linear Regression Analysis attempts to describe relationship of environmental accounting reporting/disclosure to identifiable determinant variables such as Turnover (TUR), Profit After Tax (PAT), Corporate Net Asset (C NA) and Earnings Per Share (EPS). The four determinant variables which are individually proxies for company economic performance are expected to influence and affect positively corporate Environmental Quality Reporting (EQR). Theory supporting environmental accountability and sustainable clean environment culminates on the desirability of the stakeholders and the general public for corporate organization's products and activities. It has been noted earlier that ethical investors will only invest in ethical companies; also ethical companies have marketing advantage if they strategically position themselves environmentally. Recent trend reveals that ethical companies stand at advantage for corporate financing.

The OLS Multiple Regression Analysis was the test for H₁, and overall measurement of environmental quality and pattern of quality of environmental reporting in the sectors was the test for H₂

SOURCES OF DATA COLLECTION

Critical source of secondary data were disclosures and reporting in corporate annual reports. Annual Reports and Financial Statements were largely utilized in the works of Campbell, Craven and Shrivs (2003); also in Lindblom, (1994); Gray, Kouhy, and Lavers (1995); Trotman and Bradley, (1981); Guthrie and Parker, (1990); Patten, (1991); Hacksten and Milne, (1996); and Adams, Hill and Roberts (1998). Owolabi (2007) also utilized company annual reports in his work. It is asserted that the Annual Reports are documents of companies which are produced regularly which comply with statutory standards. They also serve as the most important documents for the organization's construction of its own social image, and audited Annual Reports and Financial Statements have reliability and credibility.

The researcher has largely sourced for Company Annual Reports partly from Corporate Registrars of companies and also through direct request through correspondence to each company alongside questionnaires posted to them. The researcher visited the Nigeria Stock Exchange (NSE) for available financial data and also the Manufacturing Association of Nigeria (MAN) for more Annual Reports Data were extracted from corporate annual reports starting from the year of the Kyoto Protocol 1997 to 2006 (10 years). Environmental measurement and rating variables and modification in this research are agreeable to Aerts, Cormier and Magnan (2006) in which environmental coding comprise of 37 items which are grouped into six categories, namely: economic factors, laws and regulations, pollution abatement, sustainability development, land remediation and contamination and environmental management.

Secondary Data gathering were not restricted to Annual Financial Reports but were also explored from corporate websites of sample companies for reporting Environment Policies. It is discovered that certain companies report summaries in Annual Financial Reports while detailed environmental reporting is contained in corporate register website particularly for certain successful multinational companies.

ENVIRONMENTAL QUALITY REPORTING

PANEL A Environmental Quality Reporting in Combined Oil and Gas and Manufacturing Sectors

REPQUALS	Mean	N	Std. Deviation
Indicont	92.92	49	75.691
Descont	1012.09	109	1485.863
Quantcont	1185.88	41	1173.374
Total	821.57	199	1289.433

PANEL B Environmental Quality Reporting Separately in the Oil and Gas and Manufacturing Sectors

REPQUALS	Mean	N	Std. Deviation	Sum	Minimum	Maximum	Range
Indicontog	122.96	28	83.899	3443	25	253	228
Descontog	922.93	45	1432.255	41532	84	8150	8066
Quantcontog	978.05	20	960.524	19561	327	4140	3813
Indicontm	52.86	21	36.032	1110	26	124	98
Descontm	1074.78	64	1530.496	68786	90	5100	5010
Quantcontm	1383.81	21	1338.959	29060	120	3540	3420
Total	821.57	199	1289.433	163492	25	8150	8125

Indicontog is environmental report disclosure of indicative content in the oil and gas sector, Descontog is descriptive content in the oil and gas sector, and Quantcontog is quantitative content in the oil and gas sector. Also, Indicontm is indicative content in the manufacturing sector, Descontm is descriptive content in the manufacturing sector and Quantcontm is quantitative content of environmental report disclosure in the manufacturing sector.

SECONDARY DATA ANALYSIS

In table above of Environmental Quality Reporting, this is an attempt to evaluate both the quantity of environmental reporting and also the quality. Reporting is described as indicative content (indicont) if reporting is merely indicating environment clause i.e. neither quantified nor specific. Environmental reporting having specific description content is described as 'descont', and environmental item having quantitative and/or monetary term content is described as 'quantcont'. Environmental reporting and disclosure reflect those of dominant companies in the sub-sectors of petroleum marketing, indigenous Oil & Gas, foreign listing Oil & Gas companies. Those of other manufacturing companies were dominated by the sub-sectors of automobile and tyres, breweries, building materials, chemical and paint, and the conglomerates. Others are food and beverages, and the health care sub-sectors. Those without environmental reports are companies in the sub-sectors of agriculture, aviation, construction, foot wear, industrial/domestic product manufacturing, packaging manufacturing, printing and publishing, textiles manufacturing, and the second-tier securities sub-sectors. The sub-sectors were completely excluded from the data as a result of no environmental reporting or disclosure whatsoever.

Study reveals mean environmental reporting of 933.55 and 693.94 for the manufacturing and the oil and gas sectors respectively. The oil and gas however have highest environmental reporting of maximum of 8,150 as against 5,100 for the manufacturing sector. There are lowest reporting of 25 and 26 for the oil and gas

and the manufacturing respectively. Disclosure of environmental reporting in the context of mere indicative content or descriptive improved status, or quantitative and monetary content is evident in Panel A. In this respect, means of overall of environmental disclosure are quantitative 1,185.88, descriptive 1,012.09, and mere indicative 92.92. Standard deviation is highest for descriptive content 1,485.863, quantitative content 1,173.374 and indicative content of 75.691.

The study further discloses details of environmental disclosure. Maximum reporting of 8,150 occurred in foreign listing oil and gas companies in Panel B. Typical companies of such high quality and quantitative reporting and disclosures are Shell Petroleum Development Company (SPDC) and Exxon Mobil. Next to the foreign listing oil and gas sub-sector is food and beverages and health care sub-sectors. The dominating companies in this high category of environmental reporting and disclosure are Nestle Nigeria Plc for the food and beverages sub-sector and GlaxoSmithkline Consumer Nigeria Plc for the health care sub-sector.

DISCUSSION OF FINDINGS

Evidence in the study are that the extent of disclosure of environmental reporting in the context of mere indicative content or descriptive content improved status, or quantitative and monetary content which is most qualitative. In this respect, means of overall of environmental disclosure are quantitative content 1,185.88, descriptive content 1,012.09, and mere indicative content 92.92. Standard deviation is highest for descriptive content 1,485.863, quantitative content 1,173.374 and indicative content of 75.691. (See Appendix 1)

The study further in Panel D of Appendix 1 reveals means of environmental reporting of 933.55 and 693.94 for the manufacturing and the oil and gas sectors respectively. The oil and gas however have highest environmental reporting quality of maximum of 8,150 as against 5,100 for the manufacturing sector. Standard deviation is highest for descriptive content 1,485.863, quantitative content 1,173.374 and indicative content of 75.691. (See Panel A of Appendix 1) The companies of highest environmental quality and quantitative content reporting and disclosures are Shell Petroleum Development Company (SPDC) and Exxon Mobil. These are foreign listing oil and gas upstream sub-sector companies operating in Nigeria. Next to the foreign listing oil and gas sub-sector in quality reporting by reason of qualitative content is the food and beverages and health care sub-sectors. The dominating companies in this high category of environmental reporting and disclosure are Nestle Nigeria Plc of the food and beverages sub-sector and GlaxoSmithkline Consumer Nigeria Plc of the health care sub-sector. In Panel B, there are lowest reporting of 25 and 26 for the oil and gas and the manufacturing sectors respectively.

Environmental accounting disclosure does not take the same pattern among companies in Nigeria. Study shows a high significance of the non-equality of the between groups and within groups of sectors environmental reporting and disclosure. The high significance of the mean differentials, Sig. 0.001, $p < 0.05$ is an indication that environmental accounting disclosure does not take the same pattern among companies in Nigeria. Within the same sub-sectors, while some companies have high level of environmental reporting, others are low. Therefore, environmental accounting practice does not impact on company performance in Nigeria.

EQR MODEL 1 REGRESSION FUNCTION AND TEST FOR HYPOTHESIS 1 (H_0)

Panels A – G of Table 4.4 is Multivariate Regression for Model 2 Environmental Reporting and Disclosure in the Oil and Gas and the Manufacturing sectors.

$EQR = f(a, TUR, PAT, CNA, EPS, \epsilon)$

$EQR, Y = b_0 + b_1TUR + b_2PAT + b_3CNA + b_4EPS + \epsilon$

The 'a priori' expectations are:

$b_1 > 0$; implying that the higher the TUR, the higher the Y.

$b_2 > 0$; implying that the higher the PAT, the higher the Y.

$b_3 > 0$; implying that the higher the CNA, the higher the Y.

$b_4 > 0$; implying that the higher the EPS, the higher the Y.

We explored the level of existence or non-existence of environmental costs reporting/disclosure in sample companies, whether of current or capital expenditure. Also, we explored the level of independence of tracking of all costs impacting on the environment through content analysis of company annual environmental reporting. The variables are summed up (i.e. additive) to establish the responsiveness of environmental costing and reporting of corporate organizations in the category sectors of Oil and Gas and the Manufacturing. Pearson Correlation of Environmental Reporting to Turnover (TUR) is .086, Profit After Tax (PAT) is .090, Company Net Assets (CNA) is .131 and Earnings Per Share (EPS) is .008. These are however at non-significant levels of 0.128 for TUR, 0.118 for PAT, and 0.460 for EPS. It is however significant, 0.041 for CNA.

In Panel C, R-Square and Adjusted R-Square of PAT as predictor variable are 0.017 and 0.01 respectively, while R square and Adjusted R Square in Panel D showing all predictor variables are however 0.03 and 0.008. Panel E reveals F value of 1.334, at Sig. 0.259, $p > 0.05$. This is non-significant. Panel F of Appendix 3 shows predictor variables of Turnover (TUR) indicating t value -1.171, at significant level of 0.243 and Beta value of -0.225; Profit After Tax (PAT) indicating t value of 0.213 at significant level of 0.831 and Beta value of 0.033. Predictor Company Net Asset (CNA) has t value of 1.897 at significant level of 0.061 and Beta value of 0.362; and Earnings Per Share (EPS) have t value of -1.231 at significant level of 0.220 and Beta value of -0.117. Correlation is low between EQR and TUR, PAT, CNA and EPS.

A significant correlation indicates a reliable relationship, not necessarily a strong correlation (with enough subjects, a very small correlation can be significant). According to Cronk (2004), generally, correlations greater than 0.7 are considered strong and correlations less than 0.3 are considered weak. Also, correlations between 0.3 and 0.7 are considered moderate. The above Model function is therefore, valid with the coefficients stated as follows: $EQR, Y = b_0 + b_1TUR + b_2PAT + b_3CNA + b_4EPS + \epsilon$

$EQR, Y^1 = 777.415 - 2.49E-05TUR + 2.707E-05PAT + 8.468E-05CNA - 4.188EPS + \epsilon$

Although, the above EQR Model 1 is valid, the abysmally low Adjusted R Square level of 0.008 (0.8%), negative and low Beta values of predictors are indications of current low level of environment reporting and disclosure in most companies in Nigeria. Therefore, the null of Hypothesis 1 (H_0) is accepted which means that environmental accounting non-practice does not impact on Companies' performance in Nigeria at the moment.

We are not able to ascertain response of environmental reporting on Turnover (TUR), Profit After Tax (PAT), Corporate Net Assets (CNA) and Earnings Per Share (EPS) because environmental reporting is barely disclosed in most companies. Besides, Environmental Policy Statements and performance, which are reported in a few companies such as in Guinness, Dunlop and Ashaka Cement are scarcely read by most Financial Statement users. Where these are read at all, contents are barely imbibed and their significance not appreciated. The level of awareness of the Financial Statement users and the general public for corporate responsibility for environmental accounting is very low. Consequently, reporting on environment or otherwise scarcely have effect on corporate performance with regard to TUR, PAT, CNA and EPS

Responses of environmental accounting variables in the model from sample companies are evident in empirical values which are low and negative in some cases. Also, beta coefficients of negative values and 0.041 (4.1%) and 0.071 (7.1%) indicate low effect of environmental costing responsiveness. (Appendix 2)

Reporting in most Nigerian companies is on Employees Health, Safety and Environment and these reports centre on safety workplace and hazard prevention for employees, with focus on employee health. There is little or no focus on environmental issues, activities or the prevention of degradation on the environment. There are also, no policy statements to prevent or alleviate these occurrences.

Nigeria's SAS 23 on Provisions, Contingent Liabilities and Contingent Assets became effective in 2006. This does not specifically provide for environmental issues and reporting. There are no accounting standards in Nigeria which recognize carbon allowances and trading as it is in the IAS 38. The IAS 38 recognizes carbon allowances as contingent assets and therefore disclosed in notes to financial statements. Carbon Trading and market have not commenced in Nigeria. In the oil & gas sector, for instance, there is still unrestricted gas flaring and carbon dioxide emission into the air in the manufacturing sector.

On disclosure of environmental issues in financial reports, it is suspected that there is much guesses by employees of Environmental Regulatory Agencies. This is likely the case when what is expected or what actually obtains with regards to statutory reporting are not certain. The positive responses do not correspond to

evidence on Annual Reporting. There may however be other forms of reporting which are statutorily required to be provided from the operators. Responses show that Environmental Impact Assessments (EIAs) are carried out on projects which are expected to have impact on environment.

Positive responses are high in the monitoring process. The Federal Ministry of Environment (FMEnv.) and the Lagos State Environmental Protection Agency (LASEPA) are particularly noted for engaging actively in environmental monitoring. The Department of Petroleum Resources (DPR) also actively regulates the oil & gas sector.

POLICY RECOMMENDATIONS

Corporate organizations whose operations impact on environment should develop Plans and Operating Guidelines as Internal Corporate Standards which are expected to meet Industry Operating Standards. Corporate Plans and Operating Guidelines should focus on minimizing impact on environment. Consequently, environmental compliance audit and inspection programme of corporate operating facilities should be put in place. There should be continued evaluation of new technologies to reduce environmental impacts.

Standard definitions should be agreed for environmental spending and expenditure for purpose of annual reports' environmental accounting in the manufacturing, Oil & Gas sectors operating in Nigeria. The adoption of the United Nations Environmental Management Accounting (EMA) Guidelines will enable for the formulation of a Generally Accepted Accounting Principle (GAAP) will evolve environmental accounting practice. This will not only move forward Environmental Accounting practice but enable for joining global campaign for environmentally enhanced society.

Accounting Standards Board and the nations' Accountancy Regulatory Institutes should accommodate the growing awareness in environmental accounting and formulate disclosure requirements. Bases and design for environmental accounting and management as emphasized in this study should be considered.

Both SEC and accounting practice in Nigeria should consider the urgency of placing demand on corporate organizations which impact on environment environmental disclosure requirement. Companies considered as polluters registered on the Stock Exchange Market should provide information about the costs incurred to conform to environmental legislations. Other companies not in that category who have it as voluntary requirement should be encouraged on environmental disclosure.

Since worldwide assented to the Kyoto Protocol, there is need the International Accountancy Standards Board (IASB) to promulgate relevant standards IN THE International Financial Reporting Standards (IFRS) to incorporate environmental issues in financial reporting. This is in line with International Accounting Standard 38 and global trend. This is the development in the EU Communities, Canada, the USA, Norway, Zimbabwe, Namibia, The Philippines and Indonesia, among others.

CONCLUSIONS

We are able to conclude from study that environmental expenditures are not charged independently of other expenditures; there is no cost accounting system for tracking of externality costs; and that environmental accounting practice does not impact on company performance in Nigeria. We are also able to conclude that Environmental accounting disclosure does not take the same pattern among companies in Nigeria. Low Adjusted R Square level of 0.008 (0.8%) and low Beta values of predictors which are indications of current low level of environment reporting and disclosure in most companies in Nigeria, reveal that environmental costing system is not significant for purpose of internal decision in Nigerian companies currently. Therefore, environmental accounting practice does not impact on company performance in Nigeria. However, a significant size of the upstream sector (not downstream) of the oil and gas sector integrate environmental cost consideration in capital projects and investments in the companies. This is also noted in a few multinational companies engaged in manufacturing.

Two main internal barriers which affect the ability of the company to collect environmental cost information are the absence of classification of costs on environmental bases. Skills in the principles and practice of environmental cost and management accounting have not yet attained prescribed standards in Nigeria. However, suggested bases and design in this study is expected to enhance the practice of environmental cost accounting. It is rightly observed by Salomone, and Galluccio (2001:34) that 'descriptive non financial information cannot help the reader to understand the interactions between the company and the environment in quantitative and financial terms.' They therefore, gave the opinion that 'qualitative disclosure must be accompanied by the same type of precise and clear financial information that is useful to reconstruct the economic consequences deriving from environmental problems.' In the same thought, it is considered that although environmental information could be published in other company forms such as in social reports, press releases, company websites, among others, but it is only in the corporate Annual Reports can these information be accepted as authentic, acceptable and justifiable.

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APPENDESES

APPENDIX 1: ENVIRONMENTAL QUALITY REPORTING

PANEL A: ENVIRONMENTAL QUALITY REPORTING IN COMBINED OIL AND GAS AND MANUFACTURING SECTORS

REPQUALS	Mean	N	Std. Deviation
Indicont	92.92	49	75.691
Descont	1012.09	109	1485.863
Quantcont	1185.88	41	1173.374
Total	821.57	199	1289.433

PANEL B: ENVIRONMENTAL QUALITY REPORTING SEPARATELY IN THE OIL AND GAS AND MANUFACTURING SECTORS

REPQUALS	Mean	N	Std. Deviation	Sum	Minimum	Maximum	Range
Indicontog	122.96	28	83.899	3443	25	253	228
Descontog	922.93	45	1432.255	41532	84	8150	8066
Quantcontog	978.05	20	960.524	19561	327	4140	3813
Indicontm	52.86	21	36.032	1110	26	124	98
Descontm	1074.78	64	1530.496	68786	90	5100	5010
Quantcontm	1383.81	21	1338.959	29060	120	3540	3420
Total	821.57	199	1289.433	163492	25	8150	8125

Indicontog is environmental report disclosure of indicative content in the oil and gas sector, Descontog is descriptive content in the oil and gas sector, and Quantcontog is quantitative content in the oil and gas sector. Also, Indicontm is indicative content in the manufacturing sector, Descontm is descriptive content in the manufacturing sector and Quantcontm is quantitative content of environmental report disclosure in the manufacturing sector.

PANEL C: ENVIRONMENTAL QUALITY REPORTING SUMMARY IN THE SUB-SECTORS

Sub-sectors	Mean	N	Std. Deviation	Minimum	Maximum	Range
Pm	439.96	47	384.907	25	1348	1323
flog	1188.86	35	1714.753	84	8150	8066
iog	204.36	11	72.401	92	253	161
automt	124.00	4	.000	124	124	0
brew	183.44	16	165.338	27	440	413
buidm	739.57	14	372.501	258	1016	758
chempt	287.65	17	144.678	120	480	360
congl	206.07	14	129.919	45	364	319
foodb	1764.90	29	1897.400	37	5100	5063
healthc	2184.50	12	1814.861	26	4520	4494
Total	821.57	199	1289.433	25	8150	8125

Table sub-sector descriptions are (pm) which is petroleum marketing sub-sector (oil and gas), (flog) is foreign listing oil and gas, and (iog) is the indigenous oil and gas sub-sector. Sub-sectors in the manufacturing sector are (automt) which is automobile and tyres sub-sector, (brew) for the breweries, (buidm) for the building materials, (chempt) for chemical and paint sub-sector, and (congl) for the conglomerates. Others still in the manufacturing sector are (foodb) for food and beverages and (healthc) for the health care sub-sector.

PANEL D: ENVIRONMENTAL QUALITY REPORTING SUMMARY FOR SECTORS

Sub-sectors	Mean	N	Std. Deviation	Minimum	Maximum	Range
Oil & Gas	693.94	93	1147.216	25	8150	8125
Manufacturing	933.55	106	1398.219	26	5100	5074
Total	821.57	199	1289.433	25	8150	8125

APPENDIX 2: COEFFICIENTS^A

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
1 Intercept	777.415	121.012			6.424	.000		
TURNOVER	-2.49E-05	.000	-.225		-1.171	.243	.152	6.568
PAT	2.707E-05	.000	.33		.213	.831	.237	4.219
NETASSET	8.468E-05	.000	.362		1.897	.060	.155	6.460
EPS	-4.188	3.402	-.117		-1.231	.220	.623	1.604

a. Dependent Variable, Environmental Quality Reporting

APPENDIX 3: REGRESSION

PANEL A: DESCRIPTIVE STATISTICS

	Mean	Std. Deviation	N
Environmental Reporting Quality			
TURNOVER	868.08	1350.692	177
PAT	6594600	12207751.04	177
NETASSET	482961.9	1642659.299	177
EPS	3034250	5773722.713	177
	3.5613	37.76224	177

PANEL B: CORRELATIONS

		Reporting Quality	TURNOVER	PAT	NETASSET	EPS
Pearson Correlation	Reporting Quality	1.000	.086	.090	.131	.008
	TURNOVER	.086	1.000	.840	.887	.320
	PAT	.090	.840	1.000	.834	.478
	NETASSET	.131	.887	.834	1.000	.500
	EPS	.008	.320	.478	.500	1.000
Sig. (1-tailed)	Reporting Quality	.	.128	.118	.041	.460
	TURNOVER	.128	.	.000	.000	.000
	PAT	.118	.000	.	.000	.000
	NETASSET	.041	.000	.000	.	.000
	EPS	.460	.000	.000	.000	.
N	Reporting Quality	177	177	177	177	177
	TURNOVER					
	PAT					
	NETASSET					
	EPS					

PANEL C: MODEL SUMMARY – PAT AS VARIABLE PREDICTOR

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.129 ^a	.017	.010	1064.085

a. Predictors (Constant), PAT

PANEL D: MODEL SUMMARY – ALL VARIABLES AS PREDICTORS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.173 ^a	.030	.008	1345.549

a. Predictors (Constant), TURNOVER, PAT, NETASSET, EPS

PANEL E: ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9661813	4	2415453.319	1.334	.259 ^a
	Residual	3.11E+08	172	1810623.410		
	Total	3.21E+08	176			

a. Predictors (Constant), TURNOVER, PAT, NETASSET, EPS

b. Dependent Variable: Environmental Quality Reporting

PANEL F: COEFFICIENTS^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 Intercept	777.415	121.012		6.424	.000		
TURNOVER	-2.49E-05	.000	-.225	-1.171	.243	.152	6.568
PAT	2.707E-05	.000	.33	.213	.831	.237	4.219
NETASSET	8.468E-05	.000	.362	1.897	.060	.155	6.460
EPS	-4.188	3.402	-.117	-1.231	.220	.623	1.604

a. Dependent Variable, Environmental Quality Reporting

PANEL G: COLLINEARITY DIAGNOSTICS

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Intercept)	TURNOVER	PAT	NETASSET	EPS
1	1	3.227	1.000	.02	.01	.02	.01	.02
	2	.946	1.847	.38	.00	.01	.00	.29
	3	.611	2.298	.41	.02	.04	.00	.44
	4	.148	4.666	.19	.07	.88	.22	.01
	5	6.833E-02	6.872	.00	.89	.06	.77	.25

a. Dependent Variable: Environmental Quality Reporting

ISLAMIC MICRO-FINANCE AND POVERTY ALLEVIATION: A CASE OF PAKISTAN**DR. WAHEED AKHTER****ASST. PROFESSOR****DEPARTMENT OF MANAGEMENT SCIENCES****COMSATS INSTITUTE OF INFORMATION TECHNOLOGY (CIIT)****LAHORE, PAKISTAN****DR. NADEEM AKHTAR****ASST. PROFESSOR****DEPARTMENT OF MANAGEMENT SCIENCES****COMSATS INSTITUTE OF INFORMATION TECHNOLOGY (CIIT)****LAHORE, PAKISTAN****KHURAM ALI JAFRI****ASST. PROFESSOR****DEPARTMENT OF MANAGEMENT SCIENCES****COMSATS INSTITUTE OF INFORMATION TECHNOLOGY (CIIT)****LAHORE, PAKISTAN****ABSTRACT**

This research paper recognizes Islamic micro-finance as an important component in poverty alleviation strategies. While conventional microfinance products have been successful in Muslim majority countries, these products do not fulfill the needs of all Muslim clients. While taking an overview of Islamic microfinance in Muslim countries, this research paper undertakes a case study of Akhuwat, an Islamic microfinance organization operating in Pakistan. Critical financial analysis of Akhuwat indicates that it is providing its services for all living below the poverty line including the "extreme poor" and Interest free loans can be used as a powerful tool against poverty. It recommends that integrating Islamic microfinance with NGOs, NPOs (non-profit organizations), Zakah, Awqaf and with Takaful as well as with professional training and capacity building institutions will enhance the financial stability of Islamic microfinance institutions and will be helpful to achieving their aim of providing micro financial services to the poorest of the poor under one roof.

KEYWORDS

Islamic microfinance, Shari'ah Compliance, Micro Financial Institutions (MFIs), Global Practices, Takaful, Poverty Alleviation.

INTRODUCTION

Microfinance refers to making small loans available to poor people (especially those traditionally excluded from financial services) through programmes designed specifically to meet their particular needs and circumstances (Khan, 2008; p.6). The needs of the poor in Islamic countries are no different from the poor in other societies except that these are conditioned and influenced by their faith and culture in a significant way. They need financial services because they are often faced with events that call for spending more money than might be available around the house or in the pocket (IRTI, 2007, p.20). The Islamic world is enormous with over 1.2 billion people, stretching from Senegal to the Philippines. Poverty rate is quite high in all Muslim countries except a few countries in Southeast Asia and the Middle East. Poverty levels have also been associated with high inequality alongside low productivity. Half of the Indonesia population (about 129 million) is living below the poverty line of US\$2 a day. While in South Asia two largest Muslim states - Bangladesh and Pakistan - alone account for 122 million each living below the poverty line where as 100 million Muslims of India are also living below the poverty line (IRTI, 2007, p.18). Sources suggest that about 72 percent of people in Muslim countries do not use the formal financial services because financial system is interest based which is prohibited in Islam (Karim, Tarazi and Reille, 2008). This study attempts to give an overview of Islamic micro finance development in Muslim countries while focusing on its operations in Pakistan. It takes a case study of Akhuwat, an Islamic microfinance organization. It was established in 2001 and the objective was to help the people living in abject poverty with interest free credit. The research paper analyses the financial performance of Akhuwat for the period 2002-2006 and gives recommendations for the future potential of Islamic microfinance in the country.

PROBLEM STATEMENT

Conventional micro financial services facilities do not meet the needs of majority of Muslim population in developing countries like Pakistan, Bangladesh, Indonesia as well as in developed countries like UK, USA and Australia. The reason is that conventional micro financial institutions charge interest on their loans provided to small and medium enterprises as well as women entrepreneurs. A vast majority of muslim population refrains from availing conventional micro financial services due to the element of interest that is considered repugnant to *Shari'ah*. Over 470 millions Muslim population is living below poverty line (less than \$2 per day) in four largely populated Muslim countries: Pakistan, Bangladesh, Indonesia and India (IRTI, 2007). In this scenario, Islamic micro finance has tremendous potential in these countries and could be used as a powerful weapon to fight against poverty. It can develop a valuable human capital base by satisfying the financial needs of Muslim community and positively contribute towards the economic growth in those countries.

LITERATURE REVIEW

Over the last few years micro-finance has been increasingly recognized as an important component in poverty alleviation strategies. Poor households face difficulty in generating regular and substantial income to save for future and are extremely vulnerable to economic, political, and physical downturns. A little drop in income or increase in expense can have a disastrous effect on their already low standard of living. They have limited access to health care facilities; have low literacy rate and poor living conditions. Death, sickness, or accident may force them to dispose their property or some of the productive assets, which in turn further decreases future income and current livelihood. The frequency of losses is also greater for the poor; many are regularly exposed to natural disasters (like flood), fire, and theft with limited means of recovery (Patel, 2004; Ahmad, 2007; Obaidullah, 2008).

Given the dominance of western culture and values as well as plight and vulnerability of today's Islamic world, there has always been an incessant conflict between the two civilizations. Muslims have always been struggling for decades at almost every walk of real life to retain their values and culture. The philosophy behind such struggle is underpinned in powerful expression of collective identity that is multiple and highly diversified following the contours of each culture and historical formation of each identity. The feeling of this collective identity has urged Muslim scholars to find solutions of current economic problems to make their lives compatible with *Shari'ah* and to safeguard the Muslim *Ummah* against the perils of the western culture. (Yusuf, 2006; pp.56-63)

While conventional microfinance products have been successful in Muslim majority countries, these products do not fulfill the needs of all Muslim clients. Combining the Islamic social principle of caring for the less fortunate with microfinance's power to provide financial access to the poor has the potential to reach out to millions more people, many of whom say they would prefer Islamic products over conventional microfinance products. From affordable loans and insurance products to safe places to save, microfinance services have been powerful weapons in the fight against poverty, especially in Latin America and South Asia (CGAP News, 2008).

The World Bank estimates that there are over 7000 microfinance institutions, serving some 16 million poor people in developing countries. The total cash turnover of MFIs world-wide is estimated at US\$2.5 billion and the potential for new growth is outstanding. The Microcredit Summit estimates that US\$21.6 billion is needed to provide microfinance to 100 million of the world's poorest families.

Other estimates tell us that worldwide, there are 13 million microcredit borrowers, with USD 7 billion in outstanding loans, and generating repayment rates of 97 percent; growing at a rate of 30 percent annual growth. Despite all this less than 18% of the world's poorest households have access to financial services (Grameen Foundation, 2007). Ahmad (2007) points out that Microfinance initiative is widely acclaimed as a new approach to alleviate Poverty, to bring about economic development and to improve the living conditions of the poor.

The application of Islamic finance to microfinance was first discussed in depth by Rahul and Sapcanin (1998). They demonstrate that Islamic banking, with its emphasis on risk sharing and, for certain products and collateral-free loans, is compatible with the needs of some micro-entrepreneurs. Viable projects that are rejected by conventional lending institutions because of insufficient collateral might prove to be acceptable to Islamic banks on a profit-sharing basis. However, they concluded that from a microfinance standpoint the *mudharaba* model (profit-sharing) has more drawbacks than the *murabaha* model (cost plus markup). The *murabaha* model is overall more cost effective, has a lower margin of error, and provides immediate collateral for a MFI because the MFI owns the goods until the last installment is paid. Dusuki (2006) has presented the idea of Islamic microfinance initiative in the perspective of Ibn Khaldun's concept of 'Asabiyah or social Solidarity that emphasizes group efforts and loyalty over self-interests of individuals. He argues that Islamic microfinance can be promoted through group lending to the poor who are normally denied access to mainstream banking services.

According to Dr. Abbas Mirakhor, Executive Director of the IMF as referred by Chaudhri (2006): "[An] important function of Islamic finance that is seldom noted ... is the ability of Islamic finance to provide the vehicle for financial and economic empowerment ... to convert dead capital into income generating assets to financially and economically empower the poor..." Microfinance is already more structurally aligned to applying Islamic equity financing structures. As mentioned previously, microfinance programs are based on group sharing of risk and personal guarantee while maintenance of trust and honesty is tied to the availability of future funds (Chaudhri, 2006).

Ahmad (2007) opines that contemporary Islamic finance has been largely disengaged from microfinance. On the one hand, most microfinance institutions (MFIs) are not Islamic as their financing is interest based. On the other hand, Islamic financial system has been dominated mainly by Islamic banks. He further argues that MFI has to create various reserves to cover various risks arising due to the nature of its assets and liabilities. To protect from withdrawal risks, the MFI can use *takaful* and profit-equalization reserves to give depositors competitive returns. The paper shows that the proportion of *waqf* funds that can be allocated into microfinancing will depend on the *takaful* and economic capital reserves.

Obaidullah (2008) has identified that absence of institutional credit guarantee is an important factor that demotivates the commercial banks and IFIs to be involved in micro-credit activities for low income groups of society as well as small and medium enterprises. He maintains that it is essential to establish linkages among various institutions at micro, meso as well as at macro level for the growth of Islamic MF industry. He further asserts that if various organizations including Govt. agencies, Central Bank, Commercial and Islamic Banks, *Takaful* and Cooperative Companies as well as NGOs and NPOs could be interlinked, they can reach at 'the poorest of the poor' of a society and significantly contribute towards the development of micro-enterprises, enhancing the financial inclusion and alleviating the poverty from the gross-root levels of a society.

Frasca (2008, p.3) while focusing on the competitiveness of Islamic Microfinance, argues that Islamic finance could be potential 'heaven' for the investors who have become victim of current global credit crisis to relieve them from the speculative excess of the conventional system. Karim et. al (2008) conducted a survey, which includes 125 institutions in 19 Muslim countries. It shows that Islamic microfinance providers still reach only 300,000 clients, one-third of them in Bangladesh alone. They argue that to reach more people and build sustainable institutions, it is essential to focus on designing affordable products, training and retaining skilled loan officers and administrators, improving operational efficiency, and managing overall business risk.

According to IDLO Report (2009), microfinance remains less developed in the Arab world than, for example, in Asia, Africa or Latin America and, although it seems to have taken hold in many Middle Eastern and North African (MENA) countries, it remains largely undeveloped in Saudi Arabia and in its infancy in the UAE. However, since 2006, the UAE has staged several high profile microfinance conferences showcasing microfinance initially as an alternative business model, in which participants might like to engage, and subsequently as an alternative asset class, in which participants might like to invest. On 17 January 2008 Noor Islamic Bank announced its commitment to serving the "unbankable" segment of the UAE population and, on 20 January 2009 at the Arab Economic, Social and Development Summit in Kuwait City, the League of Arab States announced the formation of a US\$2 billion fund run by the Arab Development Fund that is set to include a microfinance programme that is aimed at helping small businesses through the credit crunch, extending credit to cottage industries and reducing unemployment across the Arab world.

The Table 1 shows the outreach of Islamic micro-finance CGAP global survey in 2007 as referred by Frasca (2008, p. 12) in which information was collected from over 126 Islamic MFIs and MFI experts in 19 Muslim countries. The survey reveals that Islamic MFIs have a total global outreach of 380,000 clients (or an estimated one-half 1% of total microfinance outreach). 80,000 of the above clients are served through a network of Indonesian cooperatives and another 100,000 of the total clients are served by two large MFIs in Bangladesh. It must be stressed that the MENA region is particularly underserved as CGAP's survey revealed that Islamic MFIs were concentrated in three countries Indonesia, Bangladesh and Afghanistan, accounting for 80% of the global outreach.

Frasca (2008) undertakes two seminal case studies in the use of Islamic finance instruments in MFIs: a) the *Sanduq* project in Jabal Al-Hoss, Syria; and b) the Hodeidah Microfinance Programme (HMFP) in Hodeidah, Yemen. He concludes that Islamic MFIs can be both competitive with conventional MFIs in the region and meet the reported demand for religiously tailored financial services for lower income groups. If we are to assume that microfinance in general can improve standard of living and alleviate poverty, Islamic MFIs appear to be doing as well as their conventional microfinance counterparts.

In Pakistan, the condition of people is pathetic as compared to other Muslim countries. Almost 80 percent of Pakistanis are poor according to the Economic Survey 2005-06 (defined as 'extremely poor', 'ultra poor', 'poor', 'vulnerable' and 'quasi-non poor'). The number of people in the lowest three of these income categories is over 36 million yet according to a USAID study, only 600,000 people in Pakistan received microfinance in 2005. Although this is significant growth from 60,000 in 1999, it leaves many people out. While some people not using microfinance are just not interested in it, many may opt out of conventional microfinance due to its reliance upon interest-based financing, prohibited by Islam as *riba* (Goud, 2007).

Apart from the banks, there are two notable Islamic microfinance institutions (IMFIs) in Pakistan: Akhuwat and Islamic Relief. This research paper takes an overview of functions and operations of Akhuwat in the country and attempts to see its contribution towards poverty alleviation in the country based on its past performance.

AKHUWAT OPERATIONS AND FUNCTIONS: AN OVERVIEW

Akhuwat was established in 2001 with the objective of providing interest free micro credit to the poor so as to enhance their standard of living. Akhuwat is dedicated to improving the lives of the poor; those who are financially abused, abandoned and disregarded by society.

Akhuwat has developed a unique mosque-centered structure. Islamic microfinance is dispensed by small interest-free charitable loans (qard al-hasan) with an administration fee of 5 per cent in a spirit of Islamic brotherhood. There is no funding from international donors or financial institutions. All activities revolve around the mosques and involve close interaction with the community. There are no independent officers and loans are disbursed and recovered in the mosque. It uses collateral-free group and individual financing based on mutual guarantees. Anecdotal evidence suggests that the fact that loans are disbursed in a mosque, also attaches a religious sanctity to the oath of returning it on time (Karim, Tarazi and Reille, 2008).

SUSTAINABILITY

A lot have been written on the importance of sustainability issues of MFIs. Immediate thing that comes in mind about sustainability is its financial aspect - operational self sufficiency and financial self sufficiency. Actually financial and operational sustainability is only one major dimension.

After seeing the Figure 1, Critics would argue that AKHUWAT is not operationally sustainable with the given standards. AKHUWAT is not covering 100% of its operational cost.

Although it is true in financial terms but there are some other dimensions of sustainability where AKHUWAT is performing better. These different dimensions of sustainability are:

1. Microfinance services for all living below the poverty line including the "extreme poor".
2. Interest free loans as a powerful tool against poverty.
3. The role of AKHUWAT is extending the helping hand and not doing business with poor.

FUTURE CAPITAL REQUIREMENTS

Figure 2 indicates that loan portfolio growth declines with the sharp decline of equity growth over the last 5 years. Constant growth in loan portfolio would be challenging for the akhuwat and need to be tackled in an effective manner.

COST STRUCTURE

Interest = Zero percent

Loan Processing Fee = Zero

Profit = Zero

Application Fee = Rs. 100 per application

Insurance Fee = 1% of loan amount (voluntarily)

CONCLUDING REMARKS

This research project recognizes Islamic micro-finance as an important component in poverty alleviation strategies. While conventional microfinance products have been successful in Muslim majority countries, these products do not fulfill the needs of all Muslim clients. Combining the Islamic social principle of caring for the less fortunate with microfinance's power to provide financial access to the poor has the potential to reach out to millions more people, many of whom say they would prefer Islamic products over conventional microfinance products.

This research paper undertakes a case study of Akhuwat, an Islamic microfinance organization operating in Pakistan. Critical financial analysis of Akhuwat indicates that it is providing its services for all living below the poverty line including the "extreme poor" and Interest free loans can be used as a powerful tool against poverty. Yet Loan portfolio growth of Akhuwat declines with the sharp decline of equity growth over the last 5 years that might pose some constraints on its financial stability in future. This challenge could be overcome by integrating Islamic microfinance with NGOs, NPOs (non-profit organizations), Zakah, Awqaf and with Takaful as well as with professional training and capacity building institutions in Pakistan to provide Islamic microfinancial services to the poorest of the poor under one roof. It will help to uplift the living standard of people and ultimately contribute towards the economic development and enriched prosperity of the country.

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TABLES & FIGURES

TABLE 1: OUTREACH OF ISLAMIC MICROFINANCE, BY COUNTRY

Region	No. of Included Institutions	% Female (Avg.)	Total no. of Clients	Total Outstanding Loan Portfolio (US\$)	Avg. Loan Balance (US\$)
Afghanistan	4	22	53,011	10,347,029	162
Bahrain	1	n/a	323	96,565	299
Bangladesh	2	90	111,837	34,490,490	280
Indonesia	105	60	74,698	122,480,000	1,640
Jordan	1	80	1,481	1,619,909	1,094
Lebanon	1	50	26,000	22,500,000	865
Mali	1	12	2,812	273,298	97
Pakistan	1	40	6,069	746,904	123
West Bank and Gaza	1	100	132	145,485	1102
Saudi Arabia	1	86	7,000	586,667	84
Somalia	1	n/a	50	35,200	704
Sudan	3	65	9,561	1,891,819	171
Syria	1	45	2,298	1,838,047	800
Yemen	3	58	7,031	840,240	146
Total		59	302,303	197,891,882	541

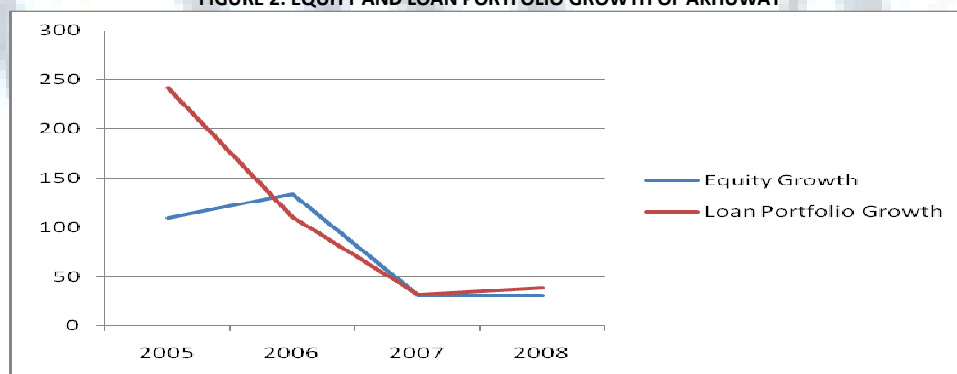
Source: CGAP Survey, 2007 as referred by (Karim et al., 2008)

FIGURE 1: OPERATIONAL SUFFICIENCY OF AKHUWAT



Source: Author's own compilation (Data taken from audited annual reports (2004-08) of AKHUWAT)

FIGURE 2: EQUITY AND LOAN PORTFOLIO GROWTH OF AKHUWAT



Source: Author's own compilation (Data taken from audited annual reports (2004-08) of AKHUWAT)

AN OBJECTIVE ASSESSMENT OF CONTEMPORARY OPTION PRICING MODELS

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ABSTRACT

There are several option pricing models available in the existing literature on financial derivatives. Most of them are numerically complex and difficult to comprehend. This paper is a literature review of the two most popular models, Binomial and Black-Scholes.

KEYWORDS

Option valuation models, Financial derivatives, Binomial, Black-Scholes.

SETTING THE CONTEXT

In the circuitous world of capital markets, options and measurements thereof are dependent on accurate mathematical estimates of fair price which are crucial for success. Many researchers prefer to use the traditional Black-Scholes model to price options. Most research projects deal with subjects that focus primarily on Black-Scholes, while occasionally discussing Cox-Ross-Rubinstein and other related models. Such models are based on informed assumptions. A common feature of these models is the assumption that, on a logarithmic scale, the distribution of returns (profits or losses) in the market is normal (Black-Scholes), something close to normal, or something that approaches normal in the limit (Cox-Ross-Rubinstein). Believers of "random walk"-proponents of the Efficient Market Hypothesis (EMH)—would argue that the assumption of normally distributed returns is justified by the Central Limit Theorem. Additionally, stock returns reflect the accumulation of large numbers of equally small, random movements. However, the fundamental question is "Do stock returns really follow the familiar bell-shaped curve of the normal distribution?"

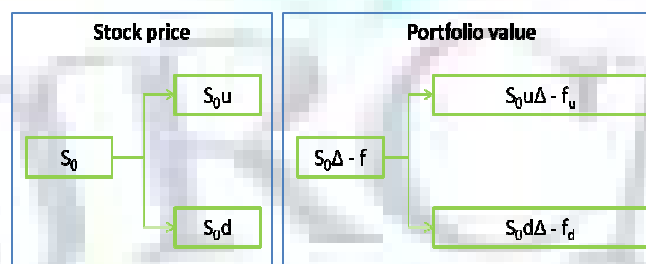
The study of option valuation models is an important consideration. Therefore, in this paper the objective is to undertake a study of the contemporary option valuation models.

In this paper, an overview of the two models which formed the groundwork for option valuation, i.e. the Binary option pricing model and the Black-Scholes model has been presented. This is then followed by an analysis which links the two models empirically using hypotheticalal data.

BINOMIAL OPTION PRICING MODEL

Cox, Ross and Rubinstein proposed a variant of this model in 1979. The model is based on certain assumptions, which are essentially straight forward and simple to understand. The first assumption is that the stock price (underlying) follows a random walk. A subsequent assumption which is a standard in a host of other valuations is that arbitrage opportunities do not exist. Further as the name suggests, there are only two possible outcomes for the stock price movement, up by a certain percentage or down by a certain percentage. A précis of the methodology is that it is possible to set up a portfolio consisting of some number of a particular stock and an option so that the value of the portfolio at the end of the time period is fixed, i.e. there is no uncertainty. Since, the portfolio carries no uncertainty, i.e. no risk about its value at the end of the period; it should earn only the risk free rate. Hence, we can calculate backwards to arrive at the option's price.

In the single period model, we consider a portfolio with long position in Δ shares. The portfolio also has a short position (sold) one unit of an option in the same stock. S_0 is the current stock price, S_{0u} is the stock price on the uptick and S_{0d} is the stock price on the downtick. Also, 'f' is the current value of the option. Equating the value at the end of the period for both uptick and downtick and simplifying, we get;



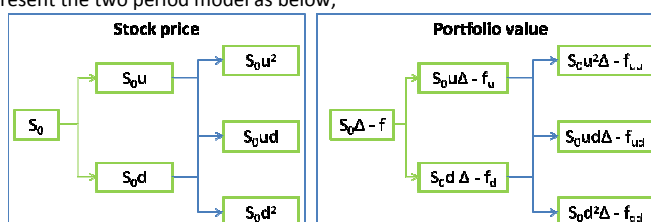
$$f = e^{-rT}[pf_u + (1-p)f_d]$$

where, the symbols have their usual meanings and

$$p = (e^{-rT} - d) / (u - d)$$

Where p is the portfolio value.

Similar to the single period model, we represent the two period model as below;



In this case, there is the second period which leads to 3 possibilities in the movement of the stock price as shown in the diagram. Extending similar logic as single period model, we simplify f as;

$$f = e^{-r\Delta t}[p^2f_{uu} + 2p(1-p)f_{ud} + (1-p)^2f_{dd}]$$

Now that we have introduced the single period and two period binomial models, we can extend the number of steps to make the valuation more realistic. However, the essence of the argument remains the same.

BLACK-SCHOLES OPTION PRICING MODEL

The Black-Scholes model is arguably the most popular option pricing model. It was first published in "The pricing of corporate liabilities" by F. Black and M. Scholes in the Journal of Political Economy, 1973.

The model makes several key assumptions like being able to borrow and lend at constant risk free rate and absence of transaction costs and taxes. Further, it assumes that the underlying asset follows a geometric Brownian motion and hence the changes in the stock price in a short period are normally distributed. In addition to these, the absence of dividends and the 'no arbitrage opportunity' sum up most of the crucial assumptions of the Black-Scholes model. As per the model, the value of the call option on a non-dividend paying stock is;

$$c = S_0 N(d_1) - Ke^{-rT}N(d_2)$$

and the value of a put call option on a non-dividend paying stock is;

$$P = Ke^{-rT}N(-d_2) - S_0N(-d_1)$$

Where

$$d_1 = [\ln(S_0/K) + (r+\sigma^2/2)T] / \sigma\sqrt{T}$$

$$d_2 = [\ln(S_0/K) + (r-\sigma^2/2)T] / \sigma\sqrt{T}$$

The symbols used in the equation above have their usual meanings. It is important here to note that N(d₁) and N(d₂) are cumulative probability distributions. Also, the distribution N(d₂) refers to the probability that in a risk free world, the option will be exercised.

THE TWO MODELS SIDE BY SIDE

Binomial		Black Scholes	
1	Flexible	1	Limiting in implementation
2	Finite number of steps	2	Equivalent to infinite number of steps
3	Discrete steps	3	Continuous process for stock price
4	Can value American options	4	For American, use Black's approximation
5	Better suited to value complexities	5	Not so suited to value complexities
6	Intuitive simplicity	6	Non-intuitive (differential equation)

One of the primary reasons the Black Scholes model continues to be the preferred model is speed. It supports calculating a large number of option prices in a very short time.

The assumptions of the Binomial Option Pricing model help simplify the algorithm/ mathematics significantly. However, as always, this simplification comes at the cost of sacrificing some real world scenarios. But that does not make the binomial option pricing model any less realistic. The output of the BOP model converges to that of the Black Scholes model as the number of periods in the model increases to infinity. This implies that the discrete-time Binomial Option Pricing model ultimately becomes identical to the continuous time Black-Scholes model. The BOP model, being the simpler one to comprehend and implement with its less binding assumptions, serves as an approximation to the Black-Scholes model.

Further, in contrast to the Black Scholes model, the BOP model can be used to price a wider range of options, e.g, pricing an American option whose underlying is a stock with irregular dividends payout. Unlike Black Scholes, Binomial Option Pricing models can value American Options because it is possible to check at every node the possibility of early exercise.

Again, in contrast to the Black Scholes model, Binomial Option Pricing model is relevant to value options whose underlying assets' prices follow distribution of returns other than lognormal. This can be achieved by suitably tweaking the values for 'u' & 'd' in the equations.

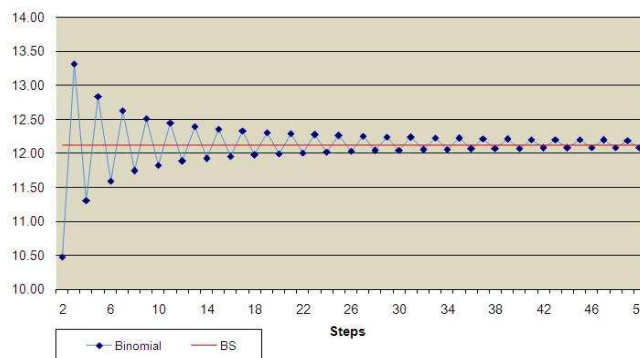
In order to improve the efficacy of the Binomial Option Pricing model, a trinomial method has been proposed. It is similar to the Binomial Option Pricing model with the addition of one more possible path. So, in the trinomial model there are 3 possible paths (Up, Down and Stable) at each node instead of two for binomial. As is intuitive, the trinomial model converges faster to the Black Scholes output than the binomial model.

CONVERGENCE OF BINOMIAL AND TRINOMIAL OUTPUT TO BLACK SCHOLES

In order to show the convergence of the binomial model output to Black Scholes output let us take some hypothetical data. Let us consider;

- Option type = European Put
- Current stock price (Underlying) = \$100
- Strike price = \$101
- Risk free interest rate = 5%
- No dividends
- Volatility = 30%
- Time to maturity = 2 years

Using this hypothetical data, let us see the behavior of the Binomial model vis-à-vis the Black Scholes. The option price suggested by the Black-Scholes for this data is a single value of \$12.1256. However, as per the definition of Binomial the value changes as per the number of steps that we chose for the iteration. The below chart plots the changing Binomial output for the above data with increasing number of steps. This output is the blue line in the chart. The constant Black-Scholes output (\$12.1256) is also given for reference by the red line.



As can be seen in the chart, the binomial output converges to the Black-Scholes output when the number of steps increases.

Number of steps	Black Scholes output	Binomial output	Absolute Difference
10	12.1256	11.8286	2.45%
15	12.1256	12.3597	1.93%
20	12.1256	11.9975	1.06%
25	12.1256	12.2640	1.14%
30	12.1256	12.0507	0.62%
35	12.1256	12.2232	0.80%
40	12.1256	12.0760	0.41%
45	12.1256	12.2005	0.62%
50	12.1256	12.0904	0.29%
100	12.1256	12.1165	0.08%
125	12.1256	12.1498	0.20%
150	12.1256	12.1235	0.02%
175	12.1256	12.1417	0.13%
200	12.1256	12.1264	0.01%

Also given above is the tabular representation of the output. It shows that when the number of steps is high (Say 200), the difference is only marginal (Around 0.01% in this case).

Number of steps	Black Scholes output	Trinomial output	Absolute Difference
10	12.1256	11.9975	1.06%
15	12.1256	12.0507	0.62%
20	12.1256	12.0760	0.41%
25	12.1256	12.0904	0.29%
30	12.1256	12.0996	0.21%
35	12.1256	12.2231	0.80%
40	12.1256	12.0759	0.41%
45	12.1256	12.2005	0.62%
50	12.1256	12.1165	0.08%

We also present similar values for the trinomial model for exactly the same set of data that we considered for binomial model. By definition, trinomial model is expected to converge to Black-Scholes faster than the binomial model. The table above presents exactly the same inference. Here at 50 steps the trinomial value is only 0.08% away from the Black Scholes value. As was seen earlier, at the same 50 steps, the binomial output was 0.29% away from the Black Scholes value. As is obvious and has been pointed numerous times, it would be gross oversimplification to prefer one model as superior to the others. As a quick summary, the Black Scholes model has inherent advantages like it being the more recognized model and being faster to calculate. On the other hand, the binomial (and by extension the trinomial) model is intuitive and easier to understand. The best part of all the chaos here is that on the average these models produce similar results. In addition there are at times scenarios which dictate a clear preference for a mode (For e.g. binomial to value American options).

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E-LEARNING: THE DIGITIZATION STRATEGY

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ABSTRACT

With revolution in information and communication technology (ICT), internet, digitization and establishment of world trade organization (WTO), the world economies are making a transition from tangible economies to intangible/service/knowledge economies. In order to develop and achieve excellence in this new economic set up it is imperative to find an edge in knowledge and overcome any competitive disadvantage on this parameter, for which it is necessary to have an access to the knowledge and information at global level. To this end E-Learning has emerged as tool which helps in having access to global knowledge without transcending the geographical boundaries to thwart the locational disadvantage in an effective and efficient manner. It creates competitive parity on existing knowledge with huge potential to develop competitive advantage. Since libraries, primary knowledge resources, are integral to E-Learning and academia, it has, therefore, become all the more important to digitize the knowledge resources and to create digital libraries. Digital libraries, with the aid of new and better information and communication technologies, have become institutional access points for digital knowledge resources such as online books/journals and special media collections and thus have taken central place in eLearning. Not surprisingly, as faculty and instructors have begun to adopt E-Learning strategies as a part of their teaching repertoire, the libraries are playing a key role in helping to find and organize resources to complement programs and courses and to provide support to students in their assignments. With this background an attempt has been made in this paper to educate academia about E-Learning the role of digital library in E-Learning.

KEYWORDS

Digital Library, E-Learning, Information and Communication Technology, Internet.

INTRODUCTION

Information and Communication Technology (ICT) revolution being witnessed for last couple of decades has impacted the way learners and educators acquire and deliver information and knowledge. Learners are not now facing the problem of paucity of information and knowledge or limited access to them but they are now flooded with information sources with easy access and online course content. ICT, through the use of Internet and Intranet, has made possible the online delivery of information and knowledge which has now become an integral part of the education and learning systems. In this form the delivery may be in structured, semi-structured or unstructured format. These developments, which form the core of E-learning, have revolutionized the learning and education systems by phenomenally increasing their scope and scale in a flexible, effective and efficient manner. ELearning, convergence of learning, digital repositories/library (DR) and ICT, by making information or knowledge accessible to users via digital or electronic interface technologies has reengineered and redesigned the learning and knowledge delivery processes. A promising direction in the current e-Learning strategies and activities points toward modern-day ubiquitous learning through the involvement of large-scale repositories of digitized knowledge in the learning processes. The creation of digital repositories/libraries, virtual libraries or electronic libraries and anywhere access through internet has made distance learning possible which is putting different learners and societies at competitive parity with each other. Thus eLearning, Internet and digital library have emerged as an opportunity to achieve learning and knowledge parity and overcome the competitive disadvantage of some over others. To this end, this publication is intended to discuss E-Learning and role of digital library in eLearning.

EMERGENCE OF ELEARING

Past few decades have witnessed educational system undergoing many changes to cater to the developments at global level vis-à-vis technology, social, economic etc. Some of the factors that lead to such changes include:

SOCIO CULTURAL: Seismic shifts have taken place in society in the past few decades which have dramatically changed the nature and structure of families, workplaces and a myriad of other aspects of human life. Society itself is transforming into knowledge society in which knowledge worker has pivotal role in development, progress and excellence. Such societies are becoming seamless mainly due to the advance in ICT.

TECHNOLOGY & ICT: Economies and societies world over have been rapidly transformed due to Technological advances which has heavily impacted the education system. This is overtly evident by the fact that the investment in technology by educational institutions is increasing besides the student-per-computer ratio has also improved over the last few years. The explosive growth in ICT and Internet usage have more than ever increased the technological adoption and obsolescence rate which further pushes faster advance in technological and innovative developments in future. Technology platforms such as the Internet have created tremendous opportunities for new businesses and educational institutions, ushering in a "Knowledge Economy", which is driven by knowledge, information and ICT.

GLOBALIZATION: Globalization has created an opportunity for the corporations and the employees to operate at global level. This has put a challenge and opportunity before the education and training system to equip the youth to compete in a superior manner in global economy. This has required the educational institutions to create a system which ensures that learners have access to the innovative ideas with practical exposure that can make economy of a country powerful. Corporations are also required to regularly train their human resource and keep their processes up to date in order to avoid obsolescence and irrelevance in today's ever changing global village. Employees also at individual level have to take care of their own development by taking advantage of the trainings offered by their companies as well as using their own time to develop skills to stay relevant in a global economy.

Apart from these macro level changes the other trends/changes, which are similar to those found by Twigg et al (1998), taking place currently at global level particularly in education sector, include:

- Growing number of students in lower as well as higher education is still continuing.
- Various types of students are asking for different type of education and different students bring different experiences with them

- Participation of women, older students, and students from minorities is growing.
- Work and study being combined shows an increasing trend, and this leads to a need for more flexible learning arrangements in which the campus or school building is no longer central to the educational process.
- There is a need and trend towards lifelong learning. Lifelong learning leads to an emphasis on "learning to learn", which is the mantra in knowledge economy where knowledge becomes obsolete at an ever-increasing rate, and knowledge workers need to be able to refresh their knowledge on a regular basis.
- Because of the heterogeneity amongst the students, there is a need to accommodate different learning styles, customization and alternative learning routes. Courses have to take more into account the different experiences and backgrounds of students.
- Higher education institutions are losing the monopoly in providing education, as companies and public bodies possess knowledge that can be reused for educational purposes, not only for in-house training (knowledge management) but also to offer to external markets.
- Education is under constant budgetary pressure, thus there is a need for more efficient and effective education.
- Students more and more are behaving like consumers who want to make informed choices about how and where they want to be educated, which implies students are no longer committed to one institution.
- Teaching staff is exhibiting more job-hopping behaviour than they did in the past.
- There are too many dropouts in the current educational system.

Twigg et al (1998), who analyzed the changing learning situation are of the opinion that ICT has the potential to offer a solution for at least part of the problems mentioned above.

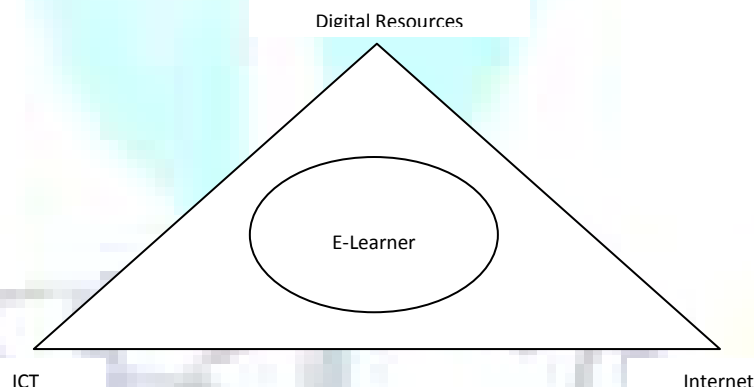
E-LEARNING

E-learning, online learning, virtual learning, distributed learning, network and webbased learning all refer to the educational processes that make use of ICT to intercede teaching and learning activities. Among these terms, e-learning, which comprises a lot more than online learning, virtual learning, distributed learning, networked or web-based learning, is the intentional use of networked information and communications technology in teaching and learning. E-learning includes all educational activities mediated by electronic devices whether carried out by individuals or groups, working online or offline, synchronously or asynchronously via networked or unconnected computers and other electronic devices. It includes the delivery of content via Internet, intranet/extranet, satellite broadcast, interactive Television, CD-ROM, DVD, audio and videotape, etc. E-learning covers a wide set of applications and processes, such as, web-based learning, computer based learning, virtual class rooms, and digital collaboration. It is a structured, interactive approach to learning and education where content, stored in digital form, is available and delivered online or in other e-devices.

Elliott Masie (2004) regards e-Learning as "the use of network technology to design, deliver, select, administer, and extend Learning". Piper Jaffray (1999) opines that e-Learning leverages various Internet and Web technologies to create, enable, deliver, and/or facilitate lifelong learning. As per CISCO Systems e-Learning is Internet-enabled learning. E-Learning is the delivery of content via all electronic media, including the Internet, intranets, extranets, satellite broadcast, audio/video tape, interactive TV, and CD-ROM, which makes it student oriented, active, open, collaborative and lifelong teaching-learning process. Moore and Ojedokun (2003) suggest that the anytime and anywhere characteristics of e-learning tools, and the fact that they are available from devices including desktops and notebooks, accelerate the productivity gains by making education more accessible. Indeed e-learning could be regarded as an improvement over the delivery of open and distance learning.

In today's fast-paced knowledge economies, E-Learning provides faster learning at reduced costs, increased access to learning, and clear accountability for all participants in the learning process. Organizations that implement e-Learning provide their work force with the ability to turn change into an advantage. E Learning is made possible by the union of digital knowledge/information resources, ICT and internet. They have been modeled in figure 1 as E-Learning triangle which depicts that digital resources, ICT and internet form the base or pillars of E-learning. Within this framework, content developers, content delivery in multiple formats, management of the learning experience, networked community of learners, and experts form the working components of E-learning. This implies that E-Learning attempts by nations and organization will succeed only if E-Learning triangle is appropriately developed and works in consonance with the learners.

FIGURE 1: E-LEARNING TRIANGLE



While ICT provides the necessary infrastructure/anatomy for E-Learning by way of electronic devices like computers, TV, satellite, CD-ROM, DVD, audio and videotape, etc., the internet provides the connectivity for interactive learning and online delivery of content. It creates the opportunity for web-based learning, computer based learning, virtual class rooms, and digital collaborations in real time across the globe with zero barriers to create competitive parity among nations, organizations and individuals. The Internet with its ability to level the learning field provides equal opportunity to all across the globe be it a high school student seeking assistance in some subject related questions or an employee who wants to improve upon his/her education by doing a relevant PG course e.g. MBA through distance education from a management institute/University. Individuals now have the power to learn in their choice time and at their own pace from their choice resources/institutes. Moreover, as the ongoing fast paced innovations and new developments in electronics and communication technology continue the memory/storage capacity, miniature, portability, reliability, versatility, flexibility, accuracy, efficiency and speed of electronic items improve at a faster rate, which coupled with the continuous improvements in bandwidth, video, and voice technology makes E-Learning all the more beneficial, user friendly, economical and more acceptable to users. This has created an ever increasing trend in demand for e-learning which is expected not only to sustain but to grow at an exponential rate.

Where as the Internet and electronic resources allow for the real-time performance, they are giving rise to new kinds of learning opportunities. This has also led to the emergence of new learning models ranging from 'formal' e-learning closely tied in to curriculum or courses, to more informal learning such as learners using the Internet to explore the topics of interest. They enable individuals to continuously improve by spending time on their deficiencies at their free will. This flexibility in E-Learning is provided mainly through digitization of knowledge and information sources which are then available to all with internet access anywhere any time. The digital form of knowledge and information stored in data bases are mainly comprised of digital libraries, which are much more than traditional libraries that used to store books, journals etc. They are set of electronic resources and capable to store, search, create and disseminate information. Digital libraries having diversified their functions are thus playing vital role in E-learning, research and education which creates a huge scope for their

establishment and transformation of traditional libraries into digital libraries. Since knowledge is stored in libraries forms core of learning thus it becomes imperative to understand digital library and its role in E-learning.

DIGITAL LIBRARY

Libraries store books, journals, magazines, dissertations, research reports, case studies, newspapers etc. in a very systematic and organised fashion. The storage in organized manner is must in order to make the storage, maintenance and retrieval easy and user friendly. In traditional libraries, searching and locating of the relevant information from the huge reservoir of knowledge is a major problem faced by the users. In these libraries, the organisation of the books is done by arranging the books primarily by subject, title, author and date, and accessed by following signs to the appropriate floor, room, bookcase, shelf, and spine-labelled book. This is comparatively a tedious task in this space age, where people have run out of time and want to accomplish their jobs effectively and efficiently (Ishtiaq & Rafi, 2006).

The digital library, a virtual world, is a venue for developing collaborative virtual situations that support shared work and shared "social play" (Benford et al., 2001). A digital library is a networked collection of electronic information resources which are diverse, dynamic and made up of different media (Adam et al., 2000; Wang, 1999). They are about information access. The term digital library is used less precisely and may refer to anything from a limited list of hotlinks to the entire content of the Internet" (Halliday et al., 1999). Sun Microsystems (2002) considers a digital library as the electronic extension of functions users typically perform and the resources they access in a traditional library. Miller (2002) argues that a digital library is based on the following two components:

- The commercially produced databases, electronic journals, and books and other electronic resources that are routinely purchased or licensed by a library for delivery via the library's interface to users both inside the libraries and remotely and for which library's funds are expended for their purchase or license;
- Those digital materials that are produced within the library or university and subsequently made available to users electronically.

Librarians see a digital library much as an electronic version of a traditional library (Xie & Wolfram, 2002), they consider it to consist of digital collections across subject matters. A computer scientist sees a digital library as a distributed and networked information system with attending databases and information services (Xie & Wolfram, 2002; Sharma & Vishwanathan, 2001). A computer scientist thinks of a digital library as a repository and interactively manipulative database system that provides access to scientifically useful data (Lynch, 1999). A user sees a digital library, collection of digital services and resources, as having the same accessibility as the World-Wide Web where an information source is only a click away (Xie & Wolfram, 2002). Wellman et al., (1996) see a digital library of the future in which software agents use principles of artificial intelligence (AI) to perform "monitoring, management, and allocation of services and resources." They define a digital library as a "community of information agents" that would retain most of the properties of the traditional library, but would perform them using intelligent software rather than human beings. Digital libraries have eliminated to a large extent the inconvenience caused by the traditional libraries, though it is assumed that they have the same basic purpose, functions, and goals as traditional libraries i.e., collection, development, management, subject analysis, index creation, provision of access, reference work, and preservation of the knowledge base, with some wider application and extensions. Digital libraries have some definite advantages over traditional libraries which motivate or force transition to them:

BOUNDARY LESS: The learners need not to visit physically digital library; people from all over the world can gain access to the same information, as long as an Internet connection and access is available.

ANY TIME AVAILABILITY: One of the major advantages of digital libraries is that learners can gain access to the information at any time.

MULTIPLE ACCESS: A number of users can access and use the same resources at the same time with equal efficiency.

STRUCTURED APPROACH: The more structured approach of digital libraries provide easy access to much richer content i.e. one we can easily move from the catalog to the particular book then to a particular chapter and so on.

INFORMATION RETRIEVAL: The user is able to use any search term belonging to the area of interest, title or phrase of the entire collection and get the list of probable collections. Digital libraries provide very user-friendly interfaces, giving clickable access to its resources.

PRESERVATION AND CONSERVATION: An exact copy of the original can be made any number of times without any degradation in quality.

SPACE: Whereas traditional libraries are limited by storage space, digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain them. When a library has no space for extension digitization is the only solution.

NETWORKING: A particular digital library can provide a link to any other resources of other digital libraries very easily; thus a seamlessly integrated resource sharing can be achieved.

COST: The cost of maintaining a digital library is lower than that of a traditional library. A traditional library must spend large sums of money paying for staff, book maintenance, rent, and additional books. Although digital libraries do away with these fees, it has since been found that digital libraries can be no less expensive in their own way to operate. Digital libraries can and do incur large costs for the conversion of print materials into digital format, for the technical skills of staff to maintain them, and for the costs of maintaining online access (i.e. servers, bandwidth costs, etc.). Also, the information in a digital library must often be "migrated" every few years to the latest digital media. This process can incur very large costs in hardware and skilled personnel.

According to Roes, (2001) "Digital libraries seem natural complements to digital learning environments. They are able to integrate the freely available information on the web with more formal literature for which increasingly consortium licences on electronic versions are arranged with publishers. These licences enhance and replace traditional collection development policies..... Much work done over the past decade in developing digital libraries will have an important payoff for education innovation. The main issue, of course is whether more active learning styles will become the norm, since many of today's courses are rather "self contained" nature in which educators present students with text to work through linear way and assessment is too often based on whether or not a student is able to produce the text prescribed by the teacher". The advancement of the ICT over the past decade has resulted in profound changes in the availability of knowledge and learning in digital form which helps learners to access wider choices of information sources. Today both learners and instructors need to have the ability to create, structure, locate, search, retrieve and use material in multimedia and digital forms. Neuman, (1997) notes that "there are few doubts about the potential of the digital library for providing unprecedented access to information and ideas. Wang (Wang, 2003) advocated that integrating a digital library into a learning environment requires considerable knowledge-building on the part of the organization involved. He suggested that the digital library should:

- Include all those learning resources that are relevant
- Classify the resources into logical categories
- Develop a knowledge vocabulary, including thesaurus
- Create Indexes and search mechanism
- Constantly refined the classification (subject) categories

Digital library offers some definite advantages in E-Learning which among others include:

- One reason for using digital libraries in E-learning is that it can store and manage large amounts of digital content such as full text, course materials, bibliographic databases, library catalogues, image and audio clips etc. Thus it provides an environment to bring together collections, services and people in support of the full life cycle of creation, dissemination and preservation of data, information and knowledge.
- Another reason to use digital libraries is that using various electronic tools, learners can search text materials and images easily and quickly, which can be applied broadly across all kinds of institutions. Advance intercommunication technology, sophisticated search engines, and affordable cost, large storage of digital content are the other reasons to implement a digital library in modern education.
- The library would allow learner to use electronic resources from anywhere, without even knowing where it is stored geographically.
- One copy of the documents could be viewed by any number of users simultaneously.
- It can be used for increasing course delivery for a large number of clients at a particular point of time.
- Study materials need never go out of print, and new editions can easily be created. One can carry several titles at once on a portable reader and, over time, build a personal library.

- It would be easy for non-specialist to use due to the simplicity of operation.
- Links to publisher's sites for full text journals.
- It provides and facilitate online and on demand enrolment, study and examinations,
- Search result will be delivered to an e-mail box to the user's choice.
- Protecting rare books that are rapidly deteriorating due to over use and poor storage conditions.
- It is cost – effective and cost-efficient for its ability of reuse.
- It provides faster learning, increased access, clear accountability and equal education for every body; the web is available on the desktop.
- It provides current information and helps in research work. To cope up with the advancements in technology, production of information in multidimensional forms, it became essential for a person to pursue additional knowledge at all times to keep him/her up-to-date in his/her field of interest. These factors are directing to the learning. The virtual conferences, collaborative work on projects, which are shared among institutions, exchange of useful material and experience among teachers provide up to date information for the research.

E-LEARNING ADVANTAGE

The benefits offered by the e-learning that are not possible with traditional textbook include:

Individualized learning — technology can enable a more personalized learning experience to help support independent learning — for example, students can elect when to take a test on materials they have been studying to progress at their own pace, or gather resources related to their own interests to build up a personal collection of learning materials.

Group learning — online learning can incorporate discussion forums or spaces for groups to share their learning experiences. There are online teachers forum, which includes teaching resources, information about using the library and online discussions. Such group areas can help learners in developing communication and team skills.

Virtual learning environments — online learning can include virtual learning environments, such as e-conferences or access to experts.

Learner support — e-learning can also incorporate advice, guidance, planning to help learners to negotiate and make meaning from the information available on learning pages.

Flexible study — in practical terms, e-learning enables provision which is oriented to the learner, online/offline, distance/campus, continuous/ interrupted.

Tools for teachers — online learning can also bring customizable resources closer to teachers and lecturers.

Anywhere, anytime, anyone: The growth of the World Wide Web, high-capacity networks, and high-speed desktop computers will make learning available to people 24 hours a day, seven days a week around the globe.

Cost savings: The biggest benefit of e-learning, however, is that it eliminates the expense and inconvenience of getting the instructor and students in the same place.

Timely access to information: Web-based products allow instructors to update lessons and materials across the entire network instantly. This keeps content fresh and consistent and gives students immediate access to the most current data. Information can be retrieved just before it is required, rather than being learned once in a classroom and subsequently forgotten.

Higher rate of retention: Since learners can customize the learning material to their own needs, they have more control over their learning process and can better understand the material, leading to a faster learning curve, compared to instructor-led training. The delivery of content in smaller units, called "chunks," contributes further to a more lasting learning effect.

Higher interactivity/collaboration: Teaching and communication techniques which create an interactive online environment include case studies, storytelling, demonstrations, role-playing, simulations, streamed videos, online references, personalized coaching and mentoring, discussion groups, project teams, chat rooms, email, bulletin boards, tips, tutorials, FAQs, and wizards.

Learner controlled: Technology has given the individual greater authority over the learning environment. Learning does not have to occur in a classroom. It may occur at one's own desk or the home.

Self Paced: An individual may proceed through a course or program as the information is fully comprehended. Learners can convert information to knowledge on their own timetable.

Uniformity of content: The information delivered can be consistent to all users, therefore reducing the possibility for misinterpretations.

CONCLUSION

The advancements in information technology have resulted in global village which is getting shrunk everyday. In this global village knowledge is emerging as the most important tool to achieve the goals of individuals, organizations and nations. This increased importance of knowledge warrants real time, replicable and same knowledge, available to all anywhere anytime. This demand has been addressed by the creation of digital library and E-Learning processes. In this paper an attempt has been made to highlight the role of E-Learning with special emphasis on digital library.

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FINANCIAL PERFORMANCE OF MILK UNIONS – A STUDY AT KARNATAKA MILK FEDERATION**DR. M. JEYARATHNAM****DIRECTOR****DEPARTMENT OF WOMEN'S STUDIES****BHARATIAR UNIVERSITY****COIMBATORE - 641 046****GEETHA. M. RAJARAM****ASST. PROFESSOR****DEPARTMENT OF MANAGEMENT STUDIES****REVA INSTITUTE OF TECHNOLOGY AND MANAGEMENT****BANGALORE - 560 064****ABSTRACT**

Dairying has played a prominent role in strengthening India's rural economy. It has been recognized as an instrument to bring socio-economic transformation. A symbiotic relationship exists between dairy farmers and the milk unions who process the raw milk collected from the farmers. To strengthen the recent gains in milk production, processing calls for new development initiatives and critical analysis of the financial performance of milk unions. Dairying must address itself to issues of profitability, efficiency, solvency, liquidity and turnover. Effective functioning of dairy cooperatives could translate into significant benefits to dairy farmers. Thus this article aims to investigate the financial performance of the milk unions under Karnataka Milk Federation (KMF) over a period of five years (2002-07). The financial analysis of the milk unions was done taking into consideration the ratios which are critical, as it would allow milk unions to capitalize on their strengths and exploit opportunities. The results of the study showed that only 31 percent of the milk unions had a good overall performance score. Also, an attempt is made in this article to identify the reasons for the discrepancies in the financial performance among the milk unions.

KEYWORDS

Dairy, dairy cooperatives, financial performance, profitability, ratios.

INTRODUCTION

India is the world largest milk producer since 1998-99. According to estimates of the Central Statistical Organisation (CSO), milk accounted for 68% of the total value of output from livestock. In terms of value of output, milk is now the single largest agricultural commodity in India.

Dairying is a secondary occupation for about 69 percent of India's farming community. It contributes close to a third of the gross income of rural households and in the case of those without land, nearly half of their gross income.

On the other hand, milk and dairy products are basic food items. Despite a marked slump in the consumption of milk and powdered skimmed milk in recent years, there has been no major change to the underlying strength of demand when viewed generally. While dairy industry manufacturers are able to benefit from this stable demand, they have to invest large sums in production and distribution facilities because they handle highly perishable raw materials and products. Dairy industry can be described as a business with relatively low industry risk, including stability of demand. Profitability at dairy industry manufacturers has remained at a low level compared to other food manufacturers due to such factors as the heavy burden of fixed costs and distribution costs. Moreover, recent hikes in the prices of imported raw materials have also been a factor in pressing earnings down. In addition to rising secondary raw materials, escalating power costs and distribution costs resulting from price increases for crude oil, dairy manufacturers are forced to take a variety of strategies in addition to cost cutting efforts for maintaining profits.

Dairy farming is much more industrialized today than in the past in terms of resources, technology, and organizational structure. Even on smaller operations, dairy farm managers are doing more than just making the production decisions directly related to the animals; they are managing labor and other inputs, and possibly making cost and marketing decisions. Prospects for continued expansion of milk production clearly exist keeping the competitiveness in mind. The financial performance of the milk unions describe the ability of dairy operations to meet short term obligations and to replace capital assets as needed and thus stay in business.

CHALLENGES OF THE DAIRY COOPERATIVES

Dairy cooperatives in general and milk unions in particular face three critical and interrelated challenges:

- First, cooperatives are no longer the only major players in our milk markets. The result is that the cooperatives are capturing an increasing share while the rapid growth of cooperative marketing has slowed.
- Second, today, cooperatives handle only about 17 per cent of the marketable milk surplus.
- Third, many dairy cooperatives need to substantially renew as also enhance their financial performance and professional skills to face the twin challenges of growth in market share and profitability.

In order to remain a part of the agricultural sector today and into the future, a constant effort is required to maintain competitive strength. Maintaining competitive strength today requires an appraisal of the financial results achieved by the milk unions.

IMPORTANCE OF DAIRYING IN KARNATAKA

Karnataka is one of the top ten milk producing states in India. The importance of dairying in Karnataka needs no emphasis in the given structure of the economy and distribution of population and labour force. Dairying is important also because of its substantial contribution to the state's income. Though agriculture is not the mainstay in terms of contribution to state income, it provides substantial employment. Agriculture contributes 19 percent to state's income and the employment in this sector is about 60.6 percent.

Karnataka Milk Producers Cooperative Federation (KMF) is the apex body formed by all the thirteen member unions to coordinate the growth of dairy activities at the state level. Every activity of KMF revolves around meeting one basic objective: 'Achieve economies of scale to ensure maximum returns to the milk producers, at the same time facilitate wholesome milk at reasonable price to urban consumers'.

Milk Unions of Karnataka produce sufficient quantity of milk for domestic processing. Bulk of milk procurement (47.52 %) is concentrated in large milk unions, medium sized milk unions had procured about 44.29 % and small-sized milk unions had procured 8.19%.

OBJECTIVE OF THE STUDY

To strengthen the recent gains in milk production, processing calls for new development initiatives and critical analysis of the financial performance of milk unions. Dairying must address itself to issues of profitability, efficiency, solvency, liquidity and turnover. Effective functioning of dairy cooperatives could translate into significant benefits to dairy farmers. Thus this article aims to investigate the financial performance of the milk unions under Karnataka Milk Federation (KMF) over a period of five years (2002-07).

METHODOLOGY

There are five major areas of financial concern in any business. These are; (i) the ability to service current debt obligations, (ii) the financial efficiency, (iii) the overall debt structure, (iv) profitability and (v) debt repayment capacity. To analyse the financial performance of the milk unions of Karnataka Milk Federation, the annual reports all the thirteen milk unions for a period of five years, 2002-2007 were taken into consideration. The critical ratios which tell about different facets of a company's finances and operations were calculated. The following are some of the more commonly used financial ratios in the financial analysis. They are Current ratio, Quick ratio, Working capital to sales, Total asset turnover, Inventory turnover, Net fixed asset turnover ratio, Equity turnover, Gross Profit margin, Net profit margin, Return on capital employed, Return on equity, Debt –Equity ratio and Long term debt to long term capital. Ratios are used to analyse trends and to compare the firm's financials to those of other firms. The data obtained was further analysed using Factor analysis. An attempt has been made here to use factor analysis to find and describe the underlying factors that determine the financial performance of the individual milk unions.

RESULTS AND DISCUSSION

The variables under study extend from return on capital employed (ROCE) to working capital to sales ratio involving 14 variables. Factor analysis attempts to combine these variables into a set of more comprehensive data. The components matrix of the fourteen ratios extracted are shown below in Table 1.

TABLE 1: SHOWING THE COMPONENTS MATRIX OF THE RATIOS

Ratios	Components				
	1	2	3	4	5
Return On Capital Employed	0.876	0.054	0.203	-0.104	-0.164
Net Profit Margin	0.78	0.251	-0.319	-0.2	-0.037
Operating Profit Margin	0.666	0.578	-0.037	-0.276	-0.04
Net Fixed Asset turnover	0.543	-0.433	0.368	0.203	-0.34
Gross Profit Margin	-0.107	0.805	-0.036	-0.194	0.128
Equity Turnover	0.415	-0.608	0.275	-0.111	0.377
Long Term debt to Long Term Capital	-0.124	0.594	0.694	0.222	0.15
Debt to Equity Ratio	-0.197	0.457	0.689	0.151	0.27
Return On Equity	0.543	0.08	0.554	-0.153	-0.106
Quick Ratio	0.447	0.235	-0.497	0.431	0.298
Total Asset Turnover	0.084	-0.24	0.217	0.631	0.169
Current Ratio	0.371	0.298	-0.379	0.614	0.232
Inventory Turnover	0.302	-0.423	0.096	-0.189	0.689
Working Capital to Sales	0.146	-0.019	0.104	0.484	-0.491
Extraction Method: Principal Component Analysis.					
a 5 components extracted.					

Source: Annual Reports of KMF

The variables are rotated using Varimax with Kaiser Normalization and the Rotation converged in 10 iterations. The logic of rotating the axes so as to maximize the variance of the new factor remains the same. In order to identify the natural groupings of variables, a rotation to an interpretable pattern for the loadings is done, in which the variables load highly on only one factor. The ability to rotate to improve interpretability is one of the advantages of factor analysis. If finding and describing some underlying factors is the goal, factor analysis may prove to be more useful.

Table 2 below is the rotated component matrix of the ratios under study. This is undertaken to identify the underlying factors that load on one factor. This analysis seems to reveal that the data is composed of five sub-scales: Profitability, Solvency, Efficiency, Liquidity and Turnover.

TABLE 2: SHOWING FACTOR LOADINGS OF THE RATIOS

Ratios	Factors				
	Profitability (1)	Solvency (2)	Efficiency (3)	Liquidity (4)	Turnover (5)
Operating Profit Margin	0.86	0.109	-0.235	0.198	-0.107
Return On Capital Employed	0.842	-0.008	0.327	0.072	0.168
Net Profit Margin	0.786	-0.272	-0.106	0.333	0.033
Return On Equity	0.614	0.32	0.292	-0.21	0.183
Long term debt to Long term Capital	0.059	0.947	-0.002	-0.009	-0.142
Debt to Equity Ratio	-0.047	0.899	-0.054	-0.069	0.011
Net Fixed Asset turnover	0.336	-0.073	0.781	-0.116	0.184
Gross Profit Margin	0.229	0.401	-0.606	0.125	-0.346
Working Capital to Sales	0.047	0.024	0.59	0.123	-0.376
Total asset Turnover	-0.256	0.224	0.516	0.338	0.207
Current Ratio	0.102	0.032	0.081	0.882	-0.08
Quick Ratio	0.185	-0.125	-0.046	0.851	0.035
Inventory Turnover	0.048	-0.041	-0.08	0.075	0.88
Equity Turnover	0.131	-0.088	0.294	-0.094	0.807
Eigen value	2.747	2.136	1.954	1.878	1.866
Cumulative %	19.618	15.257	13.957	13.411	13.331
Extraction Method: Principal Component Analysis.					
Rotation Method: Varimax with Kaiser Normalization.					
a Rotation converged in 10 iterations.					

Source: Annual Reports of KMF

Careful examination of these loadings has led to the following conclusions:

1. The data that load highly on factor 1 seemed to relate to Operating Profit Margin (0.860), Return on Capital Employed (0.842), Net Profit Margin (0.786) and Return on Equity (0.614). Hence factor 1 seemed to relate to profitability.

2. The data that load highly on factor 2 seemed to relate to long term debt to long term capital (0.947) and debt-equity ratio (0.899). Hence factor 2 seemed to relate to solvency.
3. The data that load highly on factor 3 seemed to relate to Net fixed asset turnover (0.781), Gross profit margin (0.606), working capital to sales (0.590) and total asset turnover (0.516). Hence factor 3 seemed to relate to efficiency.
4. The data that load highly on factor 4 seemed to relate to current ratio (0.882) and quick ratio (0.851). Hence factor 4 seemed to relate to liquidity.
5. The data that load highly on factor 5 seemed to relate to inventory turnover (0.880) and Equity turnover (0.807). Hence factor 5 seemed to relate to turnover.

With the identification of the group of ratios, the number of variables in each group, eigen value and the percent of variation and the cumulative percent of variation has been explained by each important variable like profitability, solvency, efficiency, liquidity and turnover in Table 3

TABLE 3: FINANCIAL PERFORMANCE VARIABLES OF THE MILK UNIONS

Sl. No.	Group of Financial Performance Dimensions	Number of variables in each group	Eigen Value	Per cent of Variation Explained	Cumulative Per cent of variation explained
1	Profitability	5	2.747	19.618	19.618
2	Solvency	2	2.136	15.257	34.875
3	Efficiency	3	1.954	13.957	48.832
4	Liquidity	2	1.878	13.411	62.242
5	Turnover	2	1.866	13.331	75.573
	Total	14			

Extraction Method: Principal Component Analysis.

Source: Data Analysis

The five groups of financial performance of the milk unions explain the performance to the extent of 75.57 per cent. The most important group of financial performance is 'profitability' since its eigen value and the per cent of variance explained by this factor is 2.747 and 19.618 per cent of variation respectively.

This is followed by financial performance variable namely, 'solvency' since its eigen value is 2.136 and the per cent of variation is 15.257 per cent respectively. The next important groups of financial performance are 'efficiency' and 'liquidity' since their eigen values are 1.954 and 1.878 respectively. The per cent of variation explained by these important dimensions are 13.957 and 13.411 per cent respectively. The least important financial performance measure is identified by the factor analysis is 'turnover' with the eigen value of 1.866 and with a per cent of variation at 13.331 per cent. It is concluded from the above analysis that profitability is the most important financial performance measurement variable, followed by solvency, efficiency, liquidity and the least important variable was found to be turnover.

Considering the loadings, the profitability factor scores of individual milk unions are multiplied with the respective eigen values to arrive at the profitability scores for each milk union. The profitability scores of the milk unions are given in Table 4.

TABLE 4: TABLE SHOWING THE PROFITABILITY SCORES OF THE MILK UNIONS, 2002-07

Milk Union	2002-03	2003-04	2004-05	2005-06	2006-07	Average
Bangalore	2.45	2.89	-0.34	0.96	0.33	1.26
Kolar	-1.09	-1.15	-2.51	1.89	-33.26	-7.22
Mysore	1.09	0.95	0.44	-0.49	-0.35	0.33
Mandya	5.57	10.77	1.13	-0.04	-1.06	3.27
Tumkur	0.9	1.05	-3.78	-1.49	1.8	-0.3
Dakshina Kannada	1.1	0.42	-0.2	-0.87	-1.05	-0.12
Hassan	-0.19	-0.02	-0.6	-0.32	-1.02	-0.43
Shimoga	-0.48	-0.19	-0.98	-0.36	-1.63	-0.73
Bijapur	-7.48	-5.53	-2.03	1.72	-0.58	-2.78
Gulbarga	-0.73	1.24	4.36	0	-1.17	0.74
Dharwad	1.07	-4.72	1.84	-2.36	-1.3	-1.09
Raichur-Bellary	3.84	1.58	-5.28	0.53	6.54	1.44
Belgaum	1.48	-0.05	-5.22	1.17	-1.07	-0.74

Source: Data Analysis

Improvement in the profitability rating of few plants can be attributed to decrease in processing cost, procurement cost, procurement transportation cost and selling and distribution cost. It can be observed that Bangalore Milk Union has maintained its profitability ratings over the period of five years. Kolar Milk Union has seen a sudden increase in profitability rating in the year 2005-06 with increase in gross profits, due to decrease in procurement transportation cost, purchase cost and cost of goods sold in the same year. Kolar Milk Union has declined in terms of profitability rating in the year 2006-07 mainly attributed to decline in gross profits, increase in procurement transportation cost and decline in return on equity. Milk Unions which declined in terms of profitability rating could be attributed to decrease in return on equity and increase in operating costs in terms of increase in processing cost and selling and distribution costs. The profitability of plants have declined further due to increase in purchase cost of milk in the year 2006-07.

Despite the decline in processing cost, the profitability rating of few milk unions has been affected in the year 2006-07 due to increase in milk purchase cost, administrative cost and selling and distribution costs. Similarly the solvency factor scores of individual milk unions are multiplied with the respective eigen values to arrive at the solvency scores for each milk union shown in Table 5 below.

TABLE 5: SOLVENCY SCORES OF MILK UNIONS, 2002-07 AND THE AVERAGE SCORES

Milk Unions	2002-03	2003-04	2004-05	2005-06	2006-07	Average
Bangalore	4.37	3.22	1.97	0.73	0.86	2.23
Kolar	1.11	0.4	1.28	-0.53	-62.45	-12.04
Mysore	-1.63	-2.79	-2.09	-1.37	-2.93	-2.16
Mandya	0.96	1.03	-0.18	0.47	-0.17	0.42
Tumkur	-1.78	-2.34	-1.86	-2.3	-2.13	-2.08
Dakshina Kannada	-0.48	-0.59	-0.3	0.18	-0.52	-0.34
Hassan	-0.91	-2.32	-2.69	-2.42	-1.08	-1.88
Shimoga	0.11	-1.17	-1.48	-1.87	-1.32	-1.15
Bijapur	2.97	2.59	2.34	1.84	0.81	2.11
Gulbarga	4.45	2.05	6.53	4.9	3.29	4.24
Dharwad	1.21	1.06	0.61	-1.64	0.16	0.28
Raichur-Bellary	-0.53	-1.34	-1.31	-1.81	-5.01	-2
Belgaum	2.15	0.54	-0.1	-0.34	-0.87	0.28

Source: Data Analysis

Gulbarga Milk Union has emerged as the most solvent milk union over the period of five years. This is due to the good debt equity ratio and a better long term debt to equity ratio. Mysore Milk Union, Tumkur Milk Union and Raichur-Bellary Milk Union have remained less solvent over the same period due to low debt equity ratio and lower long term debt to equity ratio.

The efficiency factor scores of individual milk unions are multiplied with the respective eigen values to arrive at the efficiency scores for each milk union shown in Table 6.

TABLE 6: EFFICIENCY SCORES OF THE MILK UNIONS, 2002-07 AND THE AVERAGE SCORE

Milk Unions	2002-03	2003-04	2004-05	2005-06	2006-07	Average
Bangalore	-1.08	-1.43	0.23	0.27	-0.51	-0.5
Kolar	0.98	1.2	1.41	0.72	38.14	8.49
Mysore	-0.86	-0.72	-0.85	-1.16	-1.05	-0.93
Mandya	4.63	6.02	3.34	1.36	2.12	3.49
Tumkur	0.25	0.23	0.72	0.6	-0.13	0.33
Dakshina Kannada	0.93	0.04	0.86	0.89	0.85	0.71
Hassan	-0.29	0.06	-0.14	-0.65	-1.45	-0.49
Shimoga	0.48	6.49	2.89	2.01	-0.87	2.2
Bijapur	0.18	-0.29	-0.73	-0.9	-0.26	-0.4
Gulbarga	-0.13	-2.35	-2.17	-1.93	-1.08	-1.53
Dharwad	-0.43	0.03	-0.66	-0.05	-0.68	-0.36
Raichur-Bellary	-3.98	-0.87	-1.13	-2.91	-6.76	-3.13
Belgaum	-1.34	-0.76	0.25	-0.7	0.1	-0.49

Source: Data Analysis

Mandya Milk Union has remained as the most efficient milk union. This can be associated with increased sales with lower working capital requirements. Increased investments in total assets have further enhanced the sales and added to the increase in gross profits of this milk union. Shimoga Milk Union too has been one of the efficient milk unions although in the year 2006-07, it has seen a small fall. This is due to increased investments in total assets and marginal decrease in sales. However the return on total assets in the form of sales could be realized in the years to come. Kolar Milk Union has emerged as the most efficient milk union in the year 2006-07, largely due to decrease in cost of goods sold, investment in total assets and working capital in spite of decrease in sales and gross profits. Bangalore Milk Union has ranked average in terms of efficiency. However it has improved its sales with only a marginal increase in working capital requirements and investment in total assets. Sales have grown at a faster rate than the investments in total assets. There has been an increase in gross profits in spite of an increase in cost of goods sold. In the year 2006-07, the sales have marginally declined with additional investment in total and especially in fixed assets; the efficiency of Bangalore Milk Union is likely to increase in the future.

The liquidity factor scores of individual milk unions are multiplied with the respective eigen values to arrive at the liquidity scores for each milk union in Table 7.

TABLE 7: LIQUIDITY SCORES OF MILK UNIONS, 2002-07 AND THE AVERAGE SCORE.

Milk Unions	2002-03	2003-04	2004-05	2005-06	2006-07	Average
Bangalore	1.39	0.87	-0.18	0.47	1.13	0.74
Kolar	0.98	1.42	0.37	-0.15	59.18	12.36
Mysore	1.88	0.79	2.31	6.81	4.17	3.19
Mandya	-0.87	-1.95	0.18	-0.38	0.55	-0.49
Tumkur	1.06	0.25	-0.07	1.55	1.23	0.8
Dakshina Kannada	-0.48	0.38	2.19	3.28	1.1	1.29
Hassan	-0.65	-2.69	-2.05	-1.79	-0.99	-1.63
Shimoga	-1.91	-1	-1.1	-2.05	-0.92	-1.4
Bijapur	-2.63	-2.5	-2.17	-1.72	-2.11	-2.23
Gulbarga	-4.33	-2.07	1.83	1.99	0.84	-0.35
Dharwad	-0.21	-0.26	0.78	-1	0.98	0.06
Raichur-Bellary	-0.99	-0.21	-1.37	-0.84	-4.42	-1.57
Belgaum	2.05	1.32	0.28	0.06	-0.05	0.73

Source: Data Analysis

Kolar Milk Union has been the most liquid milk union over the period of five years. The reason could be due to increased current assets in relation to current liabilities particularly in the cash and bank balances of this union. Kolar Milk Union has lower liquidity in 2004-05 due to increased current liabilities. Dakshina Kannada Milk Union has better liquidity position as compared to Kolar Milk Union during the same period due to increased current assets in terms of better cash and bank balances. In 2006-07, Kolar Milk Union is more liquid than Dakshina Kannada Milk Union because the current liabilities like sundry creditors, provisions and other liabilities have seen an increase for Dakshina Kannada Milk Union than Kolar Milk Union. Bijapur Milk Union has been the least liquid milk union as the current liabilities have been more than current assets all over the five year period.

The turnover factor scores of individual milk unions are multiplied with the respective eigen values to arrive at the turnover scores for each milk union as shown in Table 8.

TABLE 8: TURNOVER SCORES OF THE MILK UNIONS, 2002-07

Milk Unions	2002-03	2003-04	2004-05	2005-06	2006-07	Average
Bangalore	0.87	2.37	0.54	0.59	2.34	1.34
Kolar	-0.08	0.04	1.05	-0.84	-15.83	-3.13
Mysore	-0.94	-1.17	-0.78	0.38	-0.28	-0.56
Mandya	-0.66	1.62	1.61	1.87	1.82	1.25
Tumkur	-1.07	-1.45	-1.27	-0.88	-0.56	-1.05
Dakshina Kannada	0.85	1.22	1.61	1.76	1.31	1.35
Hassan	1.09	1.52	2.22	5.06	8.89	3.76
Shimoga	0.7	-5.05	-1.2	-0.21	0.86	-0.98
Bijapur	-0.28	0.06	-0.37	-0.98	-0.46	-0.41
Gulbarga	-1.01	-0.69	-0.68	-0.92	-0.8	-0.82
Dharwad	-1.68	-1.45	-1.72	-1.09	-1.53	-1.49
Raichur-Bellary	-1.53	-2.9	-1.16	-0.25	-1.9	-1.55
Belgaum	-0.46	-1.35	-1.12	-0.57	-0.45	-0.79

Source: Data Analysis

Bangalore Milk Union had a decrease in turnover in 2004-05 due to increase in purchase cost of milk and processing cost during that year. Also sales had not increased in relation to increased investment in equity. Kolar Milk Union had seen a steep fall in turnover during 2005-06. Increased investment in equity might not have been directed towards inventory investment thereby, leading to a decrease in sales. Mysore Milk Union had seen a steep rise in turnover during 2003-04. This is due to increased sales despite a decrease in equity investment and inventory investment.

Considering the average of overall scores achieved by these milk unions Table 9 describes the overall performance of the milk unions over a period of five years.

TABLE 9: AVERAGE OF OVERALL SCORE OF THE MILK UNIONS, 2002-07

Milk Unions	Scores
mandya	7.95
bangalore	5.06
dakshina kannada	2.89
gulbarga	2.29
mysore	-0.13
hassan	-0.68
belgaum	-1.01
kolar	-1.55
shimoga	-2.05
tumkur	-2.29
dharwad	-2.61
bijapur	-3.7
raichur bellary	-6.8
Grand Total	-0.2

Source: Data Analysis

It is striking that only four milk unions have good overall performance out of the thirteen milk unions. That is only 31% of the milk unions have performed well. Based on overall scores, Mandya Milk Union, Bangalore Milk Union, Dakshina Kannada Milk Union and Gulbarga Milk Union have emerged as the best milk unions in terms of profitability, efficiency, turnover and solvency. The remaining milk unions however showed poor performance in terms of profitability, efficiency, turnover and solvency.

SUMMARY OF FINDINGS

The financial performance of the milk unions under Karnataka Milk Federation is not sound with only 31 percent of the milk unions maintaining a good overall financial performance score. Increasing input costs have put pressure on milk unions to maintain profits. Two large milk unions combine 47.52 percent of the whole milk procured by the federation, while medium sized milk unions procured 44.29 percent and small milk unions procured 8.19 percent of milk. This favours strong price competition in the milk procurement price. Interestingly, 8 out of the 13 milk unions are located in the southern part of Karnataka, of them, only 38 percent of the milk unions have shown a good overall financial performance. 5 out of the 13 milk unions are located in the northern part of the State. Here, only 20 percent of the milk unions showed a sound overall financial performance. Milk unions under Karnataka Milk Federation usually focus on standardized low cost and low price mass market articles like milk and milk products. This results in a weak market position and limited financial resources for establishing international business activities.

CONCLUSION

Findings from this study point to significant differences in the resource base, in the structure of profitability, and in management practices among the milk unions. To conclude the reasons for the discrepancies and what should less financially efficient milk unions do differently in order to improve their future prospects needs to be addressed. Some of them could be the weak competitive position of a few milk unions when compared to large milk unions. Some of the milk unions stick to their traditional structure and the aforesaid problem remains unsolved. On other hand, some of the milk unions have transformed themselves by adopting new technology and innovative marketing plans and milk products.

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INVESTORS PERCEPTION TOWARDS INVESTMENT IN MUTUAL FUNDS**DR. R. NANDAGOPAL****DIRECTOR****PSG INSTITUTE OF MANAGEMENT****PSG COLLEGE OF TECHNOLOGY****COIMBATORE – 641 004****M. SATHISH****ASST. PROFESSOR****PSG INSTITUTE OF MANAGEMENT****PSG COLLEGE OF TECHNOLOGY****COIMBATORE – 641 004****K. J. NAVEEN****SR. RELATIONSHIP MANAGER****ICICI SECURITIES****TIRUNELVELI****V. JEEVANANTHAM****MANAGEMENT TRAINEE****COCA-COLA****CHENNAI****ABSTRACT**

The investment decision making process is a multi-faceted subject to change over a period of time. Mutual Funds have become an important portal for the small investors. The objectives of the study are to know investor's motivational factors, investment preference and problems faced by investors in Mutual Funds. The study reveals that 1) The motivational factors to invest in mutual funds are Portfolio diversification, Risk minimisation and greater tax benefits; 2) Lack of knowledge is the primary reason for not investing in mutual fund. It is concluded that the mutual fund business in Coimbatore is still in the growth phase.

KEYWORDS

Portfolio diversification, Risk minimization, Mutual Funds.

INTRODUCTION

The term investment is used to describe the process of investing money in shares, debentures, fixed deposits, gold, real assets, life policies, mutual funds and money market instruments. These outlets where the money is invested are known as investment assets. By investing, an investor commits the present funds to one or more assets to be held for some time in expectation of some future return in terms of interest (revenue) or capital gain.

Individual investors consider a number of factors before deciding to invest their funds in various securities involving varying degrees of risk and return. In the present economic scenario, the options available to them are different and the factors motivating the investors to invest are governed by their socio – economic profile including expected return and risk tolerance. In short, the investment decision making process is a multi-faceted subject to change over a period of time. An attempt has been made in this study to identify the perceptual factors which influence the investors to invest in mutual funds.

There are a number of investment opportunities available to an investor. Each of these investments has its own risk and return features. The proverb “never put all the eggs in the same basket” guides the investor to diversify the risk. Diversification refers to the process whereby an investor invests his funds in more than one investment opportunity. An investor must learn to analyse and measure the risk and return of the portfolio.

All investors may not be in a position to undertake fundamental and technical analysis before they decide about their investment options. Neither do they have the resources nor the expertise to do so. Instead of investing directly, the investors particularly, small investors may go for indirect investment through the mutual funds. Instead of becoming the share holder or bondholder of a company, these investors would become the unit holders of mutual funds. In almost all the capital markets throughout the world, mutual funds have gained a significant position.

The mutual fund industry plays a significant role in the development of the economy as well. Its buoyant growth leads to lower intermediation costs, more efficient financial markets, and increased vibrancy of the capital markets and higher local ownership of financial assets. If retail investment is directed through the mutual fund route, it will lead to greater wealth creation in the long run. Thus, the industry can be one of the causative factors for a healthy economy.

INDIAN MUTUAL FUND INDUSTRY

The mutual fund industry in India started in 1963 with the formation of Unit Trust of India, at the initiative of the Government of India and Reserve Bank. The history of mutual funds in India can be broadly divided into four distinct phases ? First Phase – 1964-87 Unit Trust of India (UTI) was established on 1963 by an Act of Parliament. It was set up by the Reserve Bank of India and functioned under the Regulatory and Administrative control of the Reserve Bank of India. In 1978, UTI was de-linked from the RBI and the Industrial Development Bank of India (IDBI) took over the regulatory and administrative control in place of RBI. The first scheme launched by UTI was Unit Scheme 1964.

Second Phase – 1987-1993 (Entry of Public Sector Funds) 1987 marked the entry of non- UTI, public sector banks, Life Insurance Corporation of India (LIC) and General Insurance Corporation of India (GIC) to set up their mutual funds. SBI Mutual Fund was the first non- UTI Mutual Fund established in June 1987 followed by LIC, which established its mutual fund in June 1989 while GIC had set up its mutual fund in December 1990.

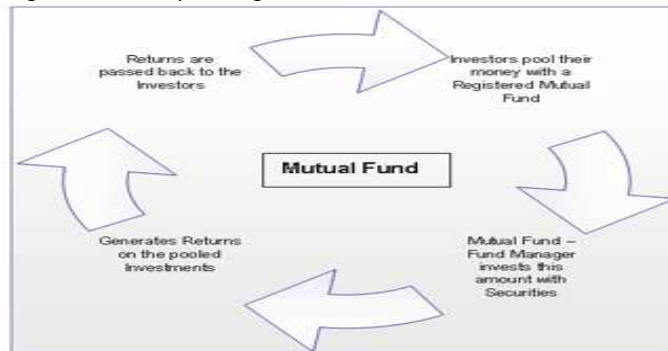
Third Phase – 1993-2003 (Entry of Private Sector Funds) With the entry of private sector funds in 1993, a new era started in the Indian mutual fund industry giving the Indian investors a wider choice of fund families. Also, 1993 was the year in which the first Mutual Fund Regulations came into being, under which all mutual funds, except UTI were to be registered and governed. The erstwhile Kothari Pioneer (now merged with Franklin Templeton) was the first private sector

mutual fund registered in July 1993. The number of mutual fund houses went on increasing, with many foreign mutual funds setting up funds in India and also the industry has witnessed several mergers and acquisitions.

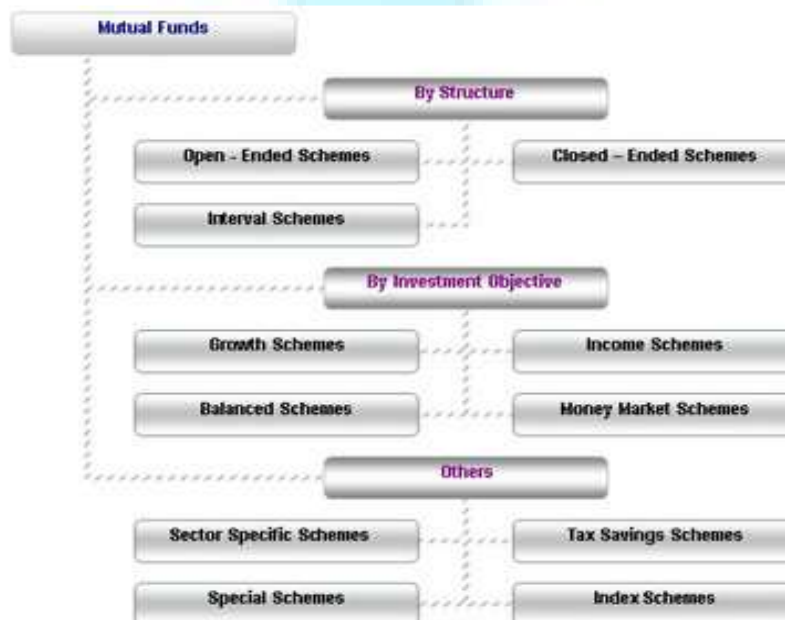
Fourth Phase – since February 2003 In February 2003, following the repeal of the Unit Trust of India Act 1963, UTI was bifurcated into two separate entities. One is the Specified Undertaking of the Unit Trust of India with assets under management of Rs.29, 835 crores as at the end of January 2003, representing broadly, the assets of u/s 64 schemes. (Assured return and certain other schemes).

OPERATIONAL FLOW OF MUTUAL FUND

The Indian mutual funds business is expected to grow significantly in the coming years due to a high degree of transparency and disclosure standards comparable to anywhere in the world, though there are many challenges that need to be addressed to increase net mobilisation of funds in the sector.



TYPES OF MUTUAL FUND



REVIEW OF LITERATURE

Investors are generally more careful while making investment decision and presence of rationality in every investor demands higher return at minimum risk but when markets are efficient it is not possible to gain abnormal returns. Risk is generally, associated with various applications differently but in common it means negative connotation such as harm or loss or some undesirable action. Risk expressed by Kaplan and Garrick (1981) demonstrates that risk involves a factor of uncertainty and potential loss that might be incurred.

Rajeshwari TR and Rama moorthy VE (2002) studied the financial behavior and factors influencing fund/scheme selection of retail investors by conducting factor analysis using principal component analysis, to identify the investors underlying fund scheme selection criteria, so as to group them into specific market segment for designing of the appropriate marketing strategy.

Although majority of investors who invest in mutual fund themselves are not clear with the objective and constraints of their investment but in addition to this most important critical gap that exist in this process is lack of awareness about presence of risk elements in mutual fund investment. The new marketing philosophy and strategies place special emphasis on recognition of customer needs in an effort to provide high level of quality services (Harrison, 2000)

Mustafa Soleimanzadeh in his article, "Learn how to invest in Mutual Funds" had discussed about the risk and return in mutual funds. He stated that the risk and return depend each other, the greater the risk, the higher the potential return; the lower the risk, the lower the expected return. Mutual funds try to reduce their risk by investing in a diversified group of individual stocks, bonds, or other securities. He concluded that the investment in stocks can get more return than mutual funds but investment in mutual funds the risk is lower. Mutual funds are great for funding retirement plans and investors that don't have the time or energy to consider individual stocks.(2006)

Kum Martin in his article, "Basics about Mutual Funds" had discussed about different types of mutual funds. He stated that the equity funds involve just common stock investments. They are extremely risky but can end up earning a lot of money. Fixed income funds are government and corporate securities. Fixed income funds offer fixed returns and the risk associated with these funds is very low. Balanced mutual funds are a combination of bonds and stocks. He concluded that the low risk in investment will not earn a lot of returns. (2007)

Mutual fund managers have to use various investment styles depending upon investor's requirement. Most of the empirical evidences have shown that mutual fund investor's purchase decision is influenced by past performance (Patel, et al. 1992).

Research study by (Jones et al, 2007) has proved that a negative correlation exists between advertisement and fund quality. A common investor may expect that mutual fund should opt strategies that have been documented to produce superior returns in the past instead they follow to select portfolios that don't deviate markedly from market benchmarks (Lokonishok, Shleifer and Vishny, 1997).

OBJECTIVES OF STUDY

- To Analysis the Perception of investors on various investment options
- To analysis the Motivational Factors of Mutual Fund investors
- To study the why the investor are not ready to invest in Mutual Funds

RESEARCH METHODOLOGY

RESEARCH DESIGN

The research is built on a Descriptive research design as the objective of the research is to describe the reasons behind investing in Mutual Funds among the various schemes in the Mutual Fund Industry and other than Mutual Funds.

SAMPLING METHOD

Here, in this research, simple random sampling method is used in order to get the survey results from the investors through which we have to formulate the research result with the further processes of the research. This study was conducted in Coimbatore district. In Coimbatore district there are around 50 share broking offices (including franchisees). Since the number of Investor into the mutual fund is not known, Therefore 103 investors were interviewed based on the convenience of the researcher on their living environment.

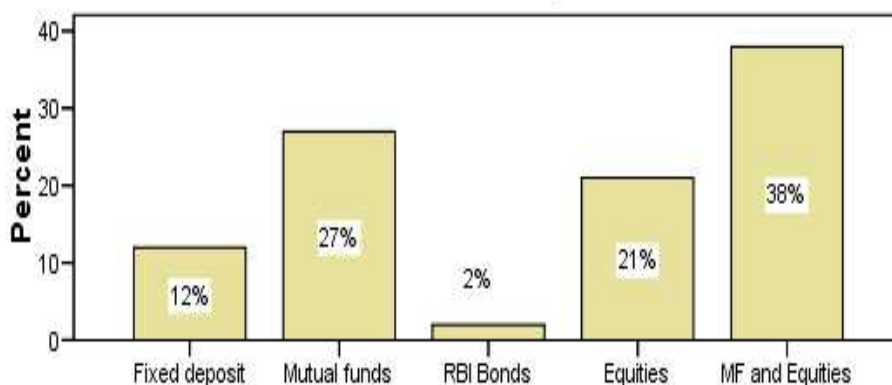
DATA COLLECTION

The primary data with the help of interview schedule were collected from various investors. The primary data was collected from both the male and female respondents themselves who are engaged into the investment in mutual funds. Secondary data is collected from company websites, company fact sheets, magazines, brochures, standard text books, from various publishing articles, and internet websites.

ANALYSIS AND INTERPRETATION

VARIOUS INVESTMENT TOOLS

FIGURE: 6.1 INVESTMENT TOOLS CURRENTLY INVESTED



It is clear that 38 % of respondents have invested in both Mutual fund and Equities, 27% of respondents have invested in Mutual funds, 21% of respondents have invested in Equities, 12% of respondents have made investments in fixed deposits and only 2% of respondents have invested in RBI bonds.

REASON FOR CHOOSING THE VARIOUS INVESTMENT TOOLS

TABLE: 6.2 INVESTMENT TOOLS CURRENTLY INVESTED

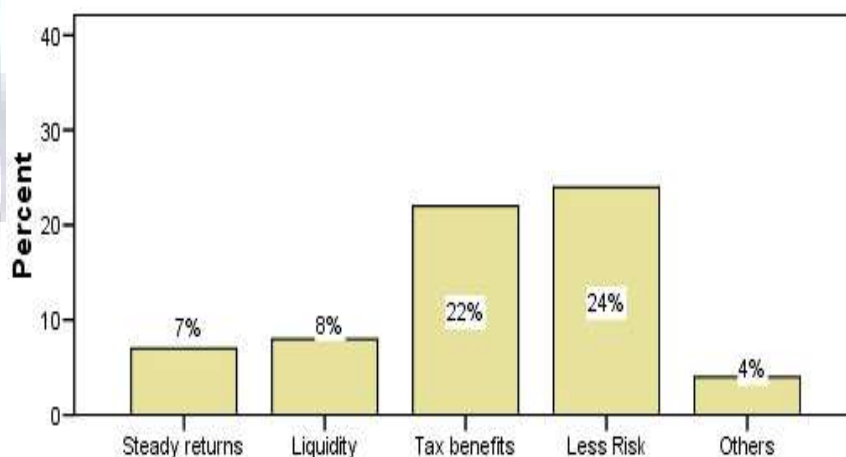
Reason for Investment	Mean Rank
Tax Benefits	3.18
Returns	1.54
Liquidity	3.16
Savings	2.16
Others	4.96

Source: Primary Data

It is clear from Table 4.2 that among 103 Investors majority of the investors gave first rank to the reason returns. The reason of savings has got second rank. Investors gave third position to the reason Liquidity. The Reason of tax benefits secured fourth place and the reason others has got fifth place from the investors.

PERCEPTUAL REASONS TOWARDS SELECTING MUTUAL FUND

FIGURE: 6.3 PERCEPTUAL REASONS TOWARDS SELECTING MUTUAL FUND



It is clearly inferred that among 103 Investors 65% of investors have invested in Mutual fund, out of 65% investors 24% respondents have stated that their reason for investment is lesser risk, 22% of investors have stated tax benefit as the reason for investment. 8% of investors have stated liquidity as the reason and only, 7% of investors have invested because of liquidity. Hence it can be concluded that the majority of investors have invested due to lesser risk.

Hypotheses

Ho: Tax benefits, Returns, Liquidity, Savings and others all the reasons have same ranking among the investors.

H1: Tax benefits, Returns, Liquidity, Savings and others all the reasons have unique ranking among the investors.

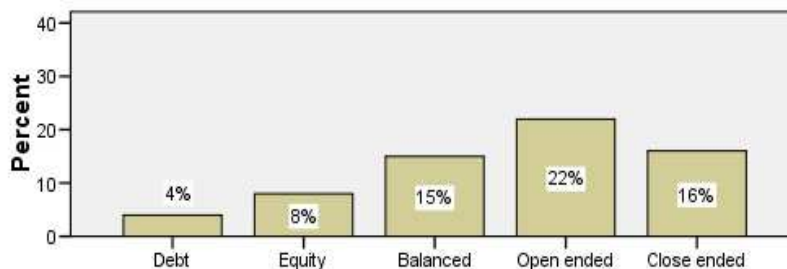
TABLE 6.3 CHI SQUARE STATISTICS

N	103
Chi Square	269.472
DF	4
Asymp Sig.	0.000

From the table 4.3 it is clear that the significant value is less than the Level of Significance (0.05). Hence the null hypothesis is rejected. It can be concluded that Tax benefits, Returns, Liquidity, Savings and others all the reasons have unique ranking among the investors.

PREFERRED TYPE OF MUTUAL FUND

FIGURE: 6.4 PREFERRED TYPE OF MUTUAL FUND



Among 103 Investors, 65% of Investors have invested in Mutual funds, among them 22% of Investors have invested in the open ended scheme, 16% of investors have invested in the close ended scheme, 15% of investors have invested in balanced scheme, 8% of investors have invested in equity scheme and only 4% of Investors have Invested in debt Scheme, Hence it indicated that the majority of investors have invested in open ended Scheme.

FACTORS THAT MOTIVATES INVESTORS TO INVEST IN MUTUAL FUND

TABLE 6.5 MOTIVATORS TO INVEST IN MUTUAL FUND

Motivators	SA	A	N	DA	SDA	Total Score	Mean Score	Rank
Greater tax benefits	13	42	40	3	5	356	3.56	3
Greater Liquidity	12	33	49	7	2	346	3.46	6
Investment for shorter duration	8	31	38	22	4	318	3.18	7
Steady returns	12	41	32	15	3	350	3.50	4
Return better than FD	20	34	26	16	7	348	3.48	5
Diversification of portfolio	24	49	23	5	2	388	3.88	1
Minimization of risk	24	43	27	9	0	382	3.82	2

Source: Primary data

(SA – Strongly Agree, A – Agree, N – No Opinion, DA- Disagree, SDA- Strongly Disagree)

It could be seen from Table 4.21 that Diversification of portfolio was the top most factor that motivates investor to invest in mutual fund. Minimisation of risk was ranked the next factor that motivates investor to invest in mutual fund. Greater tax benefits secured third position among overall factors that motivates mutual fund investment. Steady returns were the Fourth important factor to invest in mutual fund as pointed out by the investors. In the view of the sample investors the factor return better than fixed deposit has received fifth rank. Investors have pointed out Liquidity and investment for shorter duration as the least motivating factor respectively.

FINDINGS AND RECOMMENDATION

A majority of investors have stated that lack of knowledge as the primary reason for not investing in mutual fund. The second foremost reason for not investing in Mutual fund is the difficulty confront by investors in selection of schemes.

Diversification of portfolio, Minimisation of risk, greater tax benefits were the top most factor that motivates investor to invest in mutual fund respectively.

Regarding the reason for investing majority of the investors gave first rank to Returns. The reason of savings got second rank from Investors. Liquidity has got third position to the reason of investment. The Reason of tax concession secured fourth and other reasons has got fifth place.

The relation is stronger between External advisor of the Investors and Scheme of investment in Mutual Fund as the contingency coefficient is closer towards 1(0.760). It reveals that the external advisor of investor influence the scheme of mutual fund investment.

From the study it was clear that the majority of investors are in the age group of below 30 yrs. The majority of the investors are male investors. Regarding the educational qualification of the investors the majority of the investors are graduates.

From the study it was clear that the majority of investors are employed in private sector. Regarding the income of the sample investors the majority of the investors are earning rupees 10001 to 15000 and the income of investors does not influence the frequency of investment.

The study shows that the majority of the investors have purchased their mutual fund directly and the investor's educational qualification has no impact on selection of external advisor.

RECOMMENDATION

Provision for Class Room training for the new investors to eradicate lack of knowledge and some investment tips can also be given to the investors during the session by the Mutual Fund Promoters.

Investment advisors / External advisors should update themselves with new investment schemes in market as well as other schemes to make sure that the information delivered to the customer is accurate.

The medium of communication should be simplified (region specific, language specific etc) to accommodate even rural investors.

Customers generally make a call to the respective branch for some problems or general queries, a customer can save the money by dialing on the toll free number. It gives a feeling to the customer that company cares for them.

AMCs should continuously design suitable schemes to meet the triple needs of safety, greater tax benefits and steady returns

CONCLUSION

The present study analyses the investors' attitude towards mutual fund investments in Coimbatore city. Both the primary and secondary data were used in this study. The primary data was collected from the existing individual investors, who have invested on mutual funds in Coimbatore with the help of a structured interview schedule. It is concluded that the mutual fund business in Coimbatore city is still in the growth phase. So, concentrated efforts are needed for its success. The success depends upon professional competence of fund manager's track record, efficient administrative system, introducing innovative schemes with steady returns and tax concession.

SCOPE FOR FURTHER RESEARCH

The present study is confined to the selected mutual fund investment scheme only. An analysis is undertaken from the point of view of the investors who invest their money in mutual funds. The study also includes the opinions of the investors on the various aspects such as scheme of investment, duration of investment, factors that motivates investors to invest in Mutual Fund, reason for selection of Mutual fund and reason for not selection of mutual fund.

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BUSINESS IN GEMSTONE POLISHING: AN EMERGING INDUSTRIAL TRAINING & ENTREPRENEURSHIP OPTION FOR INCLUSIVE GROWTH IN EASTERN INDIA

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ABSTRACT

Western India's contribution to business and exports of gemstones and diamond industry is a boon for the country. This heritage trade can also be replicated in the states of eastern India, including Odisha. Due to availability of gemstones in the state; it can equip the youths with industrial training provided by the ITI's encapsulate in to a course module; giving them 'merit certificates' for self employment and employment in the highly skilled category. This in the greater run shall create inclusive growth and capital for the state, breaking the monopoly market of a few in the domestic trade, creating a comparative pricing of products and services. It can literate the potential customers technically too.

KEYWORDS

Diamond, Gem Stones, International Trade, Lapidary, SEZ (Special Economic Zone).

PRELUDE

India is the place for gemstones and jewellery, known since time immemorial. Kings and queens of ancient India reflected their royalty through storage of precious stones. These precious jewels were not only famous in India but around the globe. Liberalization and globalization has made it a part of elegance and attire of our society. Marketing trends have boosted and countless small jewellery shops have emerged, along with brand names and chain of retail shops etc.. Tanishq of India, a brand operated by Tata Sons is a paradigm in this business. Many corporate players are stepping in to this trade in domestic retailing and exports too.

DIAMOND

As a highly prized gemstone diamond has been cherished throughout the ages in the history of mankind. Because of its brilliant, adamantine luster, transparency and hardness, diamond has been a highly valued gem in the domain of the gemstones. Black diamonds, low-grade, flawed stones, 'bortt', and 'carbonade', are of industrial value and used extensively for polishing the surface of metals, minerals, etc. and in gem-cutting. Its most important industrial use is in cutting edges of drills which are indispensable in modern exploration and mining of minerals. Like graphite, diamond consists entirely of carbon atoms. It is the difference in arrangement of the atoms that gives the two minerals their entirely different properties. In ancient time India has acquired great fame as a source of diamonds, all the celebrated stones of antiquity being the produce of its mines, but the reputation has died out since the discovery of the diamond mines in Brazil and Transvaal; at the present time production has fallen to a very low output. Even so late as the times of Emperor Akbar, diamond mining was a flourishing industry because the field of Panna. The localities noted in history as the chief diamond centers were Bundelkhand (for 'Panna Diamonds'); districts of Kurnool, Cuddaph, etc., in Andhra Pradesh State (containing the 'Golconda Diamonds'); and some localities of central India such as Sambalpur (Odisha), Chanda, etc. The diamondiferous strata in all cases belong to the Vindhyan system deposits. A certain proportion of diamonds were also obtained from the surface-diggings and alluvial-gravels of the rivers of these districts. Two diamond bearing horizons occur among the Upper Vindhyan rocks of Central India: one of these Panna region is a thin conglomerate band separating the Kaimpur sandstones from Rewa series. The diamonds are not indigenous to the Vindhyan rocks but have been

assembled as rolled pebbles, like other pebbles of those conglomerates, all derived from the older rocks. The original matrix of the gem, from which it separated out by volcanic rocks, associated with the Bijawar series, some of which have been mapped recently. The dykes of basic lava that have penetrated the formation are supposed to be the parent-rock of the diamonds of India. The celebrated "Golconda" diamonds were mostly derived from a conglomerate mainly composed of the rolled pebbles of these dykes. The 'Koh-i-noor', 186 carats, and the 'Pitt', 410 carats, are among the most famous diamonds produced by India. (Wadia, 2010)

CRAFTSMANSHIP AND MAKING OF JEWELLERY

Jewellery making was a traditional business, inherited by a goldsmiths or Sonars, a clan of people dedicated to jewellery making. This trend of a single family jewellery shop has shifted to multiple numbers of branded outlets, co-creating brands and business, distributed in the supply chain. It provides huge opportunity for prices and innovative designs. Indeed, the emerging trends have shown various career opportunities in the field of jewellery design. But today the industry is facing shortage of skilled labours and trained people.

PRODUCT DEVELOPMENT

In fact, the refining process of jewellery is important. As it adds value from its crude stage to the final product stage, the price tags of the product become higher. Kohinoor diamond is admired for its size, cutting and finish worldwide. The Golconda mines, spread over the border of Maharashtra and Andhra Pradesh, once produced the largest, finest and the only diamonds the world knew. Years later, the Golconda mines were abandoned and are believed to be exhausted. And India disappeared from the map of diamond roughs production. Ironically, though, it has emerged as the largest importer of roughs and the largest exporter – 70 percent by value and 85 percent by volume – in the world's polished diamond market. (Singh, 2011) But a recent find by the mining giant Rio Tinto promises to change this. During drilling and prospecting at Bunder in Madhya Pradesh in 2004, the company had discovered a web of pipes, which it claims could hold the biggest find in the world in the last 10 years. (Rath, 2007) Therefore it is the refining process which needs special attention and focus, and ultimately the industry trained workforce with hands on experience. Gemstone polishing transforms a worthless piece of stone to a beautiful piece of artifact and gives a price tag. Thus gemstone polishing has emerge as a emerging career option, which can be imparted in the Industrial Training Institutes-ITI's, developing course modules like other trades. This can also be given to cater to the market demand like the fitter trade, welding trade and electrical trade etc. given for requirements of the industry.

BOOMING GEMSTONE INDUSTRY

Gems and jewellery form an integral part of Indian tradition and is related to the legacy passed from one generation to another. The components of jewellery include not only the traditional gold but also diamond and platinum accompanied by a variety of precious and semi-precious stones. It is seen that the Indian gems and jewellery sector is expected to grow at a CAGR of around 13 per cent during 2011-2013, coupled with private sector initiatives. Similarly as per the credit rating agency named Crisil, the diamond industry in India is predicted to remain stable during 2010-11 due to improved prices and steady demand. Moreover, gems and jewellery exports from India are expected to grow by 30-35 per cent in 2010-11 quotes 'Gem and Jewellery Export Promotion Council' (GJEPC). It is due to the demand in the international markets.

INDUSTRY STRUCTURE AND INDIA

This industry and market is highly dominated by unorganised players. But the increase in consumer income and economic prosperity, has carved a roadmap for the future of organised retail in India and international market. Needless to say that, in a bid to enhance market strategy, a gems and jewellery special economic zone (SEZ); sprawling over a 40 acres, with an investment of US\$ 441.1 million is being planned to be set up by Gold Souk-a jewellery mall developer. Gold Souk company plans to have residential apartments named Gold Souk City, apart from having gems and jewellery manufacturers from Thailand, Malaysia, Indonesia and Dubai will open their units in India.

Early studies have proven an inferred resource of 27.4 million carats of diamonds. Industry sources say this translates to an annual value of roughs in the region of \$ 300 million, assuming a life span of 15 years for the mine.

Over the years India has emerged as the world's workshop for cutting and polishing diamonds. An estimated 850, 000 workers toil away in Surat and other centers producing diamonds for use in precision industrial equipment and jewellery. Trade figures reveal India exported INR 1, 09,971 crores worth of cut and polished diamonds in calendar 2010. That's 65 percent of the total value of gems and jewellery exports from India. Despite the recession and despite exports and manufacturing units hard hit, diamond exports grew at a steady clip – 4.2 percent in financial year 2009 and 28 percent in financial year 2010. Significantly, gem and jewellery exports accounted for 17 percent of the country's total merchandise exports estimated at INR 8, 35,264 crores. The official worldwide monitor of the industry – the Kimberly Process Certification Scheme (KPCS), in its global summery for 2009 said India produced a meager 9,317 carats of diamonds worth \$ 1.66 million. Most of these are sourced from the public sector National Mineral Development Corporation (NMDC) mines at Panna in M.P. In the financial year 2010 Indian manufacturing units imported nearly 150 million carats roughs valued around INR 42,500 crore, 60 percent of these roughs being sourced through Belgium. Without any doubt India is the largest importer of roughs by a wide margin.

INDIA'S MARKET SHARE AND EXPORTS

INDIA BEING THE WORLD'S LARGEST DIAMOND CUTTING AND POLISHING CENTRE IN THE WORLD, IT REQUIRE TRAINED YOUNGSTERS TO ENHANCE PRODUCTIVITY ADDING VALUE TO THE ARTIFACTS FOR THE INTERNATIONAL MARKETS: India accounts for 60 per cent value share, 82 per cent by carats and 95 per cent share of the world market by number of pieces. In India Surat is India's diamond processing hub, contributing to over 80 per cent of the country's diamond processing industry; with annual revenue of around US\$ 13.03 billion. India is the third largest consumer of polished diamonds after the US and Japan, and is one of the largest exporters of gems and jewellery India is the diamond polishing capital of the world. It is becoming the fastest growing market in the world. Branded jewellery is turning to become the fastest-growing business segment in domestic sales, expected to grow at 40% per annum, to the tune of \$2.8 billion by 2012 and exports expected to grow from \$15.5 billion (2005) to over \$29 billion (2012).

A KPMG report released in 2006 on the Indian gems and jewellery trade projected that worldwide jewellery sales would rise from \$ 146 billion to around \$ 230 billion in 2015. With rising sales of alternative luxury goods and introduction of synthetic diamonds, the report predicts a slowdown from growth rate of 5.2 percent CAGR till 2005 to 4.6 percent in the 2010 – 2015. Amongst the slowest growing segments would be diamond jewellery at around 3.3 percent. A major reason for the possible slowdown is the looming shortage of roughs, concedes. It is no wonder that the polishing and cutting industry in India wants the government to ensure that Indian units have the first rights of purchase for the Bunder roughs.

In the present context the global costume jewellery and accessories market is estimated at US\$ 16.3 billion. Out of that India exports appx. US\$ 53 million. From US\$ 16.3 billion since period last it rose to US\$ 23.5 billion during April-November 2010. Here it registered 38.25 per cent growth quoted 'Gem and Jewellery Export Promotion Council (GJEPC)'. The export of coloured gemstones stood at US\$ 19.16 million at a growth rate of 23.85 per cent in November 2010; as compared to US\$ 15.47 million. During April-November 2010, US\$ 177.16 million worth of coloured gemstones were exported. Similarly rough diamond exports stood at US\$ 620.95 million, and cut and polished diamond exports posted a growth of 52.76 per cent, with US\$ 16.4 billion worth of exports during April-November 2010.

For instances, export to the US hogged a lion's share earlier. But not any longer, as India and China's local jewellery buying is on the role with increased purchasing power. By 2015, China with 13 percent and India 12 percent of the world's jewellery consumption will together emerge as a market equivalent to that of the US's share of 26 percent, predicts the KPMG report. Given the difficulties of sourcing roughs by the cutting and polishing trade, it is not surprising that the development at Bunder is being watched with great interest.

INDIAN CRAFTSMANSHIP AND GOVERNMENT INITIATIVE

India's traditional strengths made India significant in the global gems and Jewellery business. Though not having 'scientifically trained and certified skilled manpower', India has traditionally highly skilled and low-cost craftsman on manufacturing and polishing of jewellery and diamond. Government is also working to formulate norms to meet international compliance code for manufacturing.

In order to open new avenue for bullion trader community, the recent strategic tie-up between Bombay Bullion Association (BBA) and Indian Commodity

Exchange Ltd (ICEX) has harness huge investment. It also associated the potentials of small unorganised players and provided multiple delivery centers across the country by leveraging on MMTC's and BBA's pan-India network, strengthening the delivery infrastructure of Indian markets. India government is boosting the industry formulating new rules.

INDUSTRIAL TRAINING IN GEMS CUT AND POLISH

The process of cutting and polishing gems is called **gem-cutting or lapidary**, persons called lapidarist. Normally rough gemstone materials are lightly hammered to knock off from the stone. This process is called cobbled. All gems are cut and polished by progressive abrasion using finer grits of harder substances. In fact, diamond is the hardest naturally occurring substance. For cutting softer gemstones silicon carbide—a manmade compound of silicon and carbon with a Mohs hardness of 9.5 is widely used. Other compounds like cerium oxide, tin oxide, chromium oxide and aluminum oxide etc. are also used.

LAPIDARY TECHNIQUES AND TRAINING

Several common techniques are used in the lapidary work. They are sawing, grinding, sanding, lapping, polishing, drilling and tumbling. By using these techniques, gemstones are typically shaped into one of several familiar forms given below. These forms are cabochons, faceted stones, beads and spheres, inlays, intarsias and mosaics, cameos and intaglios etc..

As an example in the case of cabochons, one of the simplest lapidary norms, a stone can be smoothly rounded and polished on top. It can be relatively flattish or flat or slightly rounded on the bottom. This form of cutting is often used for opaque or translucent stones. Coloration and patterning provide major interest in such stones. Cabochon cutting or capping, is often performed by simply holding the stone in the fingers. Similarly in Cameos and Intaglios are carved with portraits in stone or seashells. Cameos are raised portraits, while intaglios are carved down into the surface of the material. Both typically take advantage of different colored layers of material. The finest cameos and intaglios have traditionally come from Italy—usually shell or Germany—usually of agate.

FIRST GEM TESTING LABORATORY IN INDIA

The first gem testing in India was set up in 1971 by the Gem & Jewellery Exporters Association. This gem testing laboratory is a service organisation working for the benefit of Indian gem industry, and is a turning point in the history for its contribution to scientific development in the field of gemmology. The Laboratory is also open to the general public. It also offers service to customs department, income tax and police etc. This is located in the heart of the gemstone market in Bombay, Zaveri Bazar. Till date more than 50,000 gemstones have been certified.

GEMOLOGICAL EDUCATION AND EMERGING LOCUS OF CERTIFICATION

The Gem Testing Laboratory was subsequently recognized by CIBJO—apex trade organization of gem trade in the world. GII's Gem Testing Certificates are of international standard and valid across the globe. It provides credibility to Indian gem industry, which foster growth of exports from India. Since the science of gemstone started in India, exports started booming. Gemmological education indirectly gave fillip to export of gemstone from the country.

GII started the Research and Developmental activities as early as in 1976. Since then it covered applied and pure science, study on gemstone and their properties, with a view to improve the quality of gemstones. GII was recognized as an R & D Laboratory by the Department of Science and Technology, Government of India. Subsequently they were recognised as Scientific Industrial Research Organisation (SIRO) by the ministry of science and technology, Government of India in 1998.

TRUST IS THE KEY TO BUSINESS: QUALIFIED EXPERTS ARE NEEDED

This business of gem and diamond is in a nascent stage of business. This trade is susceptible to utter disbelief in the buyers. Some business dealer sale synthetic, treated/enhanced diamonds and gemstones, instead of High Pressure High Temperature (HPHT) diamonds, hiding the quality.

Unless these pricy products are not identified with the help of qualified expertise and state-of-the-art equipments, it is not possible to get detail knowledge of the gemstones. Many scientific methods are there to identify the quality of gemstones and diamonds. It is seen that D-Scope microscope known as gemological microscope is routinely used in laboratories. It is designed to utilize the variety of illumination techniques, which helps us to investigate the internal microscopic world of gem stones. A lot of information can be extracted from general observations under a gemological microscope. It is used to determine whether a gem is natural or synthetic. Through these tests it can detect frosted crystals, dissolved silk in ruby and sapphire caused by heat treatment. Besides it can also read oil in fractures of an emerald indicating clarity enhancement and colour concentration in cracks and pits of jade as an indication of dying.

None the less identification is also done through FTIR (Fourier Transform Infrared Spectroscopy), Raman Spectrophotometer, UV Visible Spectrophotometer, Fluorimeter, Diamond View, Diamond Sure etc. for identification of Treatments, Synthetics, Simulants etc. in Diamonds and Gemstones.

CREATION OF HUMAN CAPITAL FOR INCLUSIVE GROWTH

Bombay has all along been economically progressive for its natural location; being close to west; shipping trade and commerce. Similarly Surat grew up with business in gem and diamond trade for it's proximity to Mumbai.

Western India's contribution to exports of gemstones and diamond is a paradigm for other states to emulate. Never the less, this trade can be transplanted in the states of eastern India for alleviating the economy, including poorest state of Odisha which is filled with minerals and Gem stones. This can happen by training and developing a work force highly skilled in the arena of gemstone and diamond processing or lapidary techniques. If lapidary knowledge is imparted with hands on experience in the ITI category providing industrial training by ITI's in Odisha it can create a magic economy. The academic experts have to design demagogy and pedagogy, course modules to provide 'merit certificates' like any other trade in ITI. It can develop self employment and employment opportunities in India and abroad. Specialized advanced programmes in the levels of Diploma engineering and Degree engineering are required for the purpose of augmenting entrepreneurship and medium industry promotion in Odisha. The role of the state technical university is inevitable in this aspect. State university geology and geography departments inclusion in this drive is highly essential. More than 3Lakhs or skilled and semi skilled workforce are involved in the gemstone polishing units at different hubs in India.

PLATINUM : THE WHITE GOLD

Platinum has been discovered in Odisha. Highly promising deposits of platinum ore have been found in the laterites of Bhubana – Barapada region of Dhenkanal and Keonjhar districts, respectively. This discovery has been made by Directorate of Mines and Geology. The National Physical Laboratory (NPL) has determined the metal content to be 220 to 520 grams per tone of ore, which is stated to be the highest recorded value of platinum occurring in nature in the world. This rich grade of deposits is also commercially viable. Platinum is used as a catalyst in the exploration of hydrocarbons and in the electrical and pharmaceutical and chemical industries. Odisha possesses about 95 percent of India's ultra basic rocks which are primary sources of chromium, nickel and cobalt. The platinum ore deposits occur in 450 square km area which is only one sixth of the 3000 square km of laterite rocks in Odisha which has been surveyed. Barapada, Damphidi, Madanpur, Khad, Kabahali and Pathrapada have platinum ore deposits. Unfortunately in the region extensive laterite slab cutting is going on which may reduce the platinum reserves, hence laterite stone cutting should be banned. (Sinha, 2008)

Clever imitation blended with imagination can create innovative art forms acclaimed globally. Art of lapidary has to be planted in the minds of youngsters wanting to grow in life, understanding the market forces. This ultimately shall create inclusive capital for the state, create human architects, break the absolute monopoly of few in the business, creating a level playing field for competition in pricing jewellery, gemstones and diamond etc. It can literate people.

GEMSTONES AVAILABILITY IN ODISHA

Quality of gemstones is determined by its natural origin, beauty, durability, uniqueness, rarity, hardness, and chemical resistance. Occurrences of diamond are associated with the gravel beds of Mahanadi particularly with river island 'Hirakud' in Sambalpur district. Other gemstones are mostly localized in Garnulite belts of Eastern Ghats, while others are found in Deoghar-Pallahara-Mahagiri group of rocks of Deogarh districts. They are associated with iron ore super group, Quarternary sediments and gravel beds of Mahanadi, where garnet, topaz, cat's eye occur. Odisha also produces emerald, ruby, sapphire, aquamarine, cheliodor, chrysoberyl, alexandrite, tourmaline, zircon, moon stone, amethyst, smoky and quartz. (Mishra, 1995)

They occur in Anugul, Sambalpur, Deoghar, Jharsuguda, Bolangir, Sonapur, Boud, Kalahandi, Nawapada, and Rayagada districts. All these districts are located in northern, western and central Odisha and costal districts of the state lack in gemstone deposits. (Sinha, 2008) At present Odisha is one of the leading producers of gemstones in the country and the mining, production and sale of gemstones in Odisha are controlled by Odisha Mining Corporation, Government of Odisha.

Details of deposits of precious and semi-precious stones in Odisha as follows:

OCCURRENCES

1. **Anugul District** Magarmukan – jhilli of Nuagaon.
2. **Sambalpur District** Charbhathi – Beldihi, Bagdhapa – Tabloi, Meghpal – Ranchipada and Budido
3. **Deoghar District** Palsama and Jharposi
4. **Jharsuguda District** Bagdihi
5. **Bolangir District** Chunchepali – Antaria, Ghumsar – Dehli, Miribahal – Tentelkhunti, Saraibahal- Suklimuri and Naktamunda – Siali
6. **Sonepur District** Badmal – Mursundi and Banika – Sonepur.
7. **Boudh District** Boudh – Ramgarh and Kantamal – Mammunada.
8. **Kalahandi District** Jillingdhar – Hinjilibahal, Orhabahala- Urharanga, Ghatpara – Sirgiharan, Sirajapali – Tundia and Banjipadar – sargiguda
9. **Nawapada District** Sardhapur – patialpada, Kantamal – Babebir Amera Damjaha-Burhaparen – Mantmitarai
10. **Rayagada District** Paikadakulguda, Irkubadi – Tarhama & Kairaghati – Karanjgurha
11. **Khandamal District** Bargochha and Belghar

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A COMPARITIVE STUDY BETWEEN HOTEL GOLD & NIRULA'S – PANIPAT CITY**DR. PUJA WALIA MANN****PROFESSOR & HEAD****DEPARTMENT OF MANAGEMENT****PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY****PATTIKALYANA – 132 102****MANISH JHA****ASST. PROFESSOR****DEPARTMENT OF MANAGEMENT****PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY****PATTIKALYANA – 132 102****ABSTRACT**

Hotels are establishment that provides lodging for a short period of time. An accommodation, in a hotel room is complemented by a bed, a cupboard, a small table and an entertainment aid has lately been replaced by rooms with ultra modern facilities, including Air Cooled & Climate control features. Some hotels may even provide additional guest facilities such as a restaurant, swimming pool, fitness center, business center, childcare, conference facilities and social function services. Keeping in mind all the above features a study was conducted in the city Panipat to know about the preference of the guest towards city's two most prominent hotels i.e Hotel Gold & Hotel Nirula. Authors have tried to analyze various parameters based on which hotels attract and retain their guest. The technique of data collection is through structured questionnaire. Statistical tools used for analyzing the data are Chi – Square.

KEYWORDS

Guest, Hotel, Satisfaction, Service.

INTRODUCTION TO INDUSTRY

Hotels are establishment that provides lodging for a short period of time. An accommodation, in a hotel room is complemented by a bed, a cupboard, a small table and an entertainment aid has lately been replaced by rooms with ultra modern facilities, including Air Cooled & Climate control features. Some hotels may even provide additional guest facilities such as a restaurant, swimming pool, fitness center, business center, childcare, conference facilities and social function services. Rooms in a Hotel are usually identified by numbers to allow the guests to identify their room. Some hotels often complement meals and refreshment as a part of a room and board arrangement. In countries like United Kingdom, hotels are governed by law to serve food and drinks to all guests within certain specified hours, to avoid this requirement it is however not uncommon as some private hotels are not subject to this requirement. However, in countries like Japan, capsule hotels provide a minimized amount of room space and shared facilities.

SECTOR OUTLOOK – CONTRIBUTION TO THE ECONOMY

Combining unparalleled growth prospects and unlimited business potential, the industry is certainly on the verge towards being a key player in the nation's changing face. The hotel and tourism industry's contribution to the Indian economy by way of foreign direct investments (FDI) inflows were pegged at US\$ 2.24 billion from April 2000 to November 2010, according to the Department of Industrial Policy and Promotion (DIPP)¹. India's hotel pipeline is the second largest in the Asia-Pacific region according to Jan Smits². He added that the Indian hospitality industry is projected to grow at a rate of 8.8 per cent during 2007-16, placing India as the second-fastest growing tourism market in the world. Governments have taken Initiatives like massive investment in hotel infrastructure and open-sky policies are targeted towards the propelling growth in the hospitality sector.

THE INDUSTRY CAN BE CLASSIFIED INTO FOUR SEGMENTS

5- Star and 5- Star Deluxe Hotels. Mainly situated in the business districts of metro cities are considered very expensive and cater to business travelers and foreign tourists.

Heritage Hotels. Normally characterized by less capital expenditure but greater affordability also includes running hotels in palaces, castles, forts, hunting lodges, etc.

Budget Hotels: These hotels mainly cater to domestic travelers who favor reasonably priced accommodations with limited luxury. They are characterized by special seasonal offers and good services.

Unclassified: Generally low-priced motels spread throughout the country. Their selling policy is to price their services low so as to make it affordable.

OTHERS CLASSIFICATIONS OF HOTELS

- Tree house hotels
- Bunker hotels
- Cave hotels
- Capsule hotels
- Ice and snow hotels
- Garden hotels
- Underwater hotels

OTHER UNUSUAL HOTELS

- The Library Hotel in New York City (USA) is uniquely made such that each of its ten floors is assigned one category from the Dewey Decimal System.
- The Burj al-Arab hotel in Dubai, United Arab Emirates, built on an artificial island, is structured in the shape of a boat's sail.
- The Jail hotel Löwengraben in Lucerne, Switzerland is a converted prison now used as a hotel.
- The Luxor, a hotel and casino on the Las Vegas Strip in Paradise, Nevada, United States due to its pyramidal structure.
- The Liberty Hotel in Boston used to be the Charles Street Jail.

THE TOP PLAYERS IN HOSPITALITY SECTOR INCLUDE THE FOLLOWING³

- ITC Hotels
- Indian Hotels Company Ltd. (The Taj Hotels Resorts & Palaces)
- Oberoi Hotels (East India Hotels)
- Hotel Leela Venture

- Asian Hotels Ltd.

¹<http://www.ibef.org/industry/tourismhospitality.aspx>

²Regional Managing Director, Intercontinental Hotels Group (IHG) Asia Australasia

³http://www.cci.in/pdf/surveys_reports/tourism-hotel-industry.pdf.

CHALLENGES FOR HOSPITALITY INDUSTRY

1. Shortage of skilled employees: The Biggest challenge that's plaguing the hospitality industry is the unavailability of quality workforce in various skill levels. The hospitality sector faces failure in retaining good professionals.
2. Retaining quality workforce: Workforce Retention through training and development in the hotel industry is a problem because attrition levels are too high. Main reasons for this are unattractive wage packages. Though there is boom in the service sector, most of the hotel graduates are joining other sectors like retail and aviation.
3. Shortage of rooms: The hotel industry is facing severe shortage of rooms. It is estimated that the current requirement is of more than 1,50,000 rooms. Though the new investment plan would certainly add up 53,000 rooms by 2011.
4. Intense competition and image of India: Of Late the industry is witnessing heightened competition with the arrival of new players, new products and new systems. Competing from neighboring countries and wrong perceptions about Indian tourism constrained the growth of tourism.
5. Customer expectations: India is emerging as a destination on the global travel map, and expectations of customers are rising. Hotels have to focus on customer loyalty and repeat purchases.
6. Manual back-end: Though most reputed Hotel chains have IT enabled systems for property management, reservations and almost all the data which actually make the company work are filled in manual log books or are simply not tracked.
7. Human resource development: Services required in the Hotel and Tourism industries are highly personalized, and no amount of automation can substitute for personal service providers. However India is focusing more on white collar jobs than blue collar jobs and the shortage of blue collar employees will pose various threats to the industry.

HOTEL INDUSTRY IN INDIA

India has seen tremendous boom in Hotel Industry over recent years. Hotel Industry is linked to the tourism industry and the growth in the Indian tourism industry has fuelled the growth of Indian hotel industry. The boon in Indian hotel industry is complemented by the thriving economy and increased business opportunities. With the arrival of low cost airlines and the associated price wars have given domestic tourists a host of options. The 'Incredible India' campaign and the newly launched '*Atithi Devo Bhavah*' (ADB) campaign have also helped in the growth of domestic and international tourism and consequently the hotel industry. Recently government has taken steps to boost travel & tourism which have somehow benefited hotel industry in India. Potential investments in tourism infrastructure are essential for the hotel industry to achieve its potential. Upgradation of national highways connecting various parts of India had opened further avenues for the development of budget hotels in India. Taking advantage of this opportunity Tata group and another hotel chain called 'Homotel' have entered this business segment.

LEADING PANIPAT HOTELS

Hotel Gold
Hotel My India
Hotel Nirulas
Hotel Maharaja

HOTELS PROFILE

HOTEL NIRULAS⁴

Nirula's, well-known name in the hospitality industry, had a small beginning. The Family came to Delhi in 1928, The Nirula brothers before going into the Hotel and Food Service Industry tried their hand at various professions which included running a pharmacy outlet, optician shop and a photo studio. However, they soon realized the necessity of good eating-places in and around New Delhi. Though completely novice to this business, they began "HOTELINDIA" in 1934 at Connaught Place with 12 rooms, a restaurant with a bar license. The introduction of the 'Chinese Room' Restaurant and beginning of espresso coffee for the first time in India by Nirula's was done in the 1950's. They came with two specialty restaurants, La Boheme a modern restaurant serving Hungarian food & Gufa an Indian specialty restaurant. With the passage of time the company ventures into the fast food business with the Pastry Shop, Snack Bar, Hot Shoppe and Ice Cream Parlour. The Potpourri restaurant with the first Salad Bar in India was also opened during this period.

HOTEL GOLD⁵

Hotel Gold in Panipat is a 3 star hotel located on the busy NH-1 offering all the modern facilities of a luxury hotel with an artistic outdoor ambience, well maintained lawn for parties and function and an ample parking space.

⁴<http://www.nirulas.com/PanipatHotel>

⁵<http://www.hotelgoldpanipat.com>

CONSUMER PREFERENCE

The concept that customers prefer one product or one service over another is not new. The ability to identify and measure the elements of such preference decisions with any accuracy and reliability has become available recently. The ability to choose one thing over another with the anticipation that the choice will result in greater satisfaction, greater capability or improved performance.

Preference refers to the set of assumptions relating to a real or imaginary "choice" between alternatives and the possibility of rank ordering of these alternatives, based on the degree of happiness, satisfaction, gratification, enjoyment, or utility they provide.

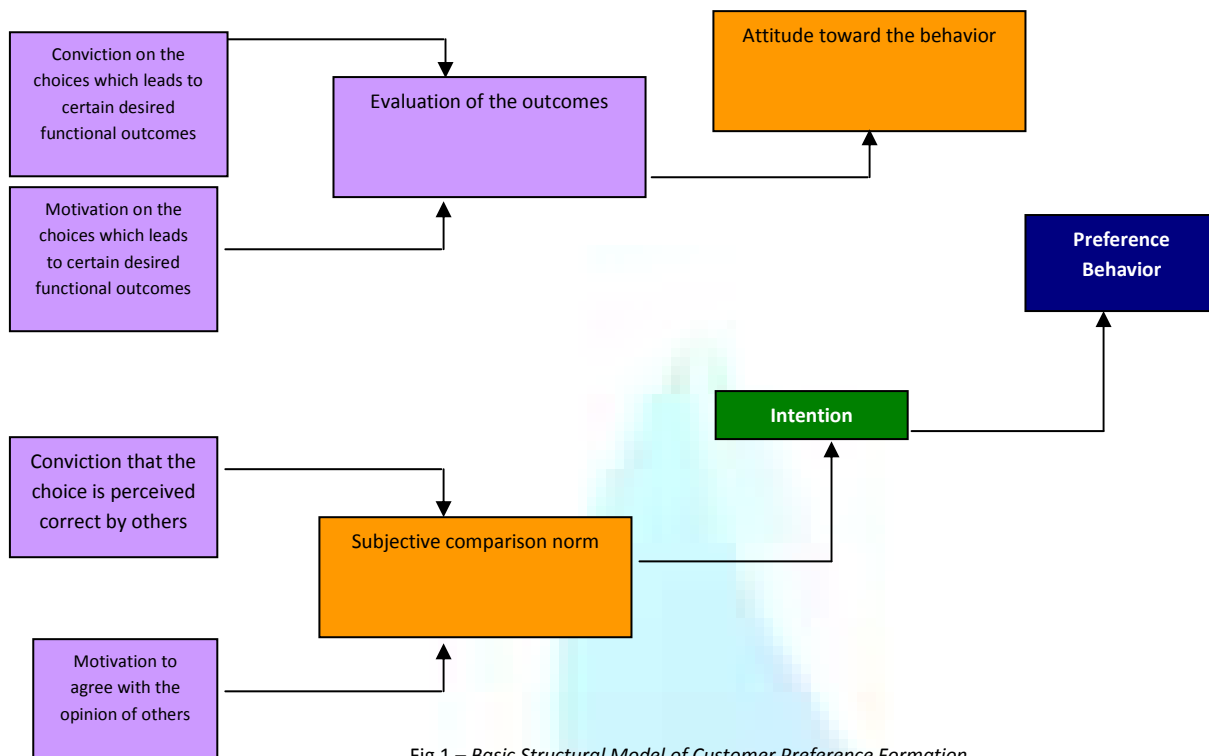


Fig 1 – Basic Structural Model of Customer Preference Formation
Consumer Behavior by Leon Schiffman and Leslie Kanuk

CONSUMER PREFERENCE

“The way in which consumers in a free market choose to segregate their total expenditure in purchasing goods & services”

In microeconomics, preferences of consumers and other entities are modeled with preference relations. Completeness is more philosophically questionable in every sense. In most applications, S is an infinite set and the consumer is not aware of all preferences. However, preference can be interpreted as a hypothetical preference that could be made rather than a conscious state of mind. However, here completeness amounts to an assumption that the consumer can always make up their mind whether they are indifferent or prefer one option when presented with any pair of options goods and services”

The underlying foundation of demand, therefore, is to understand the model of how consumers behave. A consumer has a set of preferences and values whose determinations are outside the realm of economics. They are no doubt dependent upon education, culture, and individual tastes, among a plethora of other factors. The measure of these values in this model for a particular good is in terms of the real opportunity cost to those consumers who purchases and consumes the good. But consumers are quite constrained in their choices. These constraints are determined by the consumer’s income, and the prices the consumer pays for the goods.

CONSUMER BRAND PREFERENCE

In an attempt to build brand preference, the advertising must persuade a target audience to consider the advantages of a brand, often by portraying its reputation as a long-established and trusted name in the industry. If the advertising is successful, the target consumers will choose the brand over other brands in any category.

CUSTOMER SATISFACTION

Customer satisfaction is a measure of how products and services supplied by a company meet or exceed customer expectation. It is perceived as a key performance indicator within business and is part of the four perspectives of a Balanced Scorecard. In a competitive marketplace where a business competes for customers, customer satisfaction is seen as a key differentiator and has increasingly become a key element of business strategy.

MEASURING CUSTOMER SATISFACTION

Organizations nowadays are increasingly interested in retaining existing customers while targeting non-customers; measuring customer satisfaction provides an indication of how successful the organization is at providing products and/or services to the marketplace. Customer satisfaction is an ambiguous and abstract concept and the actual manifestation of the state of satisfaction will vary from person to person and from product/service to product/service. Satisfaction depends on a number of both psychological and physical variables which correlate with satisfaction behaviors such as return and recommended rate. The level of satisfaction can also vary depending on other options the customer may have and other products against which the customer can compare the organizations.

REVIEW OF LITERATURE

Loyalty of a firm’s customer has been recognized as the dominant factor in a business organization’s success, Study by *(Kandampully & Suhartanto, 2000)* identified the factors of image and customer satisfaction that are positively related to customer loyalty in the hotel industry. According to Oliver’s expectation-disconfirmation model, consumers have three levels of expectations about the product or service performance: equitable performance (what the customer has to receive in return for money and effort spent), expected performance, and ideal performance *(Oliver 1980)*. According to *(Grönroos, 1984)*, the quality of a service perceived by customers will differ depending on what strategy the company chooses to deliver and promote that service. The service quality model by Grönroos holds that the quality of a service, as it is perceived by the customer, can be divided into technical quality and functional quality dimensions. The former denotes what the customer receives as the output of a service production process and the latter how the technical quality is produced and transferred to the customer during buyer-seller interactions. Results of a study conducted by *(Ramanathan & Ramanathan, 2011)* revealed that “Value for money” is a critical attribute, while “Customer service”, “Room quality” and “Quality of food” are dissatisfiers. Business guests and guests of independent hotels, exhibit similar behavior, but for leisure guests, and guests of chain hotels, “Value for money” is a dissatisfier. *(Claver et al., 2006)* studied the Quality impact on hotel performance and found that the most important reasons to adopt and certify quality systems are internal and, on the other hand, that although positive effects on performance can be identified, the impact on financial performance is low.

With escalating competition in the hotel industry, a growing number of hotels have considered service quality their top priority in maintaining competitiveness. To maintain competitiveness, the hotel management often needs to develop reliable service quality standards. Perhaps one of the best ways of developing such standards is to compare the hotel’s service performance with that of the service leader and reassess its service performance continuously through competitive benchmarking *(Min & Min, 1997)*. According to *(O’Malley, 1998)* Customer loyalty schemes have blossomed in the era of customer retention, and have been

willingly embraced by both retailers and consumers alike, the study also concluded that such schemes have an important role to play in situations where no loyalty or spurious loyalty is evident. However, where sustainable loyalty is the ultimate goal, customer loyalty schemes are of importance only as part of a coherent value proposition. In the words of (Creek & Spencer, 2011) There has been much debate about what constitutes quality service and more specifically how this applies to the hotel industry. The industry is a dynamic one in which the guest dictates the pace and type of service and in which increasing competitiveness has resulted in satisfactory service being the minimum expectation of guests. Research by (Countryman & Jang, 2006) shows that While this physical environment is fairly important in helping to establish first impressions, there are other physical spaces within a hotel that have a large influence on guest perceptions and impressions. Hotel practitioners need to understand the importance of the atmospheric elements and their influence on overall guest perceptions and impressions. According to (Lo et al., 2010) Evaluation and control are perceived as very important activities not only to create value for the customers, but also to track the performance of the guest contact departments and the customers' evaluations of the hotel/restaurant experiences.

A study by (Mohsin & Lockyer, 2010) implied that for responses relating to front office, room service and in-house café/restaurant, the importance score is statistically significant to and higher than the performance rating. Overall, the results indicate significant difference between expectations of the guests and actual experiences, thus highlighting managerial implications. Hotels often use advertising, referral marketing and services marketing to help guests acquire brand-related information. Hotel guests, in turn, establish their brand knowledge through direct and indirect experiences. A better understanding of how these experiences contribute to brand equity has important implications for brand managers (Xu & Chan, 2010). Study through Conjoint Analysis by (Koo et al., 1999) reveal consumers' preference towards choosing a particular restaurant. Through some focus group discussions, a list of restaurant attributes was identified as important for restaurant-goers in deciding where to dine. At a time of increasing competition, hotel firms are aiming to use service enhancement as a means to gain competitive advantage, and therefore developing a range of techniques to measure levels of service quality improvement (Eccles & Philip Durand, 1997). A Research by (Ladhari, 2009) suggested that Emotional satisfaction makes a significant contribution to the prediction of behavioural intentions (such as loyalty, word of mouth, and willingness to pay more).

RESEARCH METHODOLOGY

JUSTIFICATION OF STUDY

Consumer preference and attitude towards hotels is very important aspect for each and every hotel. It is very useful to study consumer preference and attitude because it helps hotel to get more benefits as compare to their competitors.

OBJECTIVES OF THE STUDY

- To identify & analyze the different services offered by Gold and Nirulas.
- Check customer's preference, satisfaction and attitude towards hotel Gold and Nirulas's.
- Check out the market image of hotel Gold and Nirulas.

RESEARCH DESIGN: The present study has been designed to study comparison of hotel Gold and Nirula's. For present study an exploratory and descriptive research design has been adopted.

POPULATION: A sample size of consumers of Panipat will be surveyed.

SAMPLING METHODOLOGY: The probability-based approach of stratified random sampling will be adopted, in order to give adequate coverage to the selected area.

SAMPLE SIZE: A sample size shall be 100 people of the population.

HYPOTHESES

- H_0 : Both Hotel Gold and Nirula's are equally popular.
- H_1 : Both Hotel Gold and Nirula's are not equally popular.

- Level of significance is 5%

ANALYSIS & INTERPRETATION

Analysis showed that 99% of the Customers like to go to hotels because of the rise of disposable income, standard of living, good food etc. However it was also seen that 34% consumers like to go to hotels once in the month, 30% twice in a month, 15% thrice and 21% more than three times in a month. Studies also show that customers preferred Hotel gold compared to Nirula. More than half of the respondents preferred to choose Hotel Nirula's because of its good food quality, 19% for Hygiene, 15% prefer for its better customer services and 8% for ambience. Another 49% respondents prefer to choose Hotel Gold because of its good food quality, other parameters included Hygiene, better customer services and ambience. There was an equal consensus between respondents that 50% customers thinks that hotel nirula's is unique and other 50% likes gold is unique. However when it came to visiting these hotels with families on weekends it was concluded that 51% customers prefer to chosen hotel Nirula's and 49% like to go to Gold. Results shows that Price as a determinant of hotel gold is high as compare to nirula's, however food quality of hotel Gold is good as compare to nirula's. Quality and cleanliness of Spa is better in gold as compare to nirula's. Atmosphere of hotel nirula's is much better than the gold hotel. A hotel is distinguished primarily by its ambience it was seen that the Ambience of hotel nirula's attracts customers to spend more time there.

STATISTICAL ANALYSIS

CHI-SQUARE ANALYSIS ON THE COMPARISON OF HOTEL GOLD AND NIRULA

HOTEL	HIGHLY REFERED	%	PREFERED	%	LEAST PREFERED	%	TOTAL	%TOTAL
Hotel Gold	45	75%	10	16.7%	5	8.3%	60	100
Hotel Nirula	5	12.5%	15	37.5%	20	50%	40	100
TOTAL	50		25		25		100	

Table (9.1) Relationship between hotel Gold and Nirula

CHI-SQUARE ANALYSIS ON THE COMPARISON OF HOTELGOLD AND NIRULA

HOTEL	HIGHLY REFERED	%	PREFERED	%	LEAST PREFERED	%	TOTAL	%TOTAL
Hotel Gold	30	50%	15	25%	15	25%	60	100
Hotel Nirula	20	50%	10	25%	10	25%	40	100
TOTAL	73		27		100			

Table: (9.2) Relationship between hotel Gold and Nirula

Calculated value of $\chi^2 = 46.23$

Number of degree of freedom:

$Ndf = (R-1) (c -1)$

$= (2-1) (3-1)$

$= 2.$

Table value of χ^2 at 5% level of significance = 5.99

INTERPRETATION: Since C.V of χ^2 at 5% level of significance is greater than the T.V of χ^2 . Hence we reject H_0 in favor of alternate hypothesis & conclude that hotel gold and Nirula are not equally preferred.

FINDINGS

Based on the research the findings are described below:

- 34% respondents like to visit hotel once in a month.
- 51% of respondents visit to hotel Gold.
- Food and hygiene are most important determinants according to 91% of respondents who visited both hotels.
- 49% of Respondents said that the Quality of food of hotel Gold is better than hotel Nirula.
- Hotel Gold takes less time in delivering the order on the table.
- The price charged by hotel Gold is higher than hotel Nirula.
- Hotel Gold has quick home delivery and better waiter services.
- Respondents were equally divided when they were ask which hotel they think has a unique image.
- Nirulas overshadowed Gold when respondents were asked about the ambience.
- Due to its proximity to the NH-1 both the Hotels are preferred by the Travellers.

SUGGESTIONS

Suggestions for hotel Gold are as below:

- From the study it has been found that the quality of food is best but it should concentrate on the quality of beverages.
- It must reduce its prices so that it can be approached by Upper middle income group.
- It should concentrate on improving the quality of catering services.
- It should focus on its ambience (Exterior & Interior).
- More promotional strategies have to be adopted in order to cash in during the festive seasons.
- The ambience of the in-house restaurant has to be refurbished and culinary part has to be given a complete makeover thereby adding some more varieties on the menu.

Suggestions for hotel Nirula are as below:

- It should improve its quality of food.
- Its home delivery is not quick so it should concentrate on making the home delivery quick.
- There is great need by hotel Nirula to improve the waiter services.
- It has to concentrate on the hygiene and should be according to the standards given by HACCP.
- It has to improve the services of coffee and bar.
- Few things are to be done in order to make the ambience and surroundings look more attractive.

CONCLUSION

Almost all the people like to go to the hotels, Research shows that people of panipat has a liking for both hotel gold most and hotel nirula's. Despite of the high prices of hotel gold people prefer going there which signifies that there are many other parameters which is consider by the people while choosing any hotel. People say that there is a minor difference between both the hotels. The service provided by hotel gold is better than the services provided by nirula's. People likes clean place and in hotel gold the place is much better as compare to nirula's. People prefer quality of food the most that is why they like to go to the hotel gold. Quick service is also a very important parameter prefer by the general public. Hotels like Nirula's and gold have set high standards in a city like panipat which is known for its industrial development and has cash on the unlimited potential this city has. Moreover the fooding habits of people in panipat have seen a sea change and people prefer to eat outside and hence there comes the role of Nirula's and Gold. Nirula's has come a long way since their humble beginning in 1928 to till date they have managed to maintain a brand name which is synomous with their food & Beverage, it also happens to be the pionner in introducing the Chinese food concept in a restaurant in 1950. On the other hand Gold has been a forefront in Hotel sector in a city like panipat, and it has built upon the trust and has been perceived for a long time as a venue for the weddings & Parties, however off late they have worked to portrayed themselves as a full fledged 3star Hotel. Both these Hotels still have a long way to go in acquiring new clientele base and retain existing customers.

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IMPROVEMENT OF WORKPLACE CHARACTERISTICS THROUGH SPIRITUAL INCLINATION**DR. R. KRISHNAVENI****PROFESSOR****P S G INSTITUTE OF MANAGEMENT****PEELAMEDU – 641 004****G. NATARAJAN****ASST. PROFESSOR – SR. GRADE****SCHOOL OF MANAGEMENT STUDIES****BANNARI AMMAN INSTITUTE OF TECHNOLOGY****SATHYAMANGALAM – 638 401****ABSTRACT**

Human resource is the most important resource for any organization or they are the biggest asset for any firm. Day in and day out recruitment and poaching of good employees are on the rise. This clearly shows that organizations are looking for good and quality man power. Moreover today the corporate companies have grown leaps and bounds like empires and looking for responsible people to run it. Many companies also look inside the organization and conduct lot of training programs to improve the skill sets of the people. Not only skill sets, ethics and human values across all cadres pose a serious challenge. Spiritual inclination adds a new dimension to the today's corporate culture. Organizations look spirituality as a means to face the challenges in this modern world. Today many employees join spiritual institutions and practice yoga and even organizations have started to have meditation room in the workplace and conduct free spiritual retreats for the employees and their families. This study tries to bring out the impacts of spiritual inclination over the improvement of various workplace characteristics. The outcome of this study will help the organizations to understand the impacts and to implement spirituality in organization as an intervention tool or as a human resource development tool.

KEYWORDS

Development, Improvement, Spirituality, Spiritual Inclination, Workplace Characteristics, Yoga.

INTRODUCTION

The term 'Spirituality' is gaining momentum in the corporate world. Organizations and individual working people are looking at spirituality as a development tool. Spirituality adds a new dimension in organization culture and in managing the human resource. Spirituality has also shown positive correlation with some of the workplace characteristics.

Komala. K & Ganesh. LS, (2007) has established that there is a positive correlation between spirituality and job satisfaction and also establishes a negative correlation between burnout and spirituality, where burnout is one of the outcomes of stress.

Alexander et al.,(1993) claims that spirituality improves the relationship with the colleagues. Hence organizations can look at spirituality to improve inter personal relationships between their work force.

It is also claimed that spiritual persons develop confidence level and face the critical times boldly. When faced with an injury, spirituality oriented people seem to respond better to remedial intervention, better handle trauma and have lower depression rates (MacDonald et al, 2002) Ellison's (1983) existential well being subscale was positively correlated with self esteem and social skills.

Trott (1996) studied 184 workers in a Fortune 100 company, finding a positive correlation between spiritual well being and general self efficacy.

This study is conducted to further explore the benefits of spiritual inclination to find out the other workplace characteristics improvement and also to confirm the workplace characteristics where the relationships have been already established.

THEORETICAL BACKGROUND**SPIRITUALITY**

Human is made of three parts. They are the physical body, mind and the innermost soul. Spirituality is being with the soul. In other words it is not the physical body or tangible material which can be seen through ordinary eyes.

Here are few definitions given by spiritual persons and researchers.

"Spirituality means the part of you that survives when you eliminate your flesh and bones – the part you can't point to, but can feel, the part you might describe to someone else as your essential being, your soul. Soul is what connects you to everyone and everything else" (Chappell, 1994)

"A connecting experience with God" (Fort, 1997)

"Spirituality means knowing the consciousness within and connecting with the divine force". (Swami Prem Nirantar, 2009)

Swami Sri Aurobindo (1914 / 2006) has described Spirituality as given below "Spirituality is in its essence an awakening to the inner reality of our being, to a spirit, self, soul which is other than our mind, life and body, an inner aspiration to know, to feel, to be that, to enter into contact with the greater Reality beyond and pervading the universe which inhabits also our own being, to be in communion with It and union with It, and a turning, a conversion, a transformation of our whole being as a result of the aspiration, the contact, the union, a growth or waking into a new becoming or new being, a new self, a new nature."

By reading these definitions or explanations given, one can understand that spirituality is realizing that one is soul, not the body or material and get connected to the outer Greater Soul with the help of the inner soul. With that realization and connection, one begins to live his/her life. It is a conscious connection with the Divine Force.

SPIRITUALITY AND RELIGION

Spirituality and religion are not same. Religion is mere mental conditioning. Religion has specific god and certain rituals to be followed. But spirituality does not have any particular god to be worshipped. It is a state of higher consciousness and a person belonging to any religion can practice spirituality. Religion cannot lay boundaries to spirituality. Spirituality is common for everyone.

In many articles, spirituality has been described as reading spiritual books, going to church or temple, physically and mentally being good, doing service to the society, a state of harmlessness, finding a purpose or meaning in life and so on. Spirituality is not to be confused with wellbeing or general happiness. Further striving to get one or connected with the soul and in that process one read spiritual books, attend discourses, do some practice and strives to live according to the principles is all spiritual inclination and not spirituality.

SPIRITUAL INCLINATION

Spiritual inclination means one aspires and tries to attain spirituality or that state of consciousness which is called as higher or eternal consciousness. In that process one starts to gaze at the nature and its marvelous existence and starts to ask questions, which is called as existential thinking, and strives to understand the truth by reading spiritual books and attending discourses. Then he looks for a systematic way of practice and searches a Guru to achieve the goal. Finally one settles with a Guru and starts to do the practice.

People who have consciously taken up a systematic way of practice, under the guidance of a self-realized Guru towards spirituality are called as spiritually inclined people.

Systematic way to attain spirituality is called as yoga. Hence a person practicing a systematic way through various forms of yoga is taken as spiritually inclined person.

YOGA

This systematic way to attain spirituality is called as yoga. Yoga is not a set of exercises alone. Yoga means a Way of Life (Path) to unite with the Higher Force. Sri Paramahansa Yoganada, (1946) describes yoga as following. The meaning is derived from Sanskrit, 'Yug' means "Union" or "Join" meaning is uniting the atman (internal spirit) with Paramatman or Brahman (universal spirit), or in other words, uniting of the individual self and the Absolute self. It is the union of mind, body and soul with the Universal Soul.

OBJECTIVE

The objective of this study is to find out the perception of spiritually inclined people on the improvement level of the twenty identified workplace characteristics after spiritual inclination.

RESEARCH METHODOLOGY

It is a cross sectional descriptive study of working people who regularly practice yoga for a minimum period of six months under the four spiritual institutions in Coimbatore district, Tamil Nadu of India. In Coimbatore district there are about five spiritual institutions having a permanent centre to teach and practice yoga and also the members participating in these institutions are also high. Among the five institutions, permission to do the study was obtained from the following four institutions. The four institutes are SKY (Simplified Kundalini Yoga founded by Sri Vethathiri Maharishi), IYI (Integral Yoga Institute established by Swami Satchidananda), YSS (Yogoda Satsanga Society instituted by Sri Paramahansa Yogananda), AOL (Art Of Living founded Sri Sri Ravishankar).

Regular practice of yoga is very important because the changes or impact cannot happen overnight. Hence people practicing yoga for 6 months are taken for this study. In all the selected institutions a common practice found is all practicing people (members) must attend the weekly retreats or weekly group meditations in the centre, which is used as an opportunity by the researcher to collect the data.

To collect the primary data, questionnaire was used. A questionnaire was developed with 20 questions to bring out their perception on the improvement of twenty workplace characteristics compared to before spiritual inclination in a 5 point Likert scale consisting of excellent improvement, good improvement, average improvement, low improvement and no improvement. Apart from the twenty questions which are common to all people across various professions, five questions have been posed only to the entrepreneurs, which are related to workplace characteristics of an entrepreneur.

Stratified random sampling method is used to select the sample. Each institution is considered as a stratum. The total number of valid questionnaires including all the four institution was 606 after data cleaning. Outliers were removed.

Validity and Reliability: The workplace characteristics are selected from the concepts and the writings of the Gurus belonging to these four spiritual institutions and have been validated by expert people belonging to the selected four institutions. A pilot study with a sample size of 30 has been done and reliability analysis is carried out. With the help of the final data another reliability test is done using Cronbach's Alpha and the results are shown in table no. 4.1.

TABLE 4.1: RELIABILITY STATISTICS

Particulars	Pilot Sample	Final Sample
No of Items (N)	20	20
Sample Size	30	606
Cronbach's Alpha	.921	.929

In both cases the Cronbach's Alpha is above 0.92, which shows the high reliability of the questionnaire.

ANALYSIS**OVERALL WORKPLACE CHARACTERISTICS IMPROVEMENT SCORE**

Each rating is scored from 1 to 5, 1 being no improvement and 5 means excellent improvement. The twenty workplace characteristics score of a respondent are summed up to get the overall workplace characteristics improvement score. Then this overall score of all the respondents are summed up to get the total overall workplace characteristics improvement score. Then the mean for that score is calculated.

Out of the maximum mean score of 100 for this study, the mean value was **82.904**, which can be considered as good improvement score. Hence spiritually inclined people perceive that their workplace characteristics have been improved after joining spirituality.

The next calculation is done for the improvement score of individual workplace characteristics and the mean values are placed below in table no 5.1.1.

Workplace Characteristics	Improvement – Mean
Stress management	4.24
Humble to people	4.17
Empathy towards colleagues & people	4.13
Leadership qualities	3.97
Peacefulness	4.26
Happiness	4.32
Taking responsibility in work	4.19
Ability to work in teams	4.07
Managing anger	3.94
Workplace accepting criticism	3.94
Confidence level	4.33
Handling materials & etc	3.99
Readiness to change & betterment	4.20
Listening to others point of view	4.23
Acceptance of losses & failures	4.06
Fair & ethical way in dealing with people	4.19
Overall job satisfaction	4.19
Interpersonal relationship	4.15
Productivity	4.02
Clarity in thinking	4.28

The mean value for the twenty workplace characteristics improvement score ranges from 3.94 to 4.33 for a scale value ranging between zero to five. Hence all the workplace characteristics are perceived to be improved and improvement level ranges from average to excellent improvement.

IMPROVEMENT OF VARIOUS WORKPLACE CHARACTERISTICS

Twenty workplace characteristics have been studied for its improvement when compared before spiritual inclination. From the above table no. 5.1.1, it is evident that all the workplace characteristics have shown improvement. Now these improvement scores for the various workplace characteristics are checked for their level of improvement based on the mean ranks as shown in table no. 5.2.1.

Workplace characteristics	Mean Rank	Rank	Level of Improvement
Confidence level	12.05	1	High Improvement
Happiness	11.96	2	
Clarity in thinking	11.56	3	
Peacefulness	11.41	4	
Stress management	11.23	5	
Listening to others point of view	11.16	6	
Readiness to change & betterment	10.93	7	Average Improvement
Fair & ethical way in dealing with people	10.92	8	
Overall job satisfaction	10.92	9	
Taking responsibility in work	10.74	10	
Interpersonal relationship	10.65	11	
Humble to people	10.59	12	
Empathy towards colleagues & people	10.40	13	Low Improvement
Acceptance of losses & failures	9.94	14	
Ability to work in teams	9.93	15	
Productivity	9.45	16	
Handling materials & etc	9.19	17	
Leadership qualities	9.09	18	
Accepting criticism	8.97	19	
Managing anger	8.92	20	

Those characteristics which have a high mean rank, that is mean rank above 11, are clubbed together and marked as high improvement level. Likewise the characteristics which have scored mean rank above 10 and below 11 are grouped as average improvement and characteristics below 10 are grouped as low improvement.

Now to check whether these twenty workplace characteristics improvement level are statistically significant Friedman test is run and the results are presented below in table no. 5.2.2.

Particulars	Values
N	606
Chi-Square	252.480
Degrees of Freedom	19
Asymptotic Significance	.000

The calculated asymptotic significance value is less than 0.05; hence there is a statistically significant difference between the improvement scores of the twenty workplace characteristics when compared before spiritual inclination of the working people.

To find out the effect size of the significant difference level between the 20 workplace characteristics Wilcoxon Signed Rank test has been used. Each workplace characteristics was compared with the least improved character of Anger management, which has got the twentieth rank. . Post hoc test has been conducted to get the 'r' value. The 'r' values and the grading based on 'r' value is presented below in table no 5.2.3.

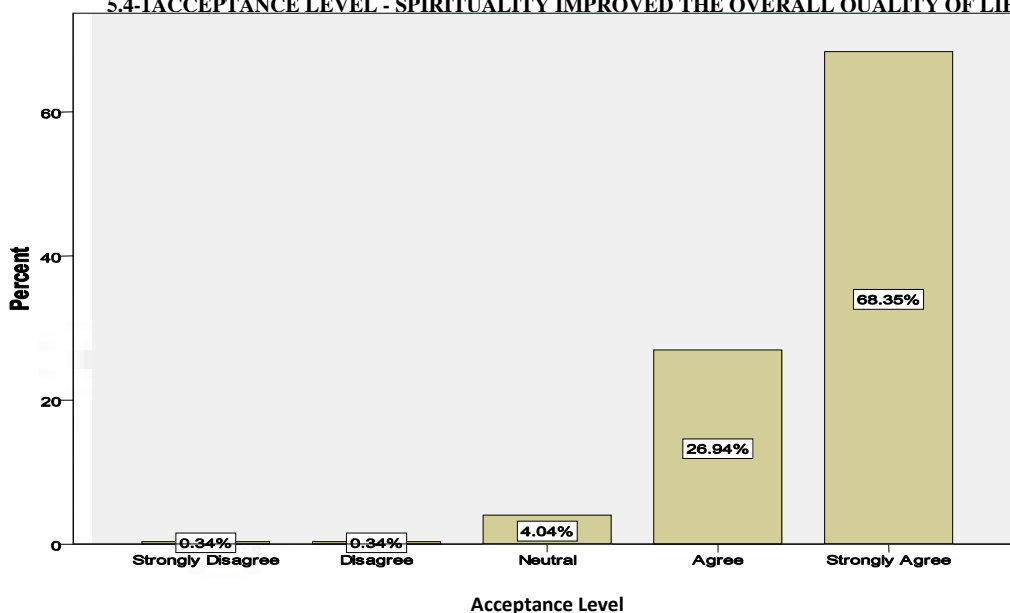
S.No	Workplace Characteristics	'r' Score	Effect Size
1	Confidence level	0.410621	Medium Effect
2	Happiness	0.416269	
3	Clarity in thinking	0.378112	
4	Peacefulness	0.383245	
5	Stress management	0.353039	
6	Listening to others point of view	0.334191	
7	Readiness to change & betterment	0.278569	Small Effect
8	Fair & ethical way in dealing with people	0.273151	
9	Overall job satisfaction	0.259664	
10	Taking responsibility in work	0.275342	
11	Interpersonal relationship	0.247444	
12	Humble to people	0.274189	
13	Empathy towards colleagues & people	0.216723	No Effect
14	Acceptance of losses & failures	0.123809	
15	Ability to work in teams	0.145539	
16	Productivity	0.07055	
17	Handling materials & etc	0.046054	
18	Leadership qualities	0.016658	
19	Accepting criticism	0.009165	No Effect
20	Managing anger	0	

According to Andy Field (2005) in the post hoc analysis to find out the effect size, if $r = 0.10$ it is a small effect, when $r = 0.30$ it is a medium effect and when $r = 0.50$ the effect size is large. Based on the effect size, the twenty workplace characteristics improvement scores are graded as medium, small and no effect.

SPIRITUALITY AND IMPROVEMENT OF OVERALL QUALITY OF LIFE

The respondent's level of acceptance to the fact that spirituality has improved their overall quality of life is displayed in the figure no. 5.4.1. More than 95 % of the respondents have accepted that spirituality has improved their overall quality of life.

5.4-1ACCEPTANCE LEVEL - SPIRITUALITY IMPROVED THE OVERALL QUALITY OF LIFE



RESULTS & DISCUSSION

From the analysis it is evident that spirituality improves the overall workplace characteristics and all the twenty workplace characteristics which have tested have shown improvement when compared before joining spiritual practices.

Among the twenty workplace characteristics improvement score, the top seven characteristics which have scored high are as follows. Confidence level tops the list; followed by happiness, clarity in thinking, peacefulness, stress management, listening to others point of view respectively.

The five entrepreneur workplace characteristics have also shown improvement. Among the five characteristics these three characteristics, i.e., Importance to customer satisfaction, fairway of doing business, fair treatment of employees tops the list respectively.

When checked for the influence of demographic variables, like age, gender, profession, cadre, experience and income, none of them have shown any significant difference.

Spiritual institution and number of years of spiritual practice were also checked for relationship with workplace characteristics improvement, which have not shown any significance difference or relationship.

More than 95% of the respondents have agreed that because of spirituality their quality of life has improved. Hence the workplace characteristics are improved after being spiritually inclined irrespective of the age, profession, experience, spiritual institution and number of years of spiritual practice.

Further to look how spirituality makes this difference, it may be because of the certain good principles prescribed by the institutions. As discussed in the introduction part, yoga is a systematic way of life to spirituality which focuses on the development and fitness of physical, mental and Soul. Hence spiritual inclination would have impacted the various dimensions of life and as a result the quality of life would have improved. In that process these twenty workplace characteristics would have also improved.

SCOPE FOR FURTHER RESEARCH

Yoga is way of life or a systematic way of spiritual inclination. Hence it would impact on the various dimensions of life and would have also impacted more number of workplace characteristics. Hence it calls for further research to check for the improvement of workplace characteristics in an exhaustive manner and the impact on the various facets of life. At this juncture another obvious area to research is to find out the common principles in these spiritual institutions which might have impacted or impressed the people to change, because in today's scenario it is very difficult to change the behavior or attitude of the people and these principles of spirituality can be used as change management tool.

The results of this study are from the above said four spiritual institutions in Coimbatore district. Hence the scope for conducting broader studies pertaining to other spiritual institutions and other geographical locations is needed in order to generalize the results.

CONCLUSION

It can be concluded that spiritual inclination or a systematic spiritual practice improves the workplace characteristics irrespective of age, gender, qualification, profession, income, experience, spiritual institution and number of years of spiritual practice. Hence organization can see spirituality as a means to improve the workplace characteristics.

Organizations can create opportunity and motivate the employees to be spiritually inclined under any institution of their choice without compulsion, because spiritual inclination is individual's right. Hence the organizations have to cut it fine. They can only motivate and give importance but not to compel them.

Organization can build a meditation room in the working place to facilitate the spiritual practice and can conduct spiritual retreats of various spiritual institutions for the employees and their family members. They also need to create some space in the organizational culture to accommodate the various spiritual practices.

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MEASURING THE SERVICE QUALITY OF SERVICE SECTOR - A CASE OF COMMERCIAL BANK OF ETHIOPIA

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ABSTRACT

Service sector is growing in Ethiopia which basically an agrarian country is trying to become a developing country in the North Eastern Africa. Banking services have gained significant role in this country due to increasing number of customers and clients utilizing the services. The main objective of this study was to apply the SERVQUAL Model as developed by Paraswaram et.al (1988, 1995) in an Ethiopian service marketing context with particular reference to identify the service gaps by comparing the expectations and perception of the customers of the selected bank. The adopted SERVQUAL instrument had twenty two items covering five dimensions of service quality and the respondents were asked to give scores on a seven point liker scale both for the expectations and perceptions of service provided by the bank. The results showed a negative gap between expectation and perception of customers about the bank's service quality. Suitable recommendations are given to the bank for managing the service quality gaps and for future research.

KEYWORDS

Service, Quality, Commercial Banks, Ethiopia.

INTRODUCTION TO SERVICE QUALITY

Service quality focuses on the standard of service delivery and the interaction between the customer and the service provider in order to ensure that the customer's expectations are met (Hernon, 2001, Palmer, 2005).

Service quality is the difference between customer's expectations for service performance prior to the service encounters and their perceptions of the services received" (Asubonteng, Mc Cleary and Swan, 1996:64).

The service quality process can be examined in terms of the gaps between expectations and perceptions on the part of the management, employees and customers. The most important one is the service gap, which is between customer's expectation of the service and their perception of the service actually delivered. The goal of the service firm is to close the service gap or at least narrow it as far as possible. Service quality focuses on the customer's cumulative attitude toward the firm, which is collected by the consumer from a number of successful or unsuccessful service experiences.

Customer satisfaction compares consumer perceptions to what consumers normally expect. Service Quality compares perceptions to what a consumer should expect from a firm that delivers high quality services. Service quality is thus a measure of higher standard of quality services.

The SERVQUAL instrument is based on five service dimensions: tangibles, reliability, responsiveness, assurance, and empathy. A 22 item section record customer expectations of excellent banks in the banking industry. A 22 item section measures consumer perceptions (actually delivered) of the bank. Results from the two sections are then compared to arrive at "gap scores" for each of the five dimensions. The larger the gap, the farther consumer perceptions are from expectations, and lower the service quality evaluation. The smaller the gap, the higher the service quality evaluation. Customer expectations are measured on a 7-point scale from "absolutely essential" to "not at all essential". Similarly, customer perceptions are measured on another 7-point scale ranging from "strongly agree" to "strongly disagree". Thus a 44-item SERVQUAL scale is used to measure customer expectations and perceptions regarding the five service quality dimensions.

PROBLEM STATEMENT

Previous empirical studies focused on service quality in Ethiopia focused on other service sectors and therefore justifies the research in the banking sector. Empirical research using the SERVQUAL model in Ethiopian context is limited. The overall service quality of banks is assessed from the bank customer's perspectives. The service quality will be assessed from the perspective of each respondent and identify the dimensions of SERVQUAL model, namely tangibles, reliability, responsiveness, assurance, and empathy (parasuraman et. Al, 1988) that determine consumer's evaluation of the service quality of the Commercial bank of Ethiopia. A service institution like a bank is very dependent on how the customer's perceptions of the service provided whether it is acceptable or not. Therefore the following hypotheses are proposed;

H1: Tangibles are positively related to service delivery

H2: Reliability is positively related to service delivery

H3: Responsiveness is positively related to service delivery

H4: Assurance is positively related to service delivery

H5: Empathy is positively related to service delivery

RESEARCH OBJECTIVES

1. To apply the SERVQUAL model as developed by Parasuram et al (1995, 1988) in an Ethiopian consumer context, by applying the five service dimensions to the Commercial Bank of Ethiopia.
2. To determine and compare consumer's perceptions of the five service dimensions at the Commercial Bank of Ethiopia.
3. To identify the dimensions that determines the customer's evaluation of service quality at CBE.
4. To examine the association between service quality dimensions and service delivery factors

RESEARCH METHODOLOGY

A self administered questionnaire was developed to analyse the service quality of Commercial Bank of Ethiopia. A sample of 32 customers is selected at random for the study. Results were analysed using SPSS as follows; (1) descriptive statistics (2) factor analysis resulting in 7 scales. Cronbach's alpha coefficients were computed for each sub scale. Multiple regression analysis was conducted to examine the association between service quality dimensions and service delivery behaviours.

TABLE 1: DIMENSIONS OF SERVICE QUALITY

Dimension	Description
Assurance	It refers to the degree to which employees are encouraged to be trusted and confident
Responsiveness	It refers to the degree to which employees are reacting quickly and favourably
Reliability	It refers to the degree to which employees are executing the promised service
Tangibles	It refers to the degree to which employees are appearance, condition of physical facilities and communication materials
Empathy	It refers to the degree to which employees are giving care and provide individualized attention to customers

RESULTS AND DISCUSSION

This study is significant as it provide a clear idea of quality in banks from the perspective of clients on the five service quality dimensions in SERVQUAL model proposed by Parasuraman at al. (1985) in association with service provided by the employees of the bank in fulfilling the customer’s expectation. The demographic profile of the customers is as follows. 65% of the respondents are males and 35% are females. The majority of the respondents aged in the range of 25- 35 years old. In terms of academic qualification of respondents 67.67% are secondary level, 5% from vocational/technical school and 10% are diploma holders and remaining are University graduates.

The reliability analysis was performed in order to determine the data reliability for the independent variables (i.e. service quality dimensions) and the dependent variable (delivery of services). The results of the reliability tests are shown in table 3. All the independent and dependent variables have a Cronbach alpha value range of 0.793 and 0.832 which are greater than 0.7. Thus the measurement of variables is valid and reliable.

TABLE NO 2: DESCRIPTIVE STATISTICS ON CUSTOMER’S EXPECTATIONS, PERCEPTIONS AND GAP MEAN OF SERVICE QUALITY IN COMMERCIAL BANK OF ETHIOPIA

Dimension	Expectation		Perception		Gap mean (G)
	Mean	S.D	Mean	S.D	
Tangibles					
modern looking environment	6.1	0.9	5.2	1.6	-0.9
Bank is visually appealing	5.5	1.4	4.9	1.4	-0.6
CBE employees are neat in appearance	5.6	1.7	5.2	1.5	-0.4
Materials associated with service such as statements, forms are visually appealing	5.4	1.7	4.5	1.9	-0.9
Reliability					
When CBE promises to do something by a certain time, they will do so	5.6	1.5	4.7	1.4	-0.9
When you have a problem, CBE shows a sincere interest in resolving it.	5.7	1.2	4.6	1.4	-1.1
CBE performs the service right the first time	5.8	1.1	5	1.4	-0.8
CBE provides their service at the time they promise to do so	5.4	1.4	4.7	1.6	-0.7
CBE insists on error- free records	5.6	1.4	4.5	1.3	-1.1
Responsiveness					
Employees of CBE tell you exactly when services will be provided	5.9	1.5	5.3	1.5	-0.6
Employees of CBE give you prompt service	5.7	1.4	5.4	1.2	-0.3
Employees of CBE are always be willing to help you	5.8	1.5	4.8	1.5	-1.0
Employees of CBE are never be too busy to respond to your requests	5.4	1.6	4.3	1.5	-1.1
Assurance					
The behaviour of employees of CBE instills confidence in customers	6.1	1.1	5	1.4	-1.1
You feel safe in your transactions with CBE	5.3	1.4	4.9	1.5	-0.4
Employees of CBE are consistently courteous with customers	5.1	1.4	5	1.3	-0.1
Employees of CBE have the knowledge to answer customers	5.5	1.6	5	1.6	-0.5
Empathy					
Commercial Bank of Ethiopia gives you individual attention	5.6	1.5	4.7	1.4	-0.9
CBE has operating hours convenient to all its customers	5.9	1.3	4.7	1.6	-1.2
CBE employees gives you personal attention	5.8	1.5	4.4	1.7	-1.4
CBE has your best interest at heart	5.6	1.4	4.4	1.7	-1.2
Employees of Commercial Bank of Ethiopia understand your specific needs	5.4	1.9	4.3	1.7	-1.1

Note: 1. Gap mean is defined as perception mean –expectation mean

2. A negative gap indicates that the bank customers perceived that service delivery did not meet their expectations; a positive gap indicates that the customers perceived that service delivery exceeded their expectations

TABLE NO 3: RELIABILITY ANALYSIS

Variables	No of items	Cronbach’s alpha
Tangibles	4	0.793
Reliability	5	0.832
Responsiveness	4	0.804
Assurance	4	0.828
Empathy	5	0.796
Service sharing	4	0.811

TANGIBLES

There is no significant relationship between tangibles with service quality sharing in the client’s perception of service quality delivered by the bank employees. Both the facilities and the equipment are not the main concern for the customers in the process of getting service from the bank employees. With the adequate existing facilities it does not prompt the customers to think of physical or tangibles as the necessary infrastructure for the process of service delivery.

RELIABILITY

In terms of reliability, this study shows that it has a significant influence on service quality in the consumer’s perception of service quality rendered by the bank employees. It is a prerequisite for bank management and employees to be able to respond and answer the customer’s query reliably accurately and consistently. With the expectation to be reliable, the customers would perceive the service sharing is given properly by the employees.

RESPONSIVENESS

This study shows that there is no significant relationship between responsiveness and service provided in the consumer’s perception of service quality rendered by the bank employees. This is due to the policy in the bank that all queries need to be responded appropriately in a promptly manner. Thus responsiveness or promptness of service linking to quality of service does not arise in the mind of consumers.

ASSURANCE

This study shows that assurance has a significant influence on service quality in the customer’s perception of service rendered by the bank. The degree of customer’s response showed a positive link with trust and confidence. It is particularly true when customers believe the services received from employees are credible and trustworthy. It is vital that bank employees maintain a good reputation in providing trustworthy and reliable services to the clients. Accurate and consistent responses are encouraged to be given by the employees as well as guaranteed services to be delivered to the customers. The employees of the bank are also encouraged to provide polite and friendly services. This will provide an assurance to the customers of the bank where they would be confident of getting help when they face any problem or uncertainty.

EMPATHY

Similarly the study shows that empathy has no significant influence on service delivery in the customer’s perception of service quality delivered by the bank employees. The finding observes that personal care and individualized attention to the customers is not an important factor for understanding the customer’s needs. The customers understand in carrying out the professional duty of service delivery.

TABLE 4: CORRELATION ANALYSIS

	A	RES	E	REL	T	SD
A	1.000					
RES	0.542*	1.000				
E	0.459*	0.527*	1.000			
REL	0.520*	0.664*	0.670*	1.000		
T	0.469*	0.647*	0.518*	0.508*	1.000	
SD	0.408*	0.386*	0.364*	0.465*	0.315*	1.000

Note (1): A = Assurance; RES = Responsiveness; E = Empathy; REL= Reliability; T = Tangibles; SD = Service Delivery
 Note (2): *p value <0.01

TABLE 5: RELATIONSHIP BETWEEN SERVICE QUALITY DIMENSIONS AND SERVICE SHARING

	Unstandardised coefficients		Standardized coefficients		
	B	Std.error	Beta	t	Sig.
(constant)	1.277	0.227		5.637	0.000
A	0.184	0.060	0.197	3.095	0.002
RES	0.056	0.070	0.057	0.794	0.428
E	0.037	0.071	0.037	0.521	0.603
REL	0.277	0.078	0.283	3.573	0.000
T	0.032	0.062	0.033	0.517	0.606

Note (1): A = Assurance; RES = Responsiveness; E = Empathy; REL= Reliability; T = Tangibles; SD = Service Delivery
 Note (2): *p value <0.01; R² (coefficient of determination) = 0.0258; Adj R² = 0.245; d-W = 1.846; F = 20.405 (p <0.01)

From the table 5 it is observed that the coefficient of determination (R²) is 0.258, representing that 25.8% of the service delivery can be explained by the five service dimensions of service quality. The proposed model was adequate as the F-statistic = 20.405 were significant at 1% level. (p < 0.01). This indicates that the overall model was reasonable fit and there was a statistically significant association between service quality dimensions and service delivery of employees. The individual model variables revealed that *assurance* (0.197, p<0.01) and *reliability* (0.282, p<0.01) were found to have a significant and positive relationship with the service delivery. Hence the hypotheses H4 and H2 are supported.

Service dimensions like responsiveness (0.057, p>0.05), tangibles (0.033, p>0.05), and empathy (0.037, p>0.05) had no significant relationship with service delivery. These dimensions have provided long term, infrastructural benefits necessary for the continued improvement over time, but with an indirect relationship towards service delivery.

From the findings of the measurement among the five dimensions of service quality identified in this study, it provides useful information for the management and practitioner to know what is perceived as important by the customers in the process of service delivery from the bank employees of Commercial Bank of Ethiopia are 'assurance' and 'reliability'. The result may actually point to the areas where the employees could place more emphasis for further improvement to render better service to the customers.

CONCLUSION

To conclude, the objective of this study is to examine the link between service quality dimensions and delivery of services as perceived by the clients in Commercial Bank of Ethiopia, Arbaminch Branch. In responses to responsiveness, the findings obtained shows that service dimensions are significantly and positively associated with delivery of services by the bank employees. It was further discovered that the dimensions of assurance and reliability were positively linked to service delivery, primarily the construct of reliability, as it was found to be the leading service quality element that is associated strongly with service delivery by the employees of the bank.

RECOMMENDATIONS

- The study results suggest that the assurance and reliability dimensions of SERVQUAL model have strong links with service delivery to the clients. The assurance dimension explains that the customers perception of transmission of service is important that service information received are credible and trustworthy. A regular survey once in a year should be conducted to gather the latest information of the customers.
- Training and motivational workshops should be conducted periodically to enhance the efficiency and confidence of bank employees in delivering the service to the clients.
- Responsiveness, tangibles, and empathy show insignificant relationship with the delivery of services. Responsiveness is essential to treat the customers promptly by giving immediate and accurate response to them. Therefore employee's appraisal should be reviewed regularly and proper communication between customers should be enhanced to deliver better service.
- The study also shows that tangibles have an insignificant link with service delivery. It could be possible only with a set of physical facilities, equipment and communication materials. Therefore the bank management should improve the facilities such as ATMs, proper guidance, interior designing to create a good ambience.
- Empathy has an insignificant association with delivery of service and this could be solved by showing more care and personalized attention to the customers. Appropriate advices and guidance should be provided for the bank employees to provide care and personalized attention to the clients.

RESEARCH IMPLICATIONS

The study is done only on focusing a particular bank i.e. Commercial Bank of Ethiopia and its customers which may not provide a comprehensive picture of the link between customers and the bank services. Secondly, the sample size is limited. Hence a more extensive research should be conducted comprising different banks in wider areas. Similarly a comparative study of the service quality from various banks can also be measured.

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SUPPLY CHAIN MANAGEMENT IN AN AUTOMOBILE COMPANY: A CASE STUDY**ARVIND JAYANT****ASSOCIATE PROFESSOR****DEPARTMENT OF MECHANICAL ENGINEERING****SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY****LONGOWAL – 148106****V. PATEL****RESEARCH SCHOLAR****DEPARTMENT OF MECHANICAL ENGINEERING****SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY****LONGOWAL – 148106****ABSTRACT**

Supply chain management (SCM) has emerged as an increasingly important approach to improving the performance of logistics systems. SCM is an integrated approach to increase the effectiveness of the logistics chain by improving cooperation between the players in the chain. Supplier selection is one of the most crucial activities performed by organizations because of its strategic importance. This project is done in a SME (Small Medium Enterprise), which is an automobile industry of North India and producing motor cycles. The supply chain of the company is analyzed and major problems areas are identified by using SWOT analysis and Fish-bone diagrams. Stress is being given on development of performance measurement framework and vendor evaluation and selection in supply chain management. A responsive planning and procurement strategies are recommended to XYZ Ltd. to be flexible enough to respond to the fluctuations in the market more effectively. The present work proposes an AHP (Analytical Hierarchy Process) approach for the selection of vendors in a supply chain. The major advantages of this research are that it can be used for both qualitative and quantitative criteria. The results show that the model has the capability to be flexible and apply in different types of industries to choose their vendor.

KEYWORDS

Supply Chain Management, Vendor selection, Analytical Hierarchy Process (AHP).

INTRODUCTION

A supply chain is the stream of processes of moving goods from the customer order through the raw materials stage, supply, production, and distribution of products to the Customer. All organizations have supply chains of varying degrees, depending upon the size of the organization and the type of product manufactured [2]. These networks obtain supplies and components, change these materials into finished products and then distribute them to the customer. The first step is obtaining a customer order, followed by production, storage and distribution of products and supplies to the customer site satisfaction is paramount. In addition, key to the success of a supply chain is the speed in which these activities can be accomplished and the realization that customer needs and customer satisfaction are the very reasons for the network. Reduced inventories, lower operating costs, product availability and customer satisfaction are all benefits which grow out of effective supply chain. Supply chain management involves the flows of material, information and finance in a network consisting of customers, suppliers, manufacturers, and distributors. It begins with raw materials, Continues through internal operations, ends with distribution of finished goods. The short-term objective of SCM is primarily to increase productivity and reduce the entire inventory and the total cycle time, while the long-term objective is to increase customer satisfaction, market share, and profits for all organizations in the supply chain: suppliers, manufacturers, distribution centers (DCs), and customers.

In supply chains, coordination between a manufacturer and suppliers is typically a difficult and important link in the channel of distribution. Since suppliers are manufacturer's external organizations, the coordination with the suppliers is not easy unless systems for cooperation and information exchange are integrated [3]. The coordination between a manufacturer and suppliers is important because the failure of coordination results in excessive delays, and ultimately leads to poor customer services. Consequently, inventories of incoming parts from suppliers or those of finished goods at the manufacturer and distribution centres (DCs) may accumulate. Hence, the total cost of the entire supply chains will rise. Manufacturers are able to assist their suppliers by providing knowledge, skills, and experience, and to benefit in turn from suppliers' improved delivery performance and from fewer production disruptions that are caused by poor quality materials. The suppliers also can benefit by becoming more competitive than other suppliers as performance improves and costs go down. Thus, supplier development is a vehicle that can be used to increase the competitiveness of the entire supply chains.

OVERVIEW OF THE COMPANY

The company chosen for this research study is a famous automobile manufacturing industry for the two wheelers and located in the northern part of India. The company having a good number of overseas vendors and lead time of these vendors are very high. To handle the problem of high lead time company forced to kept huge inventory in the store to meet the customer demand without any service failure. Recently, the company planned to launch a improve version of exiting bike to improve the quality of the product. They planned to purchase the quality components/sub-assemblies at low cost and at a short duration of time. Instead of purchasing the components/sub-assembly material from the single vendor they noted that three alternative vendors, namely vendor1, vendor2 and vendor3 were taken into consideration. The company had planned to select the best vendor from the three vendors. The turnover of the company is 500 Cr/year having worker strength of about 700/shift. Instead of choosing the same vendor for supplying the bike components, a systematic approach has been applied for selecting a best vendor to supply the required components/sub-assembly.

FACT FILES OF COMPANY

1. Product range : Motor Bike.
2. Turnover : About Rs.500 Cr.
3. No of employees : 700
4. Quality specification : ISO 9002.
5. Total no. components. :1000
6. No. of vendors :45

RESEARCH METHODOLOGY

The supply chain of the company has been studied thoroughly by visiting the XYZ Ltd. Many times and many brains storming session have been conducted with the officials and the other to understand the company business environment. The research methodology can be summarized by figure 1. Identification of problems and opportunity areas in the board manner are undertaken using the following technique for further improvement.

1. SWOT analysis of the supply chain to identify the strengths, weakness, opportunity and threats.
2. Causes the effect analysis of the main problem in the supply chain to find out the key reason for effectiveness.
3. Summary of supply chain problem.
4. Opportunity identified to improve the existing supply chain.
5. Require data collection.
6. Development of flexible models to solving the problem.

FIGURE 1: RESEARCH METHODOLOGY

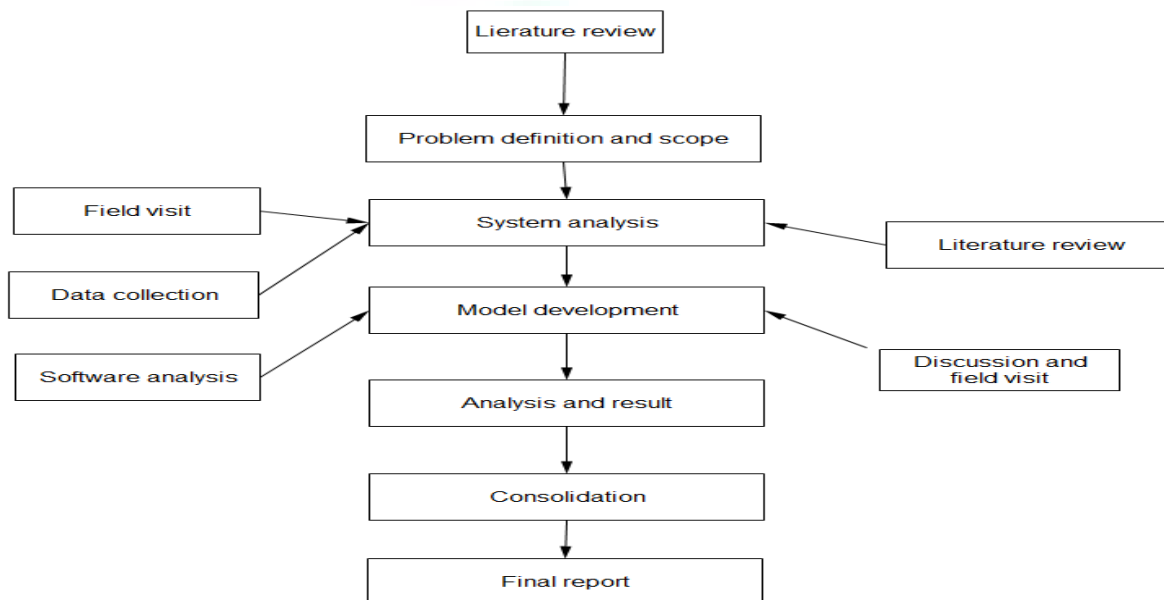
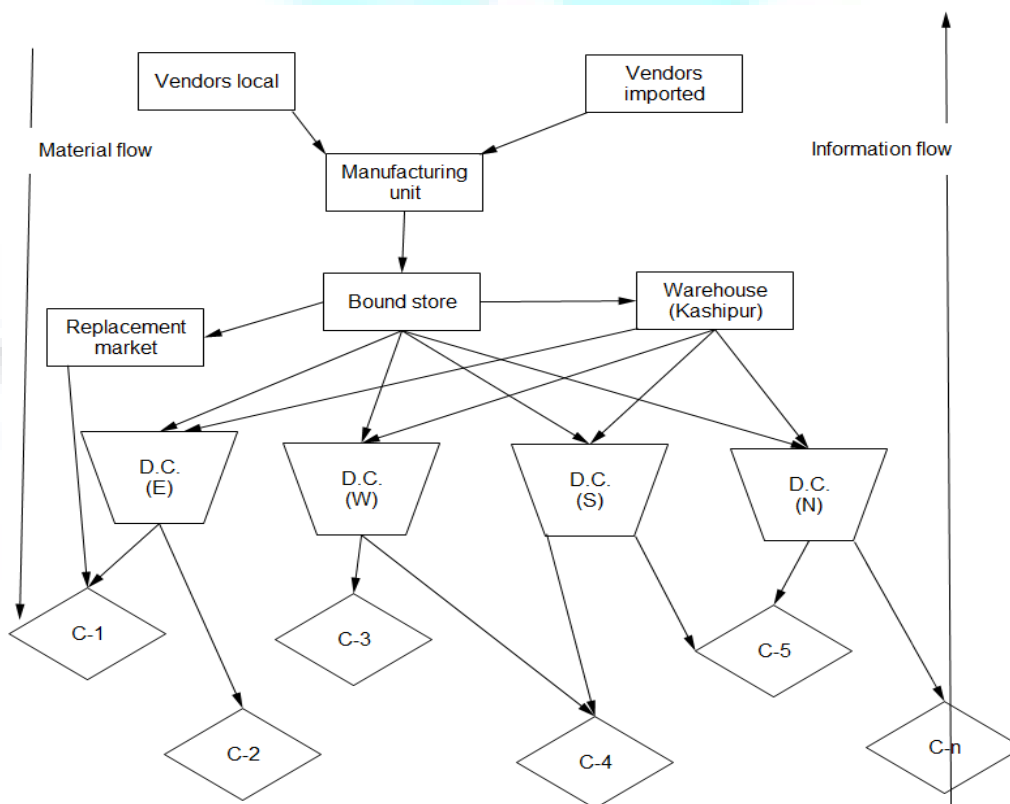


Fig. Work plan of project

OVERVIEW OF SUPPLY CHAIN OF THE COMPANY

FIGURE 2: OVERVIEW OF SUPPLY CHAIN OF THE COMPANY

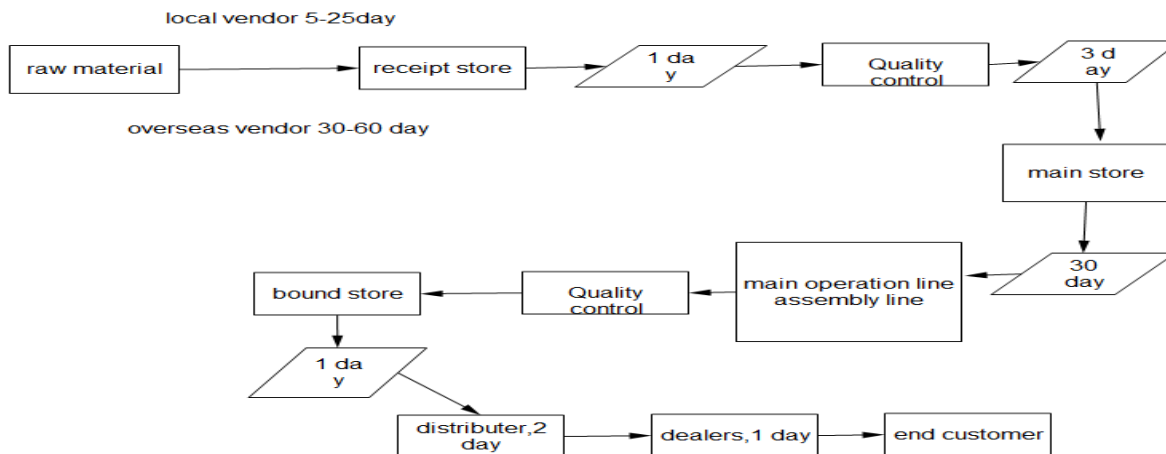


The figure 2 shows the various levels in the supply chain of the company. The simplified diagram gives the overview of the company supply chain. The important point in the company supply chain is that the all distributor are not share the information to each other whenever, uncertain demand occurs in the market for the product, then they inform to the company directly for the more product/quantity and not get it from the nearest distributor due to this stock out occurs and the company experienced the lost sales. This can be avoided by connecting the distributors to each other. In the company supply chain the finished goods are supplied to customers through three routes.

1. Direct to customer.
2. Warehouse/distributor to customer.
3. Replacement market to customer.

SUPPLY CHAIN MODEL OF THE COMPANY

FIGURE 3 EXISTING SUPPLY CHAIN MODEL



SWOT ANALYSIS OF COMPANY

STRENGTHS

1. Top leader in the automobile sector.
2. World class manufacturing technology.
3. Enthusiastic and knowledge manager and staff.
4. Strong financial background.
5. Fast diversifying company.
6. Collaboration with one of the top bike manufacturing in the world.

WEAKNESSES

1. Partially implemented supply chain,
2. Overseas suppliers are not linked with internet.
3. Lack of flexibility between supplier and manufacturing relationship.
4. No system perspective.
5. No consideration to value chain.
6. Partial utilization of resources.
7. Poor inventory management.
8. Distorted information flow.
9. Unable to exploit the potential of ERP.
10. Very high lead time.

OPPORTUNITIES

1. To implement automobile sector enabled supply chain management as the driver.
2. Exploit the potential of ERP.
3. Growing in rural areas.
4. Growing potential for developing countries.
5. Liberalized economy.
6. To exploit its full resources and its good will.
7. Development performance system.

THREATS

1. Competition in the market due to some player in the area.
2. Variation in the variety of the product is high.
3. Change Govt. of India policies.
4. Obsolescence rate is very high.
5. Competition from the top player in export market.

FIGURE 4 CAUSE-EFFECT DIAGRAMS FOR THE INEFFECTIVE SUPPLY CHAIN

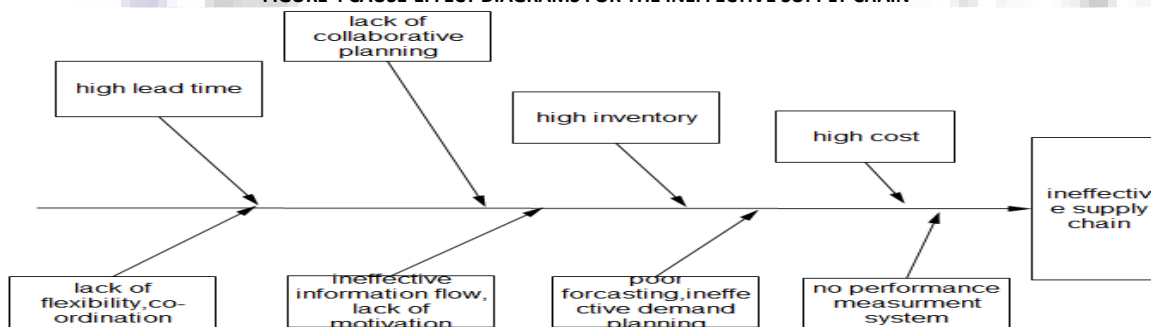
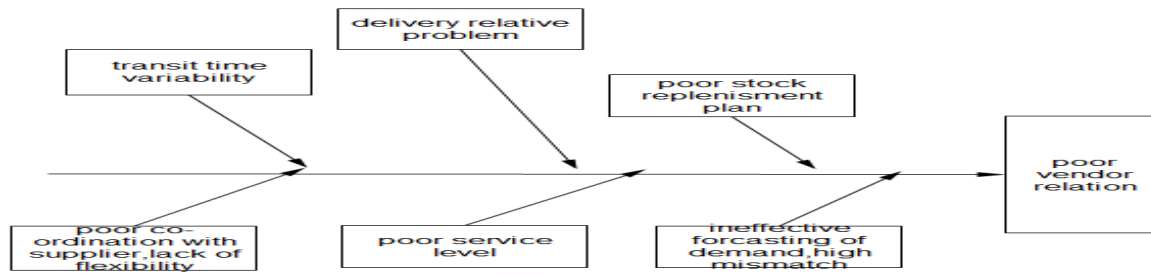


FIGURE 5: CAUSES-EFFECT DIAGRAMS FOR STOCK OUT



PRODUCTION ACTIVITY ANALYSIS

The activity at the company is analyzed and the time for the major activity for value adding and non value adding activity is identified. All the major activities right from the start of ordering to the final dispatching to the customer are analyzed and summarized in the table.1

TABLE 1: PRODUCTION ACTIVITY ANALYSIS

Left hand Side Activity (LH) Stage		Right Hand Side Activity (RH) Stage	
1.CM-1	Collect bearing. Race and pose bearing. Collect chassis from trolley and load on no. punch M/C number punching cycle start, load/unload with Zimmerman.	1	Collect rear wheel from trolley and load on conveyor, collect kit bin from trolley & load on conveyor. Remove empty kit from the conveyor.
CM-2	Position Sticker on card and position the card on vehicle. Scanning the bar code sticker, removed the rubber band and polythene.	2	Align & adjust rear wheel with co. member & place & place spacer.RBL spring and torque rod bolt placement.
CM-3	Hold chassis by tackle load chassis on slate conveyor align and adjust rear wheel with co-member and insert axle.	3	Fork fitment up to torque reset.
2.	ABS component flag positioning, paint on Number punch, upper bearing cage position, position handle bar holder.	4	Front fender prefitment with 4 bolts.
3.	Position of lock set, profit fork cap with nut, washer and 2 bolts, centre locking tightening.	5	Front fender tightening, torque rod bolt placement, front fender torque verification.
4	Engine inserting, Left side bkt and 14 mm bolts insertion, engine bkt and bolt on conveyor, breather pipe connection with clip, magneto coupler fitment.	6	Engine preferment, position adjusts.
5	Position chain on sprocket, positioning sprocket lock, Allen bolt (2 Nos) prefit and tight.	7	RH Engine lower bkt insertion & 14 mm prefit, carburettor clip fitment.
6	Engine Lower and hanging bkt tightening	8	RH Engine hanging bkt insertion & 12 mm prefit.
7	Seat cowl positioning, adjust chain tension & fit by using poke, Adjust nut and Coupling nut tightening.	9	Silencer gasket insertion, Engine tightening.
8	Bar code sticker on chassis, fork bkt fit with two bolts. Fork cap 2 bolt (17 mm) tightening.	10	Front wheel unloading, front break panel fitment with spacer, carburettor fitment.
9	Lower chain case preferment, handle holder upper positioning.	11	Front wheel tightening,
10	Upper chain case preferment, chain case tightening, adjuster nut tightening.	12	Rear wheel alignment and tightening, break rod tightening
11	Collect handle bar from trolley. Handle bar filament, tight front two bolts, rear nut tightening.	13	Collect muffler from trolley and position cylinder head 2 nuts prefit, 1 rear bolt prefit.
12	RR cover fitment and tightening, gear change lever fitment complete.	14	Silencer front nut tightening rider step tightening.
13	Seat cowl position and 3 screws fitment.	15	RBL insertion lower, silencer tightening complete, snap pin insertion in torque rod bolt.
14	Stem nut torque check, SPM cable fitment to speedometer, TPS connection and play setting.	16	Carburettor insulator insertion
15	PT fitment and tightening.	17	Handle bar cable routing
16	Side panel fitment, pt lock fitment.	18	SPM and flap filament
17	Fairing screw preferment.	19	SPM tightening, throttle wire connection in plunger.
18	Fairing screw tightening, SPM cable connection to panel's cable is tightening, focus screw tightening.	20	Lock in filament, 2 coupler connection.
19	Fork break connection, flag removal.	21	2 coupler connection, choke connection, spark plug filament.
20	Grab handle fitment and tightening.	22	Crab pipe routing, clutch connections/C filament and tightening.
21	Online Inspection	23	Firing screw prefitment.
22	Vehicle offline.	24	Fairing tightening, kick filament. RHSP panel filament.
		25	Online inspection.

OPPORTUNITY IDENTIFIED TO IMPROVE COMPANY PERFORMANCE

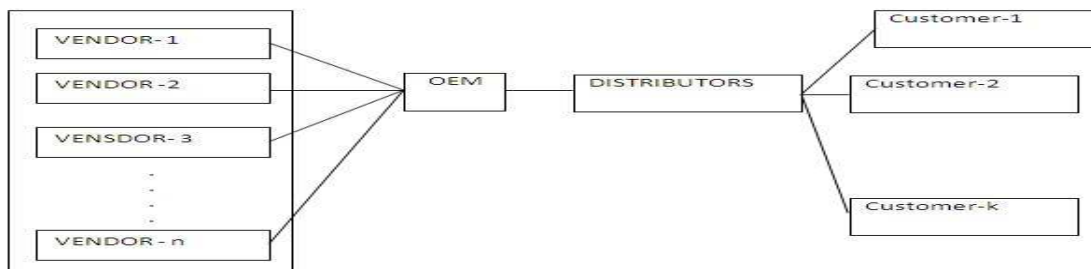
1. Make the supply chain agile, effective and responsive.
2. Development of an integrated performance measurement system
3. Integrate supply chain through IT intervention.
4. Improved the co-ordination with the suppliers to make inbound logistics more responsive and flexible.

EVALUATION OF VENDORS USING AHP METHOD

The company chosen for this work plan to build a supply chain for its new model of bike. Sub-assemblies and components to the bike can be outsourced to vendors/suppliers. Among the questions that arise are; which vendors are to be selected. The conceptual vendor selection model is shown in Fig. 6. Figure 6 explains about the overall theme (model) of the research, i.e., selection of best vendor from the 'n' numbers of vendors for the original equipment manufacturers (OEM) company. The attributes and the sub-attributes have to be most prevalent and important in the vendor selection process. Choosing the possible criteria for the vendor selection involves a decision making team which includes experts from the industry side (purchasing head, purchasing manager, sales manager, product manager, quality manager and production in-charge). The attributes and sub attributes involved in the vendor selection have been

chosen by conducting a survey. A questionnaire consisting of these factors was designed for the survey. The respondents for the survey are selected randomly from different functional areas of the original equipment manufacturers company who are directly involved with the components/materials supplied by the vendors.

FIGURE 6: BEST VENDOR SELECTION MODEL

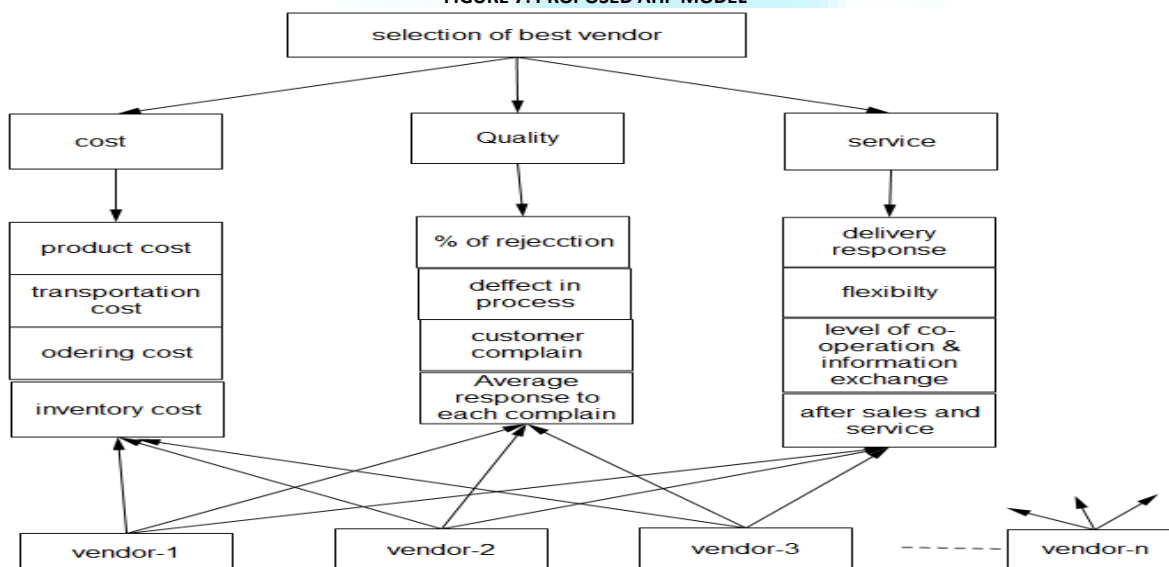


Based On the survey conducted the major influencing attributes and sub-attributes involved in vendor selection is given in Table 2. The objective is to select a set of vendors, evaluate and rank them according to redefined attributes. Figure 7 explains the AHP model.

TABLE 2: ATTRIBUTES & SUB ATTRIBUTE FOR THE VENDOR SELECTION

Attribute	Sub-attribute
Cost (C)	C1-Product Cost
	C2-Transportation cost
	C3-Ordering Cost
	C4-Inventory Cost
Quality (Q)	Q1-Percentage rejections
	Q2-Defect in process
	Q3-Customer complains
	Q4-Average response to each complain
Service(S)	S1-Delivery response
	S2-Flexibility in service
	S3-Level of coordination
	S4-After sales and service

FIGURE 7: PROPOSED AHP MODEL



ESTABLISHMENT OF A STRUCTURAL HIERARCHY

The AHP is a multi-attribute evaluation method that involves three phases: decomposition, comparative judgments, and synthesis of priorities (Saaty, 1980). In the decomposition phase, the project team can explicitly develop the AHP hierarchy model from the fundamental-objective hierarchy as mentioned above. In the second phase, each decision maker utilizes paired comparisons for the attributes and alternatives to extract judgment matrices with a nine-point scale at each level. In the third phase, the paired comparison process is repeated for each attribute in the alternative prioritization problem based on the largest Eigenvalue method. Finally, the relative importance of attributes and the global priority of alternatives can be obtained by aggregating the weights over the hierarchy. Hence, AHP can accelerate the development of a consensus amongst multiple decision makers in vendor management and selection process. A schematic representation of the AHP methodology is shown in Figure 8. This step allows a complex decision to be structured into a hierarchy descending from an overall objective to various 'criteria', 'sub-criteria', and so on until the lowest level. The objective or the overall goal of the decision is represented at the top level of the hierarchy. The criteria and sub-criteria contributing to the decision are represented at the intermediate levels. Finally, the decision alternatives or selection choices are laid down at the last level of the hierarchy. According to Saaty [3], a hierarchy can be constructed by creative thinking, recollection, and using people's perspectives. He further notes that there is no set of procedures for generating the levels to be included in the hierarchy. Zahedi [4] comments that the structure of the hierarchy depends upon the nature or type of managerial decision. Also, the number of the levels in a hierarchy depends on the complexity of the problem being analyzed and the degree of detail of the problem that an analyst requires to solve [3]. As such, the hierarchical representation of a system may vary from one person to another.

FIGURE 8: A SCHEMATIC REPRESENTATION OF THE AHP METHODOLOGY (ADOPTED SATTY, 1980)

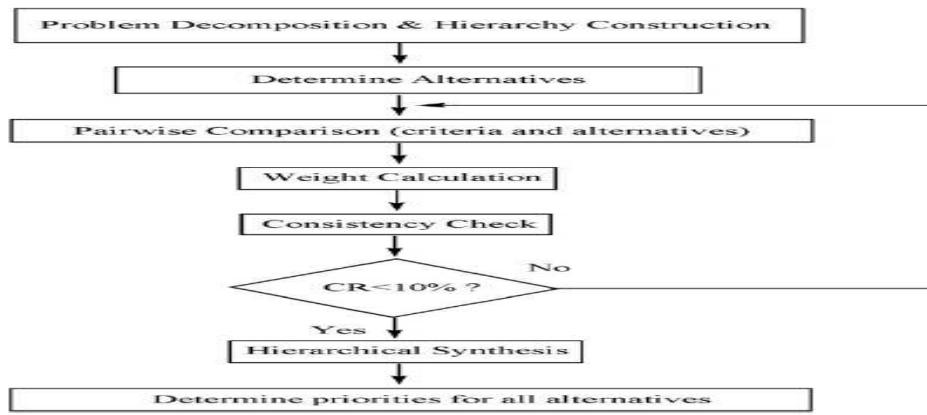


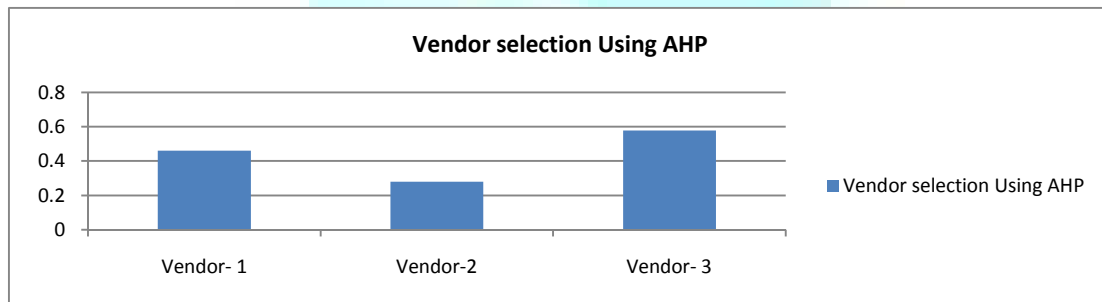
TABLE 3: OVERALL RATING OF THREE VENDORS IDENTIFY BY COMPANY USING AHP

Issues	Sub criteria	Weight	Local weight			Global weight		
			V-1	V-2	V-3	V-1	V-2	V-3
Cost C 0.1675	C-1	0.746	0.0315	0.3020	0.6660	0.00392	0.0377	0.0832
	C-2	0.176	0.0698	0.2573	0.6718	0.00205	0.00758	0.0198
	C-3	0.022	0.1102	0.3230	0.5675	0.00040	0.00119	0.0020
	C-4	0.056	0.0743	0.6021	0.3233	0.00069	0.00564	0.0030
Quality Q 0.7402	Q-1	0.660	0.0525	0.02568	0.6908	0.0256	0.1254	0.330
	Q-2	0.2062	0.0625	0.1830	0.7543	0.0095	0.0279	0.1140
	Q-3	0.0761	0.7268	0.0759	0.1973	0.0409	0.0042	0.0111
	Q-3	0.5750	0.7799	0.1603	0.0595	0.3319	0.0682	0.0253
Service S 0.0932	S-1	0.6042	0.7608	0.00613	0.2326	0.0428	0.000345	0.0130
	S-2	0.1189	0.7866	0.0332	0.180	0.00817	0.00367	0.00199
	S-3	0.0689	0.2960	0.0850	0.6183	0.00190	0.00540	0.00397
	S-4	0.0211	0.7010	0.0970	0.250	0.00137	0.00190	0.00491
						0.4612	0.2793	0.5770

TABLE 4: VENDOR RANKING USING AHP METHOD

Vendor Rating	Vendor 1	Vendor 2	Vendor 3
AHP	0.4612	0.2793	0.5770
Rank	2	3	1

FIGURE 9: OVER ALL COMPARISON OF VENDOR'S PERFORMANCE USING AHP



RESULTS OF AHP MODEL

In Table 3 and 4 based on the comparison of vendors and the methods applied it can be seen that vendor 3 is the preferred, since it has the highest weight of (0.5770) among three vendors. Vendor 1 is at the second choice (0.4612) and vendor 2 is at the last choice (0.2793). Figure 4 and table 9 explains the overall comparison of vendor ratings using AHP in the form of bar charts whose values are shown in Figure 4. Interestingly, the finding using the AHP approach is consistent with the determined vendor selection. It can be claimed that in this instance there are no clear decisions as to the best option especially between vendor 3 and vendor 1 since the difference is very low. In practice, sensitivity analysis should be carried out to determine the robustness of such decisions with respect to variations in the pair-wise rankings. An analysis can be made based on the changes in the significance of each sub-factor relative to others.

PROPOSED SUPPLY CHAIN MODEL FOR SUPPLY CHAIN

FIGURE 10 PROPOSED SUPPLY CHAIN MODEL FOR SUPPLY CHAIN

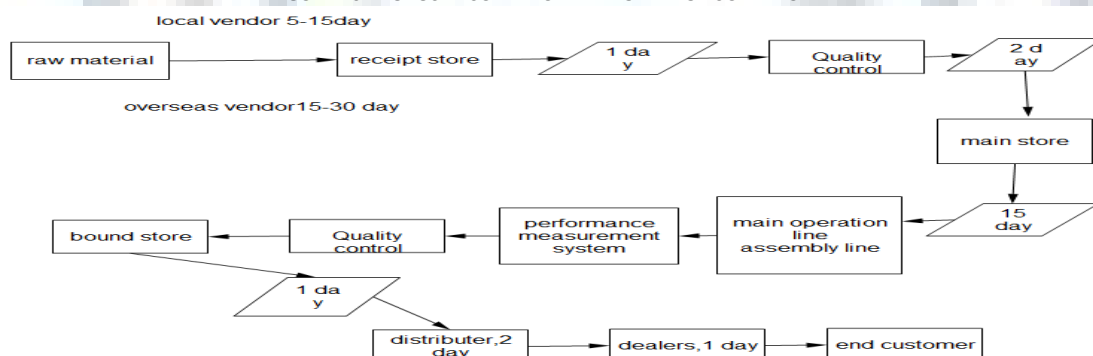


TABLE 5: COMPARISON OF EXISTING AND PROPOSED MODEL OF SUPPLY CHAIN

S.No.	Attributes.	Existing System.	Proposed System.
1.	Lead Time	High	Low
2.	Inventory	High	Reduced
3.	Quality of Service	Poor	Improved
4.	Information System	Ineffective	Effective
5.	Material Flow	Complex	Smooth
6.	Transportation Cost	High	Reduced
7.	Stock out	High	Reduced
8.	Sales	Low	Improved
9.	Documentation	Unstructured	Structured
10.	Vendor Rating	Absent	Initiated
11.	Spoilage	High and ignored	Decreased and Recycled
12.	Quality Assurance	Absent	Designed
13.	Customer Feedback	Absent	Initiated
14.	Supply Chain	Fragmented	Integrated

SUMMARY OF WORK DONE

- The existing supply chain of XYZ was reviewed and opportunities available for improvement have been identified.
- The existing planning process has been revised to make it more responsive to the market
- A strategic decision model using AHP framework for improving inbound logistics and good manufacturer-supplier relationship has been developed. The model contains inbuilt flexibility and it will be helpful to the XYZ Ltd. to meets the changing demand of the end customer.

EXPECTED BENEFITS TO COMPANY

- By implementing the suggested models the company will be able to meets the customer's expectation with desired flexibility. The models are flexible enough to react quickly to changing market scenario.
- Necessary change for improvement is thus possible as a result of inbuilt flexibility in the model.
- Rapid introduction of new or modified product.
- By sharing information, supply chain partners will be able to respond more rapidly to known demand and to do so with less inventory in the system as a whole and hence at lower cost.
- Reduction in lead-time of vendors due to online procurement and low operating costs by collaborated planning among the supply chain partners.

CONCLUSIONS AND DISCUSSION

This project concerned itself with developing a decision support model and performance measurement frame work which could give the management of XYZ Limited the flexibility and support to take strategic level, operational level and planning and control decisions effectively. A system analysis indicated that the flow of materials and information in the supply chain is complex with logistics strategy, changing demand and multiple parts, a choice of different objectives by the manager and the uncertainties associated with them. Due to these complexities, there is scope for assisting the managers to improve the decision effectiveness by using the developed models. Part of the difficulty in analytically modelling strategic decisions is their basis on quantitative and qualitative information with multiple dimensions. A quantitative model that can be used to integrate qualitative information and quantitative values and analysis is the Analytic Hierarchy Process (AHP) but a primary limitation is that its basic relationships do not allow for an integrated dynamic modelling of the environment. AHP assumes the system elements are uncorrelated and are single directionally influenced by a hierarchical relationship. The advantage of this approach helps management to better structure the decision to approach towards flexible supplier-manufacturer relationship with trust in online procurement. It also provides a structure for an organization to develop and enhance a logistics strategy. This analysis framework can be used for selection or justification of various logistics strategies and systems for trust building e-markets.

All the above models were discussed with the management of XYZ and management had appreciated the work done under this project.

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INFORMATION CONTENT OF DIVIDENDS: EMPIRICAL STUDY OF BSE LISTED COMPANIES

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ABSTRACT

This study reports that the internationally observable phenomenon of positive reaction of stock market to the announcements of cash dividend increases persists in India also. 667 events of dividends increase announcements of BSE listed companies have been studied with the help of event study methodology. The results found that 58% events have generated positive and significant return of 1.26%. The positive reaction starts two days before the formal announcement of dividends and it continues after two days of the dividend announcements. However, the abnormal returns are highest i.e. 1.26% on day 0 i.e. announcement day and are highly significant. Further regression analysis of cumulative abnormal returns with company specific variables shows the presence of signaling, maturity and under-valuation hypotheses, whereas, free cash flow and agency hypotheses are rejected. In addition, no significant information leakage is found before the formal announcement of dividend increase.

KEYWORDS

Agency Costs, Event study, Free cash Flow, Information Signaling and Maturity hypothesis.

INTRODUCTION

The financial manager of a firm performs three major tasks i.e. allocation of funds (investment decision), generation of funds (financing decision) and distribution of profits (dividend decision). The third decision is concerned with dividend policy of the firm. The dividend policy includes the percentage of earnings paid to stockholders in cash dividends, the stability of absolute dividends about a trend, stock dividends, stock splits and the repurchase of stock (Rao, 1994; Van Horne, 2002). Miller and Modigliani (1961) made a comprehensive argument for irrelevancy of dividend payout. They say that dividend does not affect the wealth of shareholders. They argue that the value of the firm is determined by the earning power of the firms' assets or its investment policy and the manner in which earning stream is split between the dividends and retained earnings does not affect this value. The crux of MM's position is that the effect of dividend payments on shareholders wealth is offset exactly by other means of financing. Since the pioneering work of Miller and Modigliani (1961), the value relevance of financial policies has been in the forefront of financial research. Most of the empirical literature focuses on the most common type of financial policy i.e. dividend payout. Still the topic of dividend policy remains one of the most controversial issues in corporate finance. For more than half a century, financial economists have engaged in modeling and examining corporate payout policy (Al-Malkawi, 2005). Thirty four years ago Black (1976) wrote that, 'The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that don't fit together'. Since then, a vast amount of literature has been produced examining dividend policy. Recently Frankfurter *et al.* (2002) also commented in the same vein as Black that: "The dividend 'puzzle', both as a share value-enhancing feature and as a matter of policy, is one of the most challenging topics of modern finance/financial economics. Forty years of research has not been able to resolve it".

Earlier, empirical research was mainly focused on firms listed in developed stock markets. However, the wealth impact of financial policy changes in emerging markets is currently not well established. Given alternative market microstructure and different information and introduction of various reforms, the impact of financial policy changes is likely to vary across economic environment in emerging markets, particularly in India. The notion that corporate financial policy decisions can function as a signal of firms' profitability should be relevant in India. Corporate financial policy can function as a signal when asymmetric information exists between firms and their shareholders, and the existence of such asymmetric information is high in the Indian market for a number of reasons. The dissemination of information about a corporate entity may be slow in Indian market conditions and the information once received may lack sufficient detail to adequately judge a firm's quality (Lukose and Rao, 2002). So, Indian market provides an interesting opportunity to study the market behavior around announcements of managerial decisions. In this paper, the market response to the announcement of cash dividend increase is examined and the validity of competing hypotheses for the observed behavior of the market is tested.

REVIEW OF LITERATURE

Though many theories have been advanced on the impact of dividend changes on the stock prices, the present study is aimed to test the three main theories which are (i) Information Content of dividends (Cash Flow Signaling) (ii) Agency Costs and Free Cash Flow Hypothesis (iii) Maturity Hypothesis. Hence, the review of studies in this section is divided into three sub-parts. Notably, most of the studies have tested more than one hypothesis; hence these studies will appear under more than one category.

A. Information Content of Dividends (Signaling) Hypothesis: MM assumed that inside managers and outside investors have free, equal and instantaneous access to the same information regarding a firm's prospects and performance. But in reality, managers who look after the firm usually possess information about its current and future prospects that is not available to outsiders. This informational gap between insiders and outsiders may cause the true intrinsic value of the firm to be unavailable to the market. In an attempt to close this gap, managers may need to share their knowledge with outsiders so that they can more accurately understand the real value of the firm. Historically, due to lack of complete and accurate information available to shareholders, the cash flow provided by a security to an investor often formed the basis for its market valuation (Baskin and Miranti, 1997). In this way, dividends came to provide a useful tool for managers to convey their private information to the market because investors used visible (or actual) cash flows in the form of dividends instead of equity as a way of valuing a firm. Even MM (1961) suggest that when markets are imperfect, share prices may respond to changes in dividends. In other words, dividend announcements may be seen to convey implicit information about firm's future earnings potential. This proposition has since been known as the 'information content of dividends' or signaling hypothesis (Al-Malkawi, 2005).

TABLE 1: LIST OF STUDIES TESTING INFORMATION CONTENT OF DIVIDENDS (SIGNALING) HYPOTHESIS

Sr. No.	Study	Year of Study	Country/Stock Exchange Sample size	Methodology	Market Reaction to announcement	Supported or Rejected
1	Pettit (1972)	1964-68	USA-NYSE 625 firms 1000 events of dividend change	Market model	Positive	Yes
2	Watts (1973)	1945-67	USA 310 firms Dividend increase	Cross sectional regression	Positive but insignificant	Yes
3	Laub (1976)	1946-65	USA 30 firms	Comparative analysis	N.T	Yes
4	Aharony and Swary (1980)	1963-76	USA-NYSE 149 firms	Market model	Positive	Yes
5	Kwan (1981)	1973-77	USA-NYSE 183 events	Lintner model, Fama-Babiak model	Positive	Yes
6	Akhigbe <i>et al.</i> (1983)	1969-91	USA 253 firms	Event study, Cross sectional regression	Positive	Yes
7	Asquith and Mullins (1983)	1964-80	USA 168 firms	Event study	Positive	Yes
8	Divecha and Morse (1983)	1977-79	USA-NYSE 1039 events of 668 firms	Event study	Positive	Yes
9	Woolridge (1983)	1970-77	USA-NYSE 225 firms	CPRA	Positive	Yes
10	Ofer and Siegel (1987)	1976-84	USA NYSE and AMEX	OLS regression	N.T	Yes
11	De-Angelo <i>et al.</i> (1992)	1980-85	USA-NYSE 167 firms	Logit regression analysis	N.T	No
12	Loderer and Mauer (1992)	1980-84	USA NYSE/AMEX 450 events of 350 firms	Market model, Regression model	Negative	No
13	Bhat and Pandey (1994)	1986-91	India 425 companies 31 respondents	Survey	N.T	Yes
14	Denis <i>et al.</i> (1994)	1962-88	USA NYSE/AMEX 5992 dividend increase 785 dividend decrease	Event study, Cross-sectional regression	Positive	Yes
15	Rao (1994)	1987-89	India-BSE 65 dividends 42 bonus issues 40 right issues	Event study methodology	Positive	Yes
16	Bajaj and Vijh (1995)	1962-87	USA NYSE 67592 events	Market model, WLS regression, OLS regression	Positive	Yes
17	Yoon and Starks (1995)	1969-88	USA NYSE 3748 dividend increase 431 dividend decrease	Event study, cross-sectional regression	Positive	Yes
18	Amihud and Murgia (1997)	1988-92	Germany FSE 200 firms 255 dividend increase 51 dividend decrease	Event study, Regression	Positive	Yes
19	Benartzi <i>et al.</i> (1997)	1979-91	USA NYSE and AMEX 1025 firms	Regression analysis	Positive	No
20	El-Khouri and Almwalla (1997)	1989-93	Jordan Amman Financial Market 20 firms	N.A	Negative	No
21	Dewenter and Warther (1998)	1982-93	420 US 194 Japan events of dividend omissions and initiations	Event study, Cross-sectional regression	Negative and Positive respectively	Yes
22	Nissim and Ziv (2001)	1963-98	USA NYSE/AMEX 811 dividend decrease 13221 dividend increases 86634 no-change events	Categorical and cross sectional regression analysis	N.T	Yes
23	Travlos <i>et al.</i> (2001)	1985-95	Cyprus stock exchange 41 dividend increase, 39 bonus events	Standard event study, Regression	Positive	No
24	Grullon <i>et al.</i> (2002)	1967-93	USA NYSE and AMEX 6284 dividend increases 1358 dividend decreases	Regression analysis	Positive	No
25	Reddy (2002)	1989-2001	India NSE and BSE All listed companies	Logit regression	N.T	No
26	Omet and Abu-Ruman (2003)	N.A	Jordan 47 CFOs	Survey	N.T	Yes
27	Anand (2004)	2001	India 474 private sector firms 51 public sector firms 81 responses	Survey Factor analysis, Principal component analysis	N.T	Yes
28	Al-Malkawi (2005)	1989-2000	Jordan Amman stock exchange 160 firms	Tobit and Probit models	N.T	No
29	Kaur and Singh (2005)	1999-2001	India-BSE 80 events of dividend increase	Standard event study, CPRA, Sign test	Positive	No
30	Yong <i>et al.</i> (2006)	1996-2000	Malaysia-KLSE 233 dividend increase 145 dividend decrease 211 no change in dividends	CPRA	Negative	No

Source: Compiled from various studies

Note: N.A: Not Available, N.T: Not Tested

From the above table it can be seen that there is controversy regarding the dividend increase announcements having information content (signaling). De-Angelo *et al.* (1992), Loderer and Mauer (1992), Benartzi *et al.* (1997), El-Khouri and Almwalla (1997), Travlos *et al.* (2001), Grullon *et al.* (2002), Reddy (2002), Al-Malkawi (2005), Kaur and Singh (2005) and Yong *et al.* (2006) did not support for information signaling hypothesis while Pettit (1972), Watts (1973), Laub (1976), Aharony and Swary (1980), Kwan (1981) and Akhigbe *et al.* (1983) have found support for information signaling hypothesis in US markets.

B. Agency Costs and Free Cash Flow Hypothesis MM based their argument of dividend being irrelevant on the assumption that there are no conflicts of interests between managers and shareholders. However, in practice, the objective functions of the shareholders are distinct from its management. Managers might take actions that are costly to shareholders, such as enjoying more perquisites or over-investing in managerially rewarding, but unprofitable activities. Thus, shareholders incur (agency) costs associated with monitoring managers' behaviour and these agency costs are implicit cost resulting from the potential conflict of interests among shareholders and managers. The payment of dividends might serve to align the interests and alleviate the agency problems between managers and shareholders, by reducing the discretionary funds available to managers (Rozeff, 1982; Easterbook, 1984; Jensen, 1986 and Al-Malkawi, 2005). Similarly, Jensen (1986) free cash flow hypothesis suggests that free cash flow may be used by firms to invest in negative NPV projects. Jensen contended that firms with excess cash flow give managers more autonomy for using the funds in a way that benefit themselves but not shareholders. He argued that managers have incentives to enlarge the size of their firms beyond the optimal size to expand the resources under their control. Managers may ask for increased compensation based on increased firm size (Gaver and Gaver, 1993). Thus, if a firm has excessive free cash, the overinvestment problem will be more pronounced and managers may undertake negative NPV projects. Increasing dividends by firm with excessive free cash flow will reduce this overinvestment problem. Increasing dividend payouts may help to mitigate the free cash flow under managers' control, thereby preventing them from investing in negative NPV or poor projects. As a result, paying more dividends will reduce the agency costs between managers and shareholders. Similarly, reducing dividends by such firms will increase the probability that negative NPV projects will be undertaken. Market considers increasing dividends as value-adding and decreasing dividends as increasing the value of the firm (Lang and Litzenger, 1989 and Liu, 2003).

TABLE 2: LIST OF STUDIES TESTING AGENCY COSTS AND FREE CASH FLOW HYPOTHESIS FOR DIVIDENDS

Sr. No.	Study	Year of Study	Country/Stock Exchange Sample size	Methodology	Market Reaction to announcement	Supported or Rejected
1	Rozeff (1982)	1981	USA 1000 firms	OLS Regression	N.T	Yes
2	Lang and Litzenger (1989)	1979-84	USA 429 events	N.A	Positive	Yes
3	Dempsey and Laber (1992)	1981-87	USA Dividend events	Regression models	N.A	Yes
4	Howe <i>et al.</i> (1992)	1979-89	USA 55 self tender offers 60 special dividends	Event study, Cross sectional regression	Positive	No
5	Jensen <i>et al.</i> (1992)	1982, 1987	USA 1982-565 firms 1987-632 firms	Three stage least square regression	N.T	Yes
6	Alli <i>et al.</i> (1993)	1985	USA-NYSE 105 firms of 34 industries	Factor analysis and Multiple regression	N.T	Yes
7	Denis <i>et al.</i> (1994)	1962-88	USA NYSE/AMEX 5992 dividend increase 785 dividend decrease	Event study, Cross-sectional regression	Positive	No
8	Yoon and Starks (1995)	1969-88	USA NYSE 3748 dividend increase 431 dividend decrease	Event study, cross-sectional regression	Positive	No
9	Holder <i>et al.</i> (1998)	1980-90	USA 477 firms	Econometric model	N.T	Yes
10	Saxena (1999)	1981-90	USA NYSE 235 unregulated 98 regulated	Correlation, OLS regression	N.T	Yes
11	Lie (2000)	1978-93	USA 570 special dividend 7417 regular dividend increases 207 self-tender offers	Event study	Positive	No
12	La Porta <i>et al.</i> (2000)	1989-94	33 countries 4000 companies	Regression analysis	N.T	Yes
13	Mollah <i>et al.</i> (2000)	1988-97	DSE 153 non-financial firms	Pooled and cross-sectional OLS regression	N.T	Yes
14	Travlos <i>et al.</i> (2001)	1985-95	Cyprus CSE 41 dividend increase, 39 bonus events	Standard event study, Regression	Positive	No
15	Dong <i>et al.</i> (2002)	Oct. 4-8, 2002	Netherlands Dutch consumer panel 2723 households 555 respondents	Survey	N.T	No
16	Fuller and Thakor (2002)	1980-2000	USA NYSE, AMEX, NASDAQ 10504 dividend increase	Market-model, Regression	Positive	Yes
17	Manos (2002)	2001	India-BSE 668 non-financial firms	OLS regression, Tobit model	N.T	Yes
18	Al-Malkawi (2005)	1989-2000	Jordan Amman stock exchange 160 firms	Tobit and Probit models	N.T	Yes

Source: Compiled from various studies

Note: N.A.: Not Available; N.T: Not tested

From the above table, we can see that various studies have given mixed results. Rozeff (1982), Lang and Litzenger (1989), Dempsey and Laber (1992), Jensen *et al.* (1992), Alli *et al.* (1993), Holder *et al.* (1998), Saxena (1999), La Porta *et al.* (2000), Mollah *et al.* (2000), Fuller and Thakor (2002), Manos (2002) and Al-Malkawi (2005) have found support for agency cost and free cash flow hypothesis while others have not found any support for this hypothesis.

C. Studies Testing Maturity Hypothesis for Dividends: Generally, mature companies are likely to be in their low-growth phase with fewer opportunities (Barclay *et al.*, 1992; Deshmukh, 2003). These companies are relatively older and do not have the incentives to build-up reserves as a result of low growth and few capital expenditures, which enable them to follow liberal dividend policy. On the contrary, new or young companies need to build-up reserves to face their rapid growth and financing requirements. Hence, they retain most of their earnings and pay low or no dividends.

Grullon *et al.* (2002) hypothesized that dividend increases signal a firm's long-term transition from growth phase to a more mature phase (with a resultant decrease in systematic risk). They found that firms that increase dividends experienced a significant decline in their systematic risk (as measured by changes in

the factor loadings from the Fama-French (1993) three factor model) and that the positive market reaction to the announced dividend increase was related to the decline in systematic risk and hence decline in their cost of capital. They found that the profits of dividend increasing firms declined after the dividend increase. Thus, they rejected cash flow signaling hypothesis. They proposed maturity hypothesis as the explanation of their findings.

Al-Malkawi (2005) in a study of Jordan capital market also found that mature firms with less growth and investment opportunities are more likely to pay dividends, thus consistent with maturity hypothesis.

To summarize, the empirical results for the information content, agency costs and maturity hypotheses as explanation of dividend policy are mixed. Majority of the studies referred in above discussion have been conducted on firms operating in developed markets, especially in US markets. Very few studies have been conducted in emerging economies like India. Hence, the need for present study.

DATA SOURCES AND METHODOLOGY

The sample in this section consists of events of dividend increase announcements of BSE listed companies for the period 1999-2004. The announcement dates and other relevant information is taken from Prowess and/or Capitaline database. The firms with infrequent trading are not included in the sample. Firms to be included in sample should have paid 5 percent annual dividend in the previous year and increased annual dividend by at least 10 percentage points in the current year under study. The initial sample contains a total of 816 events of dividend increase during 1999-2004 by companies listed on BSE. Of these, concurrent events of bonus announcements are excluded, so as to prevent contamination of announcement returns. Further, some events are excluded because returns data was either not available or it was infrequent during estimation window or event window or both. The final sample under market model therefore, consists of 667 events of clean dividend increase announcements meeting all the above criteria for BSE .

In this study, conventional event study methodology is employed to evaluate the stock market reaction to the firm-specific event of share buy-back announcements. In this study, we define t = 0 as the event date, and the 21 day trading period from t = -10 to t = +10 as the event window and 100 days trading period from t = -110 to t = -11 prior to the event date is taken as the estimation window. This period is used to estimate the market-model parameters such as α and β . The market model is used as the normal performance return model. The BSE 30 Sensex has been taken as the benchmark index for calculating the market return.

The statistical significance of the average return (AR) is determined by using the usual t-statistic, which is computed for each period as:

$$t(AAR) = AAR_t / SE(AAR_t) \dots\dots\dots(1)$$

Where SE (AAR_t) is the standard error of the average abnormal return on day t and (AAR_t) is the t-statistic (with n-1 degrees of freedom) for the null hypothesis that the average abnormal return in any given day is zero.

Multiple regression models of ordinary least squares (OLS) are used to decompose announcement return into various factors. This technique reveals the extent and direction of relationship between dependent variable and several independent variables. The adjusted R² generated by it indicates the proportion of variation in the dependent variable explained by the independent variables.

PRICE REACTION TO DIVIDEND INCREASE ANNOUNCEMENTS

Table 3 displays the results for the sample of increase in dividends for BSE listed companies. Daily mean abnormal returns (AR) and cumulative abnormal returns (CAR) for a twenty-one day period centered on the announcement day are shown. From the table it is found that stock market has started reacting positively even before the formal announcement of dividends. Significant positive abnormal returns are found from day -2 to day +2. The mean daily abnormal return of 1.26% is found on the day 0, which is highly significant. It is found that the (-10 to +10) event window generates a cumulative abnormal return of 4.12% which is statistically significant at 1% level. The three days' cumulative abnormal return around the event announcement i.e. (-1 to +1) is 2.55% which is highly significant. It is so because market starts reacting positively in advance and this effect remains even after the event announcement. Moreover, some times, the announcement is made at the closing time of the day and its effect is found in the next day's trading.

The table also shows the percentage of events showing positive returns (MPRZ) in the event window. As the market anticipates the event, the percentage of events generating positive returns also start rising before the formal announcement of the event. The percentage of events

TABLE 3: MARKET REACTION TO DIVIDEND INCREASE ANNOUNCEMENTS

PANEL A: DAILY ABNORMAL RETURNS (AR)

Trading Day	Abnormal Returns (AR)	t value	Cumulative Abnormal Returns (CAR)	Mean Percentage of Returns Greater than Zero (MPRZ)
-10	0.2997	2.21**	0.2997	48.87
-9	0.1034	0.78	0.4032	47.68
-8	0.2332	1.67***	0.6364	50.37
-7	0.3308	2.55**	0.9672	50.97
-6	0.1089	0.82	1.0761	46.93
-5	0.1730	1.34	1.2492	47.38
-4	0.2274	1.65***	1.4766	50.82
-3	0.1038	0.84	1.5804	47.98
-2	0.4589	3.57*	2.0394	52.76
-1	0.6519	4.17*	2.6914	53.21
0	1.2590	7.04*	3.9504	58.29
1	0.6298	3.67*	4.5802	51.56
2	0.2915	1.95***	4.8718	48.28
3	-0.1401	-1.04	4.7316	45.14
4	-0.2070	-1.69***	4.5245	45.14
5	0.0020	0.01	4.5266	46.18
6	-0.1685	-1.17	4.3581	44.24
7	-0.0317	-0.26	4.3263	46.18
8	0.0017	0.01	4.3280	46.33
9	-0.1692	-1.42	4.1587	44.39
10	-0.0405	-0.32	4.1182	46.78

PANEL B: CUMULATIVE ABNORMAL RETURNS

Intervals	CAR	t values
-10 to -1	2.69	6.76*
-5 to -1	1.62	5.45*
-1 to +1	2.55	8.13*
0	1.26	7.04*
-10 to +10	4.12	6.15*

Note: *, ** and *** denotes significant at 1%, 5% and at 10% respectively

with positive returns is 52% on day -2 which rises to 58% on the announcement day. After that it slowly decreases. The results are consistent with previous studies in U.S markets as well as in Indian stock market that investors welcome increase in cash dividends as the announcements are associated with significant positive abnormal returns.

FIG. 1: MARKET REACTION TO DIVIDEND INCREASE ANNOUNCEMENTS

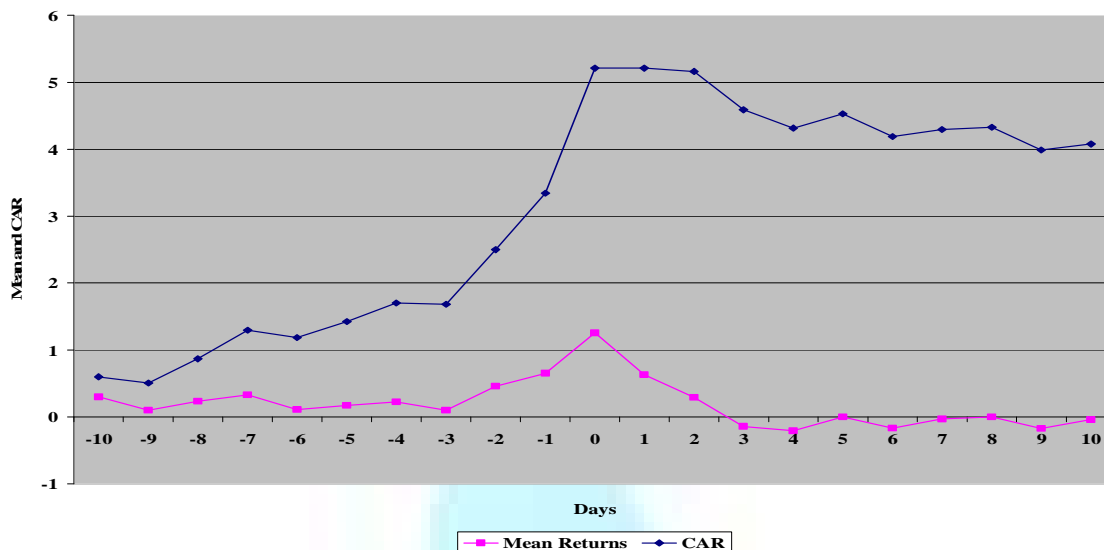


Figure 1 plots the mean abnormal returns and cumulative abnormal returns during the 21-day event window. It highlights that the positive abnormal return start to pick up on day -4. With a slight decline on day -3, the curve of mean abnormal returns shows a continuous rise up to day 0. The mean abnormal return is highest at 1.26% on day 0 and starts declining afterwards. Similarly, the curve of cumulative abnormal returns shows a steep increase after day -3 and is highest at day +2. Thereafter, it is relatively stable and shows little fluctuations. The presence of significant positive abnormal return from day -4 suggests that stock market appears to anticipate the information or there exists some information leakage or both.

DETERMINANTS OF ANNOUNCEMENT RETURNS

The information content of dividends (signaling) hypothesis has been widely discussed in literature on finance. In a world of imperfections, there is generally an information asymmetry between insiders (managers) and outside investors (shareholders). It is assumed that managers possess more information about a firm’s current and future prospects than outsiders. In this study, change in return on asset (ROA) subsequent to the year of dividend increase announcement is used as a proxy to test signaling hypothesis. Since the theory posits that improved operating performance is included in the “content” of the signal. ROA here means operating profit scaled by total assets of the firm. The larger the change in ROA, the stronger the positive signal about future operating cash flows that is conveyed through dividend increase announcements. If the signaling hypothesis explains cash dividends increase announcements well, a stronger positive stock market reaction to dividend increase announcement is expected for stronger post-event operating profit improvements. So, the coefficient of change in ROA is expected to be positive. Another variable, natural log of book value of total assets (LTA) measured at the end of each firm’s financial year, which is used as a proxy for the firm size, is included to test the information asymmetry. LTA is expected to have negative relation with cumulative abnormal returns (CAR) as smaller firms are expected to have larger information asymmetry and vice-versa. As stated earlier, firms with greater information asymmetry will have to pay more dividends to signal the same level of information asymmetry. This hypothesis can be examined by identifying the relationship between information asymmetry and dividend payouts. Increase in dividend percentage (DIVPER) can reasonably be used as a proxy to signal the level of future earnings and thus induce strong market reactions to the announcement of dividend increases.

The agency costs hypothesis posits that dividends can be used as a mechanism to alleviate agency problem (Rozeff, 1982; Easterbook, 1984; Jensen *et al.* 1992). The payment of cash dividends reduces the funds available to managers forcing them to approach the capital markets to obtain funds through external financing. Raising money from the capital market will subject managers’ behaviour to greater monitoring by investment professionals such as bankers and financial analysts. Different studies have used different variables as proxies to test the agency costs hypothesis. Following Reynolds (2004) and Washer (1998), this study has used free cash flow-to-total asset (FCFTA) ratio as a proxy for firm’s relative cash inflow to test the free cash flow hypothesis. Free cash flows are defined as net income plus non-cash expenses like depreciation and amortization. FCFTA is expected to have positive relation with announcement related cumulative abnormal returns (CAR).

According to the “maturity hypothesis” presented by Grullon *et al.* (2002), as firms become mature; their growth and investment opportunities shrink, resulting in a decline in their capital expenditures. These companies are relatively older and do not have the incentives to build-up reserves as a result of low growth and few capital expenditures, which enable them to follow liberal dividend policy. On the contrary, new or young companies need to build-up reserves to face their rapid growth and financing requirements. Hence, they retain most of their earnings and pay low or no dividends. Following Barclay *et al.* (1995), Travlos *et al.*, (2001) and Al-Malkawi (2005), this study has used price-to-book ratio (P/B) ratio as a proxy to test whether growth opportunities are negatively related with cumulative abnormal return on the announcement of dividend increase.

The above three hypotheses can be tested under cross-sectional regression analysis – the analysis of cumulative abnormal returns (CAR) around the dividend increase announcement. CAR is measured as the cumulative abnormal return over three days around the announcement i.e. -1 to +1

$$CAR = \sum_{t=-1}^{+1} AR_{i,t}$$

day, as the dependent variable. Different proxy variables to test the above discussed hypotheses are included as independent variables. Information leakages may have effect on stock price change on announcement date. To account for this, the variable PRECAR which is defined as the cumulative abnormal return from -10 to -2 is also included as an explanatory variable.

The preceding discussion can be summarized in the following regression equation. The predicted signs of the coefficients are in the parentheses below the variables.

$$CAR(-1+1) = a_0 + a_1ROA + a_2DIVPER + a_3LPB + a_4FCFTA + a_5LTA + a_6PRECAR \dots\dots\dots(2)$$

(+) (+) (-) (+) (-) (-)

TABLE 4: PROXY VARIABLES USED IN STATISTICAL ANALYSES

Proxy Variable	Hypothesized Sign	Rationale
ROA	+ve	Signaling
DIVPER	+ve	Signaling
LPB	-ve	Undervaluation, Maturity
FCFTA	+ve	Agency Costs, Free Cash Flow
LTA	-ve	Information Asymmetry
PRECAR	-ve	Information Leakage

TEST RESULTS

The regression is run for four times because market reaction to the dividend increase announcements has been analysed for BSE and NSE listed companies separately. Also, abnormal returns have been calculated by using standard event study methodology and comparison period return approach (CPRA). So, four regression equations are estimated i.e. two for BSE listed companies and two for NSE listed companies.

REGRESSION ANALYSIS OF DIVIDEND ANNOUNCEMENT RETURNS (MARKET MODEL) IN BSE

In this section, cumulative abnormal returns using standard event study methodology is used as dependent variable for dividend increase events of BSE listed companies.

TABLE 5: DESCRIPTIVE STATISTICS

Variables	Mean	Standard Deviation
CAR	2.506009	8.118074
ROA	-0.12617	5.191158
DIVPER	30.79393	48.75361
LPB	0.181989	0.440779
LTA	2.768075	0.784282
FCFTA	0.143426	0.078986
PRECAR	2.081466	9.72046

The table 5 shows the mean, standard deviation and number of observation taken for study. The table 6 presents the correlation matrix and variance inflation factors (VIF) for all the explanatory variables used in the regression analysis.

TABLE 6: PEARSON CORRELATIONS MATRIX AND VIFS OF EXPLANATORY VARIABLES

	ROA	DIVPER	LPB	LTA	FCFTA	PRECAR
ROA	1					
DIVPER	-0.01468	1				
LPB	-0.02747	0.179449	1			
LTA	0.026462	0.105457	-0.00286	1		
FCFTA	-0.15445	0.251008	0.499312	-0.32469	1	
PRECAR	-0.1273	-0.00474	-0.08553	-0.03316	-0.01752	1
VIF	1.04755	1.398772	1.211439	1.211439	1.696927	1.0259

Table 6 shows that the maximum value of correlation is 0.499 which is between LPB and FCFTA. As a general rule, if the absolute value of the sample correlation between any two independent variables in the regression is greater than 0.7, multi-collinearity is a potential problem. It can be seen from the table that no pair of correlation is higher than 0.7. VIF's are also calculated for individual variables. It is another tool to check the problem of multicollinearity. As a general rule, if one of the individual VIF's is greater than 10, there is an indication of multicollinearity problem (Gujarati, 1995). The VIF values reported in table 5.3 are small (much less than 10) with maximum value of 1.697. So, the analysis is free from the multicollinearity problem. Table 7 shows the regression coefficients, their t-values and significance levels which are explained as under:

First, the coefficient for ROA is positive and significant at 1% level. This finding supports the much discussed signaling hypothesis. Thus market reaction to the dividend increase announcements depends upon the future operating performance of the company. If the market expects that firm will perform better in future, it reacts positively to the dividend increase announcement. Based on this hypothesis, the managers use dividend increase as a signal for improved performance of the firm in future. This finding is consistent with Reynolds (2004).

TABLE 7: FACTORS AFFECTING DIVIDEND ANNOUNCEMENT RETURNS IN BSE (MARKET MODEL)

Variables	Dependent Variable- CAR (-1 to +1)	
	Parameters (β)	t value
Intercept	6.586008	4.30644*
ROA	0.156258	2.652319*
DIVPER	0.008234	1.271953
LPB	-5.55971	-6.93436*
LTA	-1.20252	-2.86761*
FCFTA	0.59097	0.119919
PRECAR	-0.02793	-0.89702
R Squared	0.110	
F Statistics	13.518*	
Number	664	

Note: *, ** and *** denotes significant at 1%, 5% and 10% level respectively

Secondly, the coefficient of increase in dividend percentage (DIVPER) is positive but insignificant. Thus, it can be said that only the direction of dividend change is important and not the magnitude of dividend increase to induce the market reaction to dividend changes.

Third, the coefficient of price-to-book ratio (LPB) is negative as expected and it is highly significant, thus, supporting the maturity hypothesis which states that firms with low P/B ratios have lower future growth and hence, they pay high rate of dividend. While, the firms with high P/B ratios are growth firms and these firms want to retain their funds for future investment and hence, pay low or no dividends. Thus, firms with low P/B ratios have more free cash flows available to be paid as dividends. Grullon *et al.* (2002) pointed out that a dividend increase is a sign of firm's transition from higher growth phase to a lower growth phase. The result also supports undervaluation hypothesis. The firms which are considered to be undervalued, having low P/B ratio will pay more dividends in order to increase the market value.

Fourth, the coefficient of natural log of total assets (LTA) is negative as expected and is significant at 1% level. Thus, it supports the information signaling hypothesis. As small firms have larger information asymmetry as compared to their larger counterparts, the negative and significant coefficient shows that this information gap is filled by increasing the rate of dividends.

Fifth, the free cash flow to total assets (FCFTA) is found to have positive coefficient as expected, but it is insignificant. Thus, the results do not support free cash flow or agency theory in Indian Capital Markets.

Lastly, the pre-announcement cumulative abnormal return (PRECAR) is negative but insignificant, suggesting no significant information leakages.

Overall, the results supports information signaling, undervaluation and maturity hypothesis but rejects the agency costs or free cash flow hypothesis.

SUMMARY AND CONCLUSION

This study reports that the internationally observable phenomenon of positive reaction of stock market to the announcements of cash dividend increases persists in India also. It reports mean abnormal returns of 1.26% for cash dividend increases on the day of announcements for BSE listed companies. The abnormal returns are calculated by using the standard event study methodology with market model. The positive reaction starts two days before the formal announcement of dividends and it continues after two days of the dividend announcements. However, the abnormal returns are highest i.e. 1.26% on day 0 i.e. announcement day and are highly significant. 58% events are showing positive returns on announcement day. Further, regression results support signaling, maturity and under-valuation hypotheses, whereas, free cash flow and agency hypotheses are rejected. In addition, no significant information leakage is found before the formal announcement of dividend increase. The implications of these results are that managements of the companies increase dividend only when they are sure about the increase in profitability in future so that they can sustain the increased rate of profits in future. So, increased dividends are used as a signaling device. It is proved from the results that market anticipates the event that is why the positive reaction starts before the formal announcement of dividend increase. However, as the significant positive reaction continues after two days of the dividend announcement. This shows that Indian capital market is not efficient. Presence of maturity hypothesis state that only firms increasing dividends are mature as they are not interested in retaining earnings, rather they are liberal in paying dividends. Further, smaller firms have larger information asymmetry and they want to correct the undervaluation with increased dividends. In conclusion it can be said that 'actions speak louder than the words' and increased dividends have much information to signal.

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NEED FOR CONVERGING TO IFRS: THE NEW GLOBAL REPORTING LANGUAGE

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ABSTRACT

The idea of global harmonization of accounting standards stems from lack of comparability of financial statements across the world. Consistent, comparable and understandable financial information is the lifeblood of commerce and investing. In the attempt of generating such financial information, there are two sets of accounting standards that are accepted for international use—(i) the U.S. Generally Accepted Accounting Principles (GAAP) and (ii) the International Financial Reporting Standards (IFRS) issued by the London-based International Accounting Standards Board (IASB). Foreign subsidiaries of U.S. multinationals use U.S. GAAP. However, the rapid globalization of capital markets has highlighted the need for a uniform set of financial reporting rules worldwide. This has been the major driving force behind the convergence of accounting standards across the globe. The evolution of International Financial Reporting Standards (IFRS) marks the biggest revolution in financial reporting. The understanding and implementation of IFRS is not easy, the transition will be a tough challenge for the country as it requires a shift in the academic approach, along with regulatory challenges. As to cope up with this pressure of convergence, the only solution is to train the trainers and most importantly the academicians. As the major problem to cope up with convergence is the lack of timely and whole hearted acknowledgement to the need and importance of convergence by the academician and regulation authorities. That is why, this paper attempts to study the need and importance of convergence from the eyes of academicians involved in teaching finance and accounting.

KEYWORDS

Accounting Standards, GAAP, IASB, IFRS.

INTRODUCTION

In India, the accounting standards or accounting-related requirements are issued not only by the ICAI (Institute of Chartered Accountants of India) but also by various other regulatory bodies, such as SEBI (Securities and Exchange Board of India), RBI (Reserve Bank of India) and the IRDA (Insurance Regulatory and Development Authority). They now not only need to be consistent with each other but also with the IFRS. In search of a new financial order: one global standard for financial reporting makes sense. *Accounting Standards in India will undergo significant change from 1st April 2011, when the IFRS (International Financial Reporting Standards) come into force as per the recent proposal of The Institute of Chartered Accountants of India.* International Accounting Standards (IASs) were issued by the International Accounting Standard Committee (IASC) from 1973 to 2000. The International Accounting Standard Board (IASB) replaced the IASC in 2001. Since then, the IASB has amended some IASs and has proposed to amend others, has replaced some IASs with new International Financial Reporting Standards (IFRSs), and has adopted or proposed certain new IFRSs on topics for which there was no previous IAS. Through committees, both the IASC and the IASB also have issued Interpretations of standards, previously known as International Accounting Standards (IAS), are standards and interpretations adopted by the IASB adopted in April 2001, and renamed it IFRS.

The term International Financial Reporting Standards (IFRSs) has both a narrow and a broad meaning. Narrowly, IFRSs refers to the new numbered series of pronouncements that the IASB is issuing, as distinct from the International Accounting Standards (IASs) series issued by its predecessor. More broadly, IFRSs refers to the entire body of IASB pronouncements, including standards and interpretations approved by the IASB and IASs and SIC interpretations approved by the predecessor International Accounting Standards Committee. Accordingly, International Financial Reporting Standards comprise:

- *International Financial Reporting Standards (IFRS) - standards issued after 2001*
- *International Accounting Standards (IAS) - standards issued before 2001*
- *Interpretations originated from the International Financial Reporting Interpretations Committee (IFRIC) - issued after 2001*
- *Standing Interpretations Committee (SIC) - issued before 2001*
- *Framework for the Preparation and Presentation of Financial Statements*

LITERATURE REVIEW

In the recent years, the academic research on the IFRS has been increasingly focused on assessing the need, importance and challenges of convergence to IFRS. Ball (2005) showed concern about substantial differences among the countries' implementation of IFRS, which may have risk uniformity. The researcher also feels that simply having uniform standards may not produce the required impact of uniform financial reporting if the approach and objectives of accounting differ. Carmona and Trombetta (2008) evaluated the logic and implications of the principles-based system and suggested that the principles-based approach to the standards and its inner flexibility enables the application of IAS/IFRS to countries with diverse accounting traditions and varying institutional conditions. Furthermore, he said that "the principles-based approach involves major changes in the expertise held by accountants and, hence, in their educational background, training programs and in the organizational and business models of accounting firms". Hboxma (2008) pointed out that the most significant discrepancy between the two sets of standards in accounting treatment of business combination, provisions financial instruments and business assets with reference to both net income and share holder's equity while the individual accounting differences in property, plant and equipment show a significant difference only on share holders' equity.

In the context of development of innovative financial products such as derivatives and hedge funds, the financial reporting standards must be high enough to anticipate potential crises relating to institutional governance and transparency aspects or to direct early distress signals so as to plug any loopholes [P.K. Chakraborty, 2009]. The quality financial reporting standards would augment the credibility of the organization and help it to establish its supremacy in the capital market as well as in the market in which it operates. Quality Financial Reporting (QFR) as the revolution that would bind the relationship of investors and creditors with the corporate which comes up with its frequent, transparent, true information.... Though implementing quality financial reporting is voluntary, the managers need to take the initiative in finding new ways in providing effective information which the markets are not getting through GAAP [Lingiseti Venu, 2009].

There is a flurry of studies on the challenges of convergence. A study [Garth Coppin, 2009] speaks about changes in the accounting standards due to changing business practices and how they affect the company's financial reporting mechanism. It is expected that globalization and impact of reforms will impact on harmonization and reporting, also the impact of International Accounting Standards (IAS) on Indian accounting and reporting [Pradeep Kumar Singh, 2009]. With exponential growth in cross-border investment and trading, there is a pressing requirement for globally accepted accounting standards. IFRS would be the right choice for a single global standard, since it has been prepared after wide consultation [C Padmavathi, 2009].

An in-depth study of exiting literature on IFRS highlights that it is also necessary that the national and regional regulators work closely with the IASB to ensure that IFRSs are interpreted correctly and consistently worldwide....a global acceptance of IASs/IFRSs reveals that voluntary adoption of IAS/IFRS by the companies is increasing [Md. Salim Uddin, 2009]. Accounting standards cannot override the provisions of law governing the preparation and presentation of financial

statements and all companies have to comply with the provisions of the Act [Sandip K Bhatt, 2009]. Cross-border capital flows in today's liberalized economic conditions demand fairly high standards of accounting information in corporate financial reporting. Differences in GAAPs of two countries exist due to the prevalence of different accounting rules of measurement, different interpretations of similar rules and varying degrees of financial statements [Prodeepa K. Samanta et al., 2009]. Country-level adoption of IFRS could be both economically more efficient and make the accounting much more credible to outsiders who need to rely on it [Sangeeta Makhija et al., 2009]. The idea of global harmonization of accounting standards stems from lack of comparability of financial statements across the country [Krishna Prasanna, 2009]. Further, there are sufficient empirical evidences that Indian companies, those wish to raise capital from abroad are making a beeline to publish accounts under US GAAP and lists the key differences between the US GAAP and the Indian standards [Pradeep Singh, 2009].

Many mechanisms incorporated by the corporate governance legislation worldwide were present in India earlier. The approach of Indian accountants and auditors appears to be driven by the spirit rather than by professional attitude and/or a systematic approach [Vishnu Kanhere, 2009]. With the spirit of fair play and interdependence, Indian accountants can equip themselves with newer tools and technologies and stand up to the best in the world.

THE PROBLEM

Convergence in India would be facilitated by the fact that historically, Indian accounting standards have been based on principles as against rules. Though, India has begun integrating with global financial markets. However, given the nature of accounting and peculiarities of the Indian economic environment, the process of convergence has its own challenges. As per the IASB, financial statements may not be described as complying with IFRSs unless they comply with all of the requirements of each applicable standard and each applicable interpretation. The understanding and implementation of IFRS is not easy, the transition will be a tough challenge for the country as it requires a shift in the academic approach, along with regulatory challenges. The major problem that companies are likely to face is a talent crunch since, even in the current scenario, there is a scarcity of qualified resources and the convergence will only exaggerate the problem. We can overcome this scarcity only if the academicians understand the need and importance of convergence and subsequently disseminate adequate knowledge to their students to cope up with this convergence. **Thus, the major problem to cope up with convergence is the lack of timely and whole hearted acknowledgement to the need and importance of convergence by the academician. As to cope up with this pressure of convergence, the only solution is to train the trainers and most importantly the academicians. That is why, this paper attempts to study the need and importance of convergence from the eyes of academicians involved in teaching papers in finance and accounting.**

RESEARCH OBJECTIVES

Following are the objectives of the study:

1. To expand an insight about the global financial reporting language i.e. IFRS.
2. To find out the level of awareness about convergence of Indian GAAP to IFRS.
3. To find out the need and importance of convergence of Indian GAAP to IFRS from academicians perspective.

RESEARCH METHOD

The present study is based on both primary and secondary data, an exploratory in nature, was conducted in the National Capital Region (NCR). Thus, the scope of the study in terms of geographical area been confined largely to National Capital Region (NCR). The selection of the respondents was governed by the principles of proportionate stratified but purposive sampling, where faculty teachings in private institutions were the respondents. In terms of respondents the scope of the present study has been restricted to analyse the views of 52 respondents teaching finance, accounting and taxation papers only. The survey has been carried out for private academic institutes imparting education in accounting and finance for any degree program. Teacher's sample represent 14 lecturers (L), 12 senior lecturers (SL), 15 assistant professors (AP) and 11 professors (P) thus, bringing total respondents number to 52. The alphabets L, SL, AP and P as written in brackets for different designations have been used in tables' titles for the purpose of presentation of the survey data. A structured questionnaire containing 14 questions relating to various aspects of awareness of convergence of Indian GAAP to IFRS has been developed. Specific questions relating to the need and importance have also been developed. As the magnitude of the need and importance depends on various factors such as can India sustain its economic growth without convergence to IFRS? Will India be a more attractive destination for foreign investment after convergence? Financial reports of Indian companies will be globally comparable if IFRS are adopted? Questionnaires were sent through emails and couriers and the data was analysed with the help of percentages.

ANALYSIS & RESULTS

AWARENESS ON THE EXTENT OF DEVIATION OF EXISTING INDIAN GAAP WITH IFRS: Table 1 reveals that 92% respondents in total believe that there is some kind of difference between existing Indian GAAP and IFRS. Only 2% respondents think that there is no difference between the two and about 6% respondents said that the both set of accounting standards are completely different. This question was not further analysed because of a very clear outcome that though a very big percentage of respondents were having an idea that there is some deviation, but neither professors nor lecturers could list down clearly even a single specific difference between the Indian GAAP and IFRS.

INDIA CANNOT SUSTAIN ITS PRESENT ECONOMIC GROWTH WITHOUT ACCEPTING CONVERGENCE: A straight question was put across that India can't stay for long in the global competitive market without convergence and cannot sustain its present growth rate without switching to IFRS. Table 2 reveals that 23% respondents in total strongly agree that we cannot sustain our growth without accepting convergence. 35% respondents agreed and a very much same percentage was indifferent about it. Only 7% disagreed and not a single respondent strongly disagree to the statement. Thus, leading to an inference that about 58% academicians involved in teaching accounting and finance papers agree that it is very much important to converge to IFRS if we want to sustain our present economic growth rate. Though 35% and 7% respondents respectively disagreed and were indifferent to this with no one strongly disagreeing to it. This finding commensurate with that of B Sujatha in the article "Convergence of Accounting Standards: Evolution and Trends", which traces the developments in financial reporting and accounting standards and highlights the need for convergence of accounting standards. Further, Professors were little conservative in their approach as the percentage of professor (23%) who either strongly agree to the statement or agree was less than of assistant professor (35%) and lecturers.

INDIA WILL BE VERY ATTRACTIVE DESTINATION FOR FDI AFTER CONVERGENCE: Table 3 reveals that a common financial reporting system in a country is so important that the country can be a very attractive destination for foreign investors if we put IFRS in place. Though, there were 37% respondents who either agreed or strongly agreed to the statement, whereas there were 51% respondents who were indifferent and only 11% disagreed to it. This is a clear indication that convergence is definitely going to increase the confidence of investors in the Indian companies as the reports will more comparable and 37% academicians involved in accounting and finance area supports this submission. It seems that those who have reservations to contribute the credit to IFRS for increasing the FDI have other factors like government policies, status of infrastructure, tax policies, political stability etc. in their minds---factors always considered important for promoting FDI.

FINANCIAL REPORTS OF INDIAN COMPANIES WILL GLOBALLY COMPARABLE AFTER CONVERGENCE: The article "Need for Harmonization of Accounting Standards" penned by Pawan Jain, talks about the reasons for a harmonized set of globally acceptable accounting standards, what benefits can be enjoyed with such a system. The similar inference is drawn by this study where, 50% respondents strongly agreed, 44% agreed, 6% were indifferent with none of them disagreeing to the statement that after introducing IFRS the financial reports of Indian companies would be more globally comparable than that of the present accounting standards. Thus, there was a strong consensus (94% of respondents) among accounting and finance academicians that the convergence of Indian

GAAP to IFRS will lead to more comparable and consistent financial report which in turn will build the confidence of foreign investors for investment in Indian companies.

PREPAREDNESS FOR CONVERGENCE FROM INDIAN GAAP TO IFRS: Respondents were asked to answer ‘yes’ or ‘no’ for four parameters to assess the understanding of preparedness on different levels, which has been tabulated in Table 5. This table reveals that about 85% of academicians believe that they are not prepared to cope up with the convergence, though 100% of the respondents suggested for the need of training to academicians on IFRS. According to 76% of respondents even practicing accountants are not prepared to cope up with the convergence. About 65% respondents believe that financial controllers in the corporate sector are not prepared and remaining 35% believe that they are. The probable attribute for such understanding seems to be awareness on different training programmes carried in the corporate sector. About 92% of respondents are of the view that tax officials in the country are not prepared well to cope up with the convergence. This observation supports the belief in general public that the government departments lack initiations for adopting any change. This table also brings out an observation that according to the academic community the corporate sector is the most prepared sector to meet the challenge of convergence.

CONCLUSION

In order to breathe meaning in the numbers and enable inter-period comparison, it is essential that similar accounting principles should have been used by the companies across the world despite of being their area of business operations. Besides, we would need IFRS-trained professionals in India for which the Institute of Chartered Accountants of India would need to impart special training to its students and members alike as the academicians involved in imparting education on financial reporting standards strongly support the need of introducing the IFRS. Though, respondents were aware that there is some kind of difference between Indian GAAP and IFRS but no one could answer precisely, leading to conclusion that there is urge for training of academicians for successful convergence of Indian GAAP to IFRS. There was a strong consensus among academicians involved in accounting and finance that the convergence to IFRS will lead to increased trust of foreign investors in the Indian companies and also the reports generated with the help of IFRS will be globally comparable.

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TABLES

TABLE 1: FREQUENCY AND PERCENT RESPONSE ON THE UNDERSTANDING OF DEVIATION OF EXISTING INDIAN GAAPS FROM IFRS

Statements	Frequency	Percent
No Deviation	1	1.93
Some Deviation	48	92.30
Complete Deviation	3	5.77
Total	52	100

Source: Survey Data

TABLE 2: DESIGNATION-WISE FREQUENCY AND PERCENTAGE RESPONSE TO: "INDIA CANNOT SUSTAIN ITS PRESENT ECONOMIC GROWTH WITHOUT CONVERGENCE"

Category/ Response	Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree	Total
L	2 (17)	5 (28)	5 (28)	2 (50)	0 (00)	14 (27)
SL	4 (33)	3 (17)	4 (22)	1 (25)	0 (00)	12 (23)
AP	4 (33)	6 (33)	4 (22)	1 (25)	0 (00)	15 (29)
P	2 (17)	4 (22)	5 (28)	0 (00)	0 (00)	11 (21)
Total	12 (23)	18 (35)	18 (35)	4 (7)	0 (00)	52 (100)

Source: Survey Data

*Figures in brackets under the frequency column show the percentage response for a particular option in that particular category of academicians.

TABLE 3: DESIGNATION-WISE FREQUENCY AND PERCENTAGE RESPONSE TO: "INDIA WILL BE VERY ATTRACTIVE DESTINATION FOR FDI AFTER CONVERGENCE"

Category/ Response	Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree	Total
L	2 (67)	6 (37)	5 (19)	1 (17)	0 (00)	14 (27)
SL	1 (33)	4 (25)	5 (18)	2 (33)	0 (00)	12 (23)
AP	0 (00)	4 (25)	10 (37)	1 (33)	0 (00)	15 (29)
P	0 (00)	2 (13)	7 (26)	2 (17)	0 (00)	11 (21)
Total	3 (06)	16 (31)	27 (52)	6 (11)	0 (00)	52 (100)

Source: Survey Data

*Figures in brackets under the frequency column show the percentage response for a particular option in that particular category of academicians.

TABLE 4: DESIGNATION-WISE FREQUENCY AND PERCENTAGE RESPONSE TO: "FINANCIAL REPORTS OF INDIAN COMPANIES WILL GLOBALLY COMPARABLE AFTER CONVERGENCE"

Category/ Response	Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree	Total
L	7 (27)	6 (26)	1 (34)	0 (00)	0 (00)	14 (27)
SL	6 (23)	5 (22)	1 (33)	0 (00)	0 (00)	12 (23)
AP	7 (27)	7 (30)	1 (00)	0 (00)	0 (00)	15 (29)
P	6 (23)	5 (22)	0 (33)	0 (00)	0 (00)	11 (21)
Total	26 (50)	23 (44)	3 (06)	0 (00)	0 (00)	52 (100)

Source: Survey Data

*Figures in brackets under the frequency column show the percentage response for a particular option in that particular category of academicians.

TABLE 5: DESIGNATION-WISE RESPONSE TO ASSESS THE GENERAL PREPAREDNESS FOR IFRS

Designation	Option 1		Option 2		Option 3		Option 4	
	Yes	No	Yes	No	Yes	No	Yes	No
L	4 (29)	10 (71)	5 (36)	9 (64)	4 (29)	10 (71)	3 (21)	11 (79)
SL	2 (17)	10 (83)	2 (17)	10 (83)	3 (25)	9 (75)	1 (8)	11 (92)
AP	1 (7)	14 (93)	3 (20)	12 (80)	5 (33)	10 (67)	0 (0)	15 (100)
P	1 (9)	10 (91)	2 (18)	9 (82)	6 (55)	5 (45)	0 (0)	11 (100)
Total Frequency	8	44	12	40	18	34	4	48
Percent	15.38	84.62	23.07	76.93	34.61	65.39	7.69	92.31

Source: Survey Data

*Figures in brackets under all the option columns show the percentage response for a particular option in that particular category of academicians.

ALLEVIATION OF POVERTY THROUGH RURAL DEVELOPMENT- AN ANALYSIS**DR. PAWAN KUMAR DHIMAN****ASSOCIATE PROFESSOR****DEPARTMENT OF EDP & HUMANITIES****SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY****LONGOWAL – 148 106****ABSTRACT**

The vicious circle of poverty is the most burning problem before the world. It is widespread and deep rooted in all developing nations and even in developed ones. As poverty is a complex phenomenon. It manifests itself in a myriad of ways. The poor not only suffer from low income and high unemployment but also from low life expectancy. Keeping in mind Government of India has launched many schemes like Integrated Rural Development Programme (IRDP), the Development of Women and Children in Rural Areas (DWCRA), the Supply of Improved Tools-Kits to Rural Artisans (SITRA), the Training of Rural Youth for Self Employment (TRYSEM), Swarna Jayanti Gram Swarozgar Yojana (SGSY) etc. Among all these schemes Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) is playing vital role for upliftment and generating employment among the rural masses to a great extent. In the present paper it has been found that these rural development scheme has been launched with team and spirit in some of the states and giving fruitful results where as in Himachal Pradesh ,a hilly state, employment opportunities are bleak rural development schemes have been launched but are not performing as per expectations.

KEYWORD

Rural Development, poverty, developing nations.

INTRODUCTION

Rural development implies both the economic betterment of people as well as greater social transformation. In order to provide the rural people with better prospects for economic development, increased participation of the people in rural development programmes, decentralization of planning, better enforcement of land reforms and greater access to credit are envisaged. Therefore it has always been an important issue in all discussions pertaining to economic development, especially developing countries, throughout the world. Over 3.5 billion people live in Asia and pacific region and some 63 % of them in rural areas. Although millions of rural people have escaped poverty as a result of rural development in many Asian countries, a large majority of rural people continue to suffer from persistent poverty.

The socio- economic disparities between rural and urban areas are widening and creating tremendous pressure on the social and economic fabric of many developing Asian countries. The policy makers of the developing economies recognized this importance and have been implementing a number of programmes and measures to achieve rural objectives. India has been a welfare state and the primary objective of all governmental endeavours has been the welfare of its millions. Rural poverty remained one of the primary objectives of the planned development in India. The Ministry of rural Development in India is the apex body for formulating policies, regulations and acts pertaining to the development of rural sector. The introduction of Bharat Nirman, a project set about by the Government of India in collaboration with the State Governments and the Panchayats raj Institutions is a major step towards the improvement of the rural sector. The National Rural Employment Guarantee Act 2005 was introduced by the Ministry of Rural Development, for improving the living conditions and its sustenance in the rural sector in India.

RURAL DEVELOPMENT IN INDIA-SCHEMES

1. Pradhan Mantri Gram Sadak Yojna (PMGSY): This is a scheme launched and fully sponsored by the central Government of India. The main objective of this scheme is to connect all the habitations with more than 500 individuals residing therein the rural areas by the means of weatherproof roads.
2. Swarnjyanti Gram Swarozgar Yojna(SGSY) : This was implemented as a total package with all the characteristics of self employment such as proper training, development of infrastructure, planning of activities, financial aid, credit from banks, organising self help groups, and subsidies.
3. Sampoorna Gramin Rozgar Yojna (SGRY): This scheme aims at increasing the food protection by means of wage employment in the rural areas which are affected by the calamities after the appraisal of the state government and the appraisal is accepted by the Ministry of Agriculture.
4. Indira Awas Yojna (Rural Housing): This scheme puts emphasis on providing housing benefits all over the rural areas in the country.
5. Council for Advancement of People's Action and rural Technology(CAPART): The main purpose of this organisation is to promote and organize the joint venture, which is emerging between the Government of India and the voluntary organizations pertaining to the development of the rural sector.
6. Department of rural Development in India: The department of Rural Development in India provides services such as training and research facilities, human resource development, functional assistance to the DRDA, overseas the execution of projects and schemes.

It was realized that a sustainable strategy of poverty alleviation has to be based on increasing the productive employment opportunities in the process of growth itself. Elimination of poverty, ignorance, disease and inequality of opportunities and providing a better and higher quality of life were the basic premises upon which all the plans and blue-prints of development were built. Keeping in mind the importance of rural masses problems government has announced special budgetary allocations under different heads the details are explained below:

TABLE-1
PLAN OUTLAY AND RELEASED DURING 11TH PLAN (RS IN CRORES)

Schemes	11th Plan Outlay#	2007-08 Release Actual	2008-09 Release Actual	2009-10 Release (to be firmed up)	Total Release(07-08 to 09-10)	2010-11 Approved Outlay	Total Release+ app. outlay for 2010-11	Balance available 2011-12
MGNREGA	100000.00	12661.22	30000.19	32052.69	74714.10	40100.00	11481.10	-14814.10
SGSY	17803.00	1697.06	2338.00	2018.48	6053.54	2984.00	9037.54	8765.46
DRDA	212.00	250.00	292.00	249.98	791.98	405.00	1196.98	-984.98
IAY	26882.21	3885.53	8800.00	8668.33	21353.86	10000.00	31353.86	-4471.65
PMGSY	43251.07 (59751.07*)	11000.00*	15280.00*	15840.00*	42120.00	22000.00*	64120.00	-4368.93
PURA	280.00	0.00	0.01	0.00	0.01	124.00	124.01	155.99
Trg. (NIRD)	105.00	10.00	16.81	15.00	41.81	105.00	146.81	-41.81
CAPART	250.00	58.54	52.20	50.00	160.74	100.00	260.74	-10.74
Mgt. Support to RD Programme	550.00	58.51	71.81	63.23	193.55	120.00	313.55	236.45
BPL Census	0.00	0.00	0.00	0.00	0.00	162.00	162.00	-162.00
SGRY	5600.00	3675.57	7500.00	0.00	11175.57	0.00	11175.57	
Total	194933.28	33296.43	64351.02	58957.71	156605.16	76100.00	232705.16	-15696.31

Source: Grameen Bharat: A monthly Newsletter of MoRD, Vol. 8, Issue71, May 2010

It is clear from the above table that in the 11th Plan out lay under different developmental schemes money was allocated Rs 100000,00 Crores under Mahatma Gandhi Rural Employment Guarantee Act(MNREGA),Rs 17803.00 Crores under Swarn Jyanti Gram Swarozgar Yojna (SGSY), Rs 212.00 crores under District Rural Development Agency(DRDA),Rs 26882.21 crores under Indira Awas Yojna(IAY) ,Rs 43251.07 crores under Pradhan Mantri Sadak Yojna(PMGSY),s2.80.00 crores under PURA, Rs105.00 crores under Training(NIRD) component, Rs250.00 crores under Council for Advancement of People's Action and Rural Technology(CAPART),Rs 55000 crores under Management support to Rural Development ,Rs 5600.00 crores under Sampoorna Gramin Rozgar Yojna(SGRY) respectively. And for all these schemes in the year 2007-08 the total funds were released to the total of Rs 33296.43 crores, which increased to Rs 64351.02 during the year 2008-09, in the year 2009-10 it released to the tune of Rs 58957.71 And in the year 2010-11 approved Outlay is Rs 76100.00 crores respectively. Out of total approved outlay is Rs 232705.16 crores has been spent and Rs 15696.31 crores is balanced. Initially, the National Rural Employment Guarantee Act of 2005 covered 200 districts-known as Phase I districts, and in 2006-07 this was extended to cover 130 additional districts known as the Phase II districts. The detail is given below:

TABLE-11: PERFORMANCE OF THE MAHATMA GANDHI NREGA- NATIONAL OVERVIEW

	(FY 2006-07) 200 districts	(FY 2008-09) 615 districts	(FY 2009-10) 619 districts	(FY 2010-11) 619 districts up to May June 2010.
Employment provided to households:	2.10 Crores	4.51 Crores	5.25 Crores	1.79 Crores
Persondays [in Crores]:				
Total:	90.5	216.32	282.57	43.91
SCs	22.95[25%]	63.36[29%]	86.30[29%]	9.41[20%]
STs	32.98[36%]	55.02[25%]	58.74[25%]	8.74[21%]
Women	36.40[40%]	103.57[48%]	137.40[50%]	21.77[50%]
Others	34.56[38%]	97.95[45%]	137.69[49%]	25.77[59%]
Average person days per Household	43 days	48 days	47 days	24 days
Budget Outlay: (In Rs. Crore)	11300	30000	39100	40100
Expenditure (In Rs. Crore)	8823.35[73%]	27250.10[73%]	37397.06[68%]	5627.85
Expenditure on Wages(In Rs. Crore)	5842.37[66%]	18200.03[67%]	25633.67[69%]	4437.34
Average Wage paid per Persondays	65	84	91	100
Total works taken up(In Lakhs)	8.35	27.75	46.01	52.98
Works completed (In Lakhs)	3.87	12.14	20.94	0.33
Works break up (In Lakhs)				
Water Conservation	4.51[54%]	12.79[46%]	18.23[51%]	26.09[52%]
Provision of Irrigation facility to land owned by SC/ST/BPL and IAY beneficiaries:	0.81[10%]	5.67[20%]	5.78[17%]	4.77[10%]
Rural Connectivity:	1.80[21%]	5.03[18%]	5.77[16%]	10.63[21%]
Land Development:	0.89[11%]	3.98[15%]	4.99[14%]	6.61[13%]
Any other activity:	0.34[4%]	0.28[1%]	0.81[2%]	2.00[4%]

Source: Kurukshetra Journal, 2010

The table no-11 depicts that during 2006-07 against the total available funds of Rs. 11300 Crore with the states, Rs. 8823.36 Crore was utilized. The average fund utilization per district was Rs. 44.12 Crore in 2006-07. For 2007-08 the government made a budget provision of Rs 12000 Crore. Out of this Rs. 8303.82 Crores have been released up to 14th November 2007. Out of this, Rs. 5365.99 Crore have been released to the Phase I 200 districts and Rs. 2937.92 Crore have been released to the Phase II 131 districts. During 2006-07, 2.12 Crore households had demanded employment, out of which 2.10 Crore households were provided employment. During the year 90.51 Crore person days of employment was provided under the programme. Averages of 45.2 lakh person days of employment per districts have been generated. Out of total 90.51 Crore person days, the share of Scheduled Castes was 22.95 Crore person days (25.36%) and Scheduled Tribes was 32.99 (36.45%) constituting a total of 55.94 Crore person days for SCs/STs which comes to about 62%. As per the MNREGA, the share of women person days should be 1/3rd and the same was 36.79 Crore person days, which is about 41%. During 2007-08 (up to September 2007), 1.97 Crore households have demanded employment and 1.88 Crore households have been provided employment. A total of 56.14 Crore person days of employment has been generated under the Programme. Out of this, the share of Scheduled Castes is 14.70 Crore person days (26.18%) and Scheduled Tribes is 18.44 Crore person

days (32.84%) constituting a total of 33.14 Crore person days, which is about 59.03% of total. The share of women is 26.61 Crore person days, which is 47.40%. In some of the states these schemes have been implemented in letter and spirit. Maximum expenditure was done in the state of Andhra Pradesh i.e. Rs 4509.18. In Gujarat Rs Minimum amount of Rs 149.92 were spent in Punjab. Where as in case of Himachal Pradesh Rs 602.78 were spent. The detail is given below:

TABLE-111 PERFORMANCE OF MGNREGA IN SOME OF THE STATES OF INDIA

States	Employment provided to households In lakhs	Persondays [in Lakh]:					Total fund [In crores]	Expenditure [in crores]	Total works taken up:	Works completed:	Works in progress :
		Total:	SCs:	STs:	Women :	Others:					
Andhra Pradesh	61.58493	4044.3	998[24.68%]	594.8[14.71%]	2349.6[58.1%]	2451.5[60.62%]	4814.73	4509.18	1025080	532673	492407
Bihar	41.2733	1136.91	515.06	24.59[2.16%]	341.49[30.04%]	597.26[52.53%]	2213.59	1816.88	158740	72587	86153
Gujarat	8.62629	328.4	30.61[9.32%]	99.2[30.21%]	155.77[47.43%]	198.59[60.47%]	712.2	466.54	178493	10409	168084
Himachal Pradesh	4.97336	284.94	95.05[33.36%]	24.79[8.7%]	131.32[46.09%]	165.1[57.94%]	602.78	556.56	62473	35899	26574
Punjab	2.71934	77.15	60.89[78.92%]	0[0%]	20.28[26.28%]	16.26[21.08%]	209.17	149.92	11836	6384	5452
Karnataka	10.64689	431.32	71.87[16.66%]	44.62[10.35%]	197.6[45.81]	314.83[72.99%]	1917.59	1183.72	527434	35749	491685
Kerala	9.79237	296.37	49.64[16.75%]	10.37[3.5%]	267.51[90.26%]	236.36[79.75%]	683.81	441.66	136142	41662	94480
Megalaya	3.00482	148.48	0.77[0.52%]	139.7[94.09%]	70.08[47.2%]	8.01[5.39%]	217.5	183.53	10115	6349	3766
Orissa	16.45222	706.64	129.92[18.39%]	248.6[35.18%]	276.25[39.09%]	328.12[46.43%]	1405.76	987.27	345205	34641	310564
Rajasthan	48.738899	1999.23	362.47[18.13%]	433.92[21.7%]	1367.97[68.42%]	1202.84[60.17%]	5582.16	2037.82	478994	7281	471713
Tamil Nadu	57.40852	2280.81	673.65[29.54%]	27.99[1.23%]	1752.43[76.83%]	1579.17[69.24%]	2239.07	1889.09	118293	716	117577
Uttar Pradesh	57.85554	1828.3	492.13[26.92%]	25.67[1.4%]	274.98[15.04%]	1310.5[71.68%]	5582.88	2916.14	1325760	15784	1309976

Source: Report of MoRD(Fy 2010-11)

It is clear from table no-111 that maximum employment was provided to the rural poor people in the state of Andhra Pradesh i.e. to 61.58493 people, in the state of Bihar .41.2733 person, in Bihar 41.2733 persons were provided employment; in Gujarat 8.62629 persons were provided employment , whereas Himachal Pradesh had provided employment to 4.97336 persons under MGNREGA.

REVIEW OF LITERATURE

Jacob Naomi (2008) has emphasized in his research paper” The impact of NREGA on Rural-Urban Migration: Field Survey of Villupuram District, Tamil Nadu” that the Villupuram district model of NREGA implementation could perhaps serve as an example for the Kalahandi-Bolangir-Korapur (KBK) region where deprivation and hunger is present at the unimaginable level and obesity is a problem treating the children of urban India today- people still die of starvation in this region. The rural Employment scheme has made virtually zero impact on the livelihood security of Orissa’s rural poor.

Hameed Syeda (2009), has stressed in her research paper” Engendering NREGA: Women’s Empowerment through Guaranteed Employment” that while recognizing the significant achievements of NREGA with regard to Gender parity of, Mobilization of women for NREGA employment, Increased in control rights of women, in earning from NREGA. And presently there are over 50 percent women employed under NREGA programme, 79 percent women employees collect their own wages: 68 percent keep their own wages.

CRRID(2010) has analyzed in its study on “Mahatma Gandhi NREGA” in selected districts of Himachal Pradesh(Sirmaur), Punjab(Hoshiarpur) and Haryana(Sirsa) that with this scheme, the economic conditions of the wage earner have improved and there is no need for workers to go outside the village for their livelihood. Moreover, People’s faith in Panchayats has increased and agricultural productivity has also improved to a large extent in these areas.

CFFS, Centre for Environment and Food Security(2010) has stressed in its study on NREGA in Orissa region that out of the total NREGA money spent in Orissa during 2006-07 i.e. Rs. 733 crores, a lion’s share i.e. 500 crores (75%) has been legally pocketed by Babus (officially) entrusted with execution of NREGA and the total number of job cards issued in Orissa were 25,93,194 and 7.99 crore person days of employment provided to 13,94,169 households spread over 19 districts of the state. And each covered family got an average 57 days of wage employment in the year. It was also found that only few families got 40 to 60 days of wage employment, and rest of the families got any employment between 5-21 days and on an average a family got employment only for 5 days in the 19 districts. Keeping above factors in mind data from Sulah block has been taken in to consideration to find out the activities under different rural development schemes (Himachal Pradesh).

OBJECTIVES OF THE STUDY

1. To find out the role of government in providing employment through MNREGA at Sulah of Kangra district (Himachal Pradesh.)
2. To suggest the remedial measures to improve the working of government towards providing employment and upliftment of rural masses.

SAMPLE SELECTION, METHODOLOGY AND FINDINGS

The present paper is an attempt to find out the role of rural development for imparting employment opportunities among the rural masses and various other factors responsible for creating hindrance in the working of the rural masses in Sulah block of the Kangra district of Himachal Pradesh. Himachal Pradesh which is having its boundaries with Punjab, Haryana, U.P., J&K and Tibet was carried on the map of India on 15th April, 1948, as a centrally administered ‘C’ category

state after the merger of 30 princely states. Later Bilaspur, another princely Hill state was merged with it. Himachal Pradesh became a full-fledged state on 25th January, 1971. Now, this state comprises 12 districts namely, Una, Mandi, Kullu, Lahual and Spiti, Bilaspur, Solan, Shimla, Sirmour, Chamba, Kinnaur and Kangra with total area of 55,673 sq. kms and population of the state is 68, 56,509 (2011 census.) Out of which 34, 73,892 are males and 33,82,617 females in the state. Kangra is one of the advanced district is situated in the western part of the state and in the northern region of India and it lies in the latitude of 31.41'-32.28(N) to 31.45" (N) and Longitude 75.35-77.4 (E) to 75.35 ' 34"-77. 4'46"(E) . The total area of district is 5739 Sq.Km and population is 15, 07,223(2011 census) The literacy rate of the district is 86.49% Out of which 87.54% males and 80.62% females are literate. It has 14 tehsils 5 sub tehsils and 14 blocks in the district and for the present study we have chosen the Sulah block of the district. In the present study both primary and secondary data relating to various rural development schemes has been collected. The secondary data from the magazines and primary data from Block development office Sulah (Himachal Pradesh) with focus on MNREGA and has been analyzed in percentages only. The details are explained from the following tables.

TABLE-IV: PERFORMANCE OF MGNREGS IN KANGRA DISTRICT OF HIMACHAL PRADESH

FEATURES	FY2010-11
Employment provided to households:	1.2487 Lakh
Persondays [in Lakhs]:	
Total:	74.65
SCs	22.36 [29.95%]
STs	5.86 [7.84%]
Women	40.6 [54.38%]
Others	46.44 [62.21%]
Total funds (In Rs. Crores)	156.34 Crore.
Expenditure (In Rs. Crores)	144.73 Crore.
Total works taken up	14274
Works completed	7736
Works in progress	541

Source: Report of Ministry of Rural Development (Govt. of India) 2010-2011

It is clear from table no-IV that during the year 2010-2011, total 14274 works were undertaken under MNREGA in district Kangra (Himachal Pradesh) and only 7736 works were completed so far. And still 541 are under progress. In case of employment only 1.2487 Lakh people were provided 100 days work under the scheme. But still it is less as compared to some other states of the country. The work of Sulah is also not as per expectation the details are shown below:

TABLE-V: INFORMATION REGARDING "UNSPENT BALANCES" WITH DEVELOPMENT BLOCKS UNDER VARIOUS DEVELOPMENT SCHEMES (AS ON NOVEMBER,2010)

Name of the block: Sulah		Non started works		Abandoned work		Work in progress		Total unspent balances as on Cash Book			Remarks
Positions as on		No of works-	Balance	No of works-	Balance	No of works-	Balance	Principle	Interest	Total	
(B)	Planning Schemes										
S.No.	Name of the Head/Scheme										
1	SDP	-	-	4	600000	27	639896	6090624	-	6090624	
2	VKVNY	-	-	3	250000	15	433119	760687	-	760687	
3	VMJS	-	-	1	200000	4	267393	2572492	-	2572492	
4	MPLAD(KP)	-	-	-	-	6	61450	3321241	-	3321241	
5	MPLAD(SK)	-	-	-	-	10	619174		-		
6	BASP	4	1525100	-	-	1	50000	837294	-	837294	
7	MMGPY	1	50000	-	-	8	186000	239285	-	239285	
8	NC	-	-	5	320000	25	470110	2164735	-	2164735	
9	RTWS	-	-	-	-	3	29800	28074	-	28074	
Sub total		5	1575100	13	1370000	99	2756909	16014432	-	16014432	

Source: Official record Block Development Office Sulah

Note: Works lying pending and on which no expenditure has been made for more than two years should be covered under "abandoned works"

TABLE-VI: INFORMATION REGARDING "UNSPENT BALANCES" WITH DEVELOPMENT BLOCKS UNDER VARIOUS DEVELOPMENT SCHEMES

Name of the block: Sulah		Non started works		Abandoned work		Work in progress		Total unspent balances as on Cash Book			Remarks
Positions as on		No of works-	Balance	No of works-	Balance	No of works-	Balance	Principle	Interest	Total	
(A)	Rural Development Schemes										
S.No.	Name of the Head/Scheme										
1	GRDUY	3	550000	-	-	25	1786223	2536293	49807	2586100	
2	NFBS	-	-	-	-	9	-		-		
3	IAY	2	97000	-	-	77	-	11200	-	11200	
4	AAY	1	48500	-	-	60	424400	472900	-	472900	
5	TSC	-	-	-	-	16	420000	452200	-	452200	
6	SGSY Infrastructure	-	-	-	-	-	-	-	-	-	
7	MGNREGA	-	-	-	-	821	26909294	1592500	260800	1853300	
8	1WDP XI	-	-	-	-	50	703075	4052400	-	4052400	
9	IWDP XIV	-	-	-	-	12	445600	721900	-	721900	
Sub total		6	695500	0	0	1070	30688592	9839393	310607	10150000	

Note: Works lying pending and on which no expenditure has been made for more than two years should be covered under "abandoned works" (As on November ,2010)

Source: Official record of Sulah Block (Kangra)

TABLE-VII: DETAILS OF AMOUNT AND EMPLOYMENT (AS ON NOVEMBER ,2010)

Sr. No	Year	Total registered member	Total no. Of families got employment	Amount provided (Rs in Lakhs)	Expenditure	Total number of persons getting 100 days employment	Percentage of women got employment
1	2007-08	7624	4313	255.17	230.73	-	52
2	2008-09	10315	4226	554.54	504.491	210	54
3	2009-10	12079	6721	883.80	826.395	1174	80
4	2010-11	12079	5300	451.693	433.16	13	70

Source: Official record of Sulah Block (Kangra)

Table no-V depicts that many schemes relating to rural development have been started in the Sulah block of Kangra district (Himachal Pradesh). But among all rural development schemes; 5 were found under non starter works and amount Rs 1575100 was lying idle, 13 were found abandoned works and amount of Rs 1370000 was unutilised and only 99 works were found under progress and as per record Rs 16014432 amount was unspent. This is not a healthy sign.

It is clear from the table no-VI that in Sulah block due to certain reasons works were lying pending and no expenditure has been made for a period of more than two years. In all schemes 6 schemes were found as not starter and an amount of Rs 695500 was found lying idle in the government treasury. Whereas 1070 projects were found in progress and in these projects as on November 2010 an amount of Rs 10150000 was found unspent Out of which 9839393 principal and 310607 interest. It is clear that some efforts have been made to improve the economic condition of the rural poor but still lot is to do in this direction to fulfil the socio-economic conditions of the people.

Table no-VII depicts that in the year 2007-08, 7624 members were registered under various rural developmental schemes and 4313 members were provided employment. Whereas amount is considered total amount of Rs 2.55.17 was provided by the government under the rural development schemes but only 230.73 lac was spent under rural development scheme MNREGA. As regards women are concerned 52 percent of the women were covered under the scheme to provide the employment. In the year 2008-09. 10315 families were registered, Rs 4226 people were provided employment and total amount of Rs 554.54 lac was provided by the government but only 504.491 was spent. Out of total registered members only 210 people got employment for 100 days which is very poor show on the part of the implementing agencies. Whereas in the year 2009-10 12079 members were registered and Rs 6731 families were provided employment ,Rs 883.80 lac amount was provided by the government but only Rs 826.395 lac was spent and out of which total 1174 were provided 100 days work as per the scheme which shows marginally hike in the efforts of the rural development department. Whereas in the year 2010-11 12079 members were registered only 5300 families got employment and total amount of Rs 451.693 lac were provided by the government which was less from the previous year budgetary allocation and Rs 4.3316 lac was spent and it is pertinent to mention here that that only 13 persons were provided 100 days work. Out of which 70 percent were women.

SUGGESTIONS

1. Government of the state should strengthen the policies of implementing MNREGA schemes with letter and spirit.
2. It is suggested that a cell should be created to monitor the progress of the Panchayats and Pradhans of the village along with Block Development office and district rural development agency.
3. It is suggested that grievance redressed and social cells should be set up at the village level and suggestions be taken from the general public.
4. It is suggested that separate fund for the programme called the State Employment Guarantee Funds needs to be created at the state level that can be utilized in case Emergency.

CONCLUSION

In today's globalized world, every country is facing challenges of cut throat competition, privatization, liberalization, economy development and allied problems. India is facing same problems along with development of rural India. If we concentrate on development of rural area by applying suitable HRD parameters, it will strengthen the economy of India. Because rural development offers an important window through which we learn about the impact of accountability mechanisms on governance structures at the grassroots. In the present study it has been found that in Sulah block of Kangra district very few people are benefited under the schemes especially MNREGA those are living below poverty lines and are in villages. It has also been observed that bulk of the government funds do not reach to the rural people due to various transitional paths. But the proportion of these funds does reach, and makes a big difference to the lives of the rural poor.

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FORECASTING MONTHLY FOREIGN INSTITUTIONAL INVESTMENTS IN BSE AND NSE EQUITY MARKET USING ARIMA MODEL

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ABSTRACT

One of the important features of the development of Stock Market in India in the last 18 years has been the growing participation of Institutional Investors, especially foreign institutional investors. This paper attempts to forecast the monthly cumulative Foreign Institutional Investments in BSE and NSE equity market using Auto Regressive Integrated Moving Average (ARIMA) model. The actual results of the cumulative FIIs in BSE and NSE equity market show the positive trend but it shows the decreasing pattern. This positive and fluctuating trend in cumulative FIIs in BSE and NSE equity market will occur in future if the same market conditions exist.

KEYWORDS

Foreign Institutional Investment, Auto Regressive Integrated Moving Average (ARIMA) model, Bombay Stock Exchange, National Stock Exchange.

INTRODUCTION

In this age of transnational capitalism, significant amounts of capital are flowing from developed world to emerging economies. Positive fundamentals combined with fast growing markets have made India an attractive destination for Foreign Institutional Investors (FIIs). Portfolio investments channeled via foreign institutional investors have been the most dynamic source of capital to emerging markets in 1990s. FIIs have gained a significant role in India's capital markets. Foreign Investment refers to investments made by residents of a country in financial assets and production process of another country. After the opening up of the borders for capital movement, these investments have grown in leaps and bounds. But it had varied effects across the countries. It can affect the productivity factor of the recipient country and can also affect the balance of payments.

India, being a capital scarce country, has taken many measures to attract foreign investment since the beginning of reforms in 1991. India opened its doors to foreign investors in September 1992 and received portfolio investment from foreigners in the form of foreign institutional investment in equities in 1993. This has become one of the main channels of Foreign Institutional Investments in India for foreigners. Foreign Institutional Investors are an entity established or incorporated outside India, which proposes to make investment in India. Initially Pension Funds, Mutual Funds, Insurance Companies, Investment Trusts, Banks, University Funds, Endowments, Foundations and Charitable Trusts or Charitable Societies were eligible to get registered as Foreign Institutional Investors (FIIs). Later, Asset management companies, Institutional portfolio managers, Trustees and Power of Attorney holders were also declared as eligible to get registered as FIIs.

Today, Bombay Stock Exchange (BSE) has the greatest number of listed companies in the world with 4700 listed as of August 2007¹, around 6000 Indian companies were listed on the stock exchange². The Bombay Stock Exchange Sensitive Index (SENSEX) consists of the thirty largest and most actively traded stocks of thirteen various sectors on the BSE and it is regarded to be the pulse of the Indian stock market. The equity market capitalisation of the companies listed on Bombay Stock Exchange of India was at USD 1.79 trillion as on December 2007, making it the largest stock exchange in South Asia and the 12th largest in the world³. The National Stock Exchange of India (NSE) is the largest stock exchange in India in terms of daily turnover and number of trades for equities. The Standard & Poor' CRISIL NSE Index 50 (S&P CNX Nifty or simply Nifty) is an index of fifty major stocks of twenty one sectors on National Stock Exchange of India.

RESEARCH DESIGN

Foreign capital provides liquidity to the stock market of the country. At the same time there is unease over the volatility in FII flows and its impact on the stock market and the Indian economy. Firms are interested in attracting foreign capital because it helps them to create liquidity for their stock in the market. In the past few years, the Indian capital markets have been in the news for too many reasons. On one hand, the markets were scaling newer heights every day and at the same time, speculations on FII movements are getting stronger. As the Indian equity market is growing, the trend and future prospects in FIIs has become a topic of great concern. Hence, this section attempts to forecast the FIIs in BSE and NSE equity market with the help of ARIMA (Auto Regressive Integrated Moving Average) model.

OBJECTIVE OF THE STUDY

The main objective of the study is to forecast the monthly Foreign Institutional Investments in BSE and NSE equity market.

DATA AND SOURCES OF DATA

The data collected for the present study is secondary one. The monthly FIIs data of BSE and NSE equity market are collected from the eminent website www.bseindia.com.

¹ BSE SENSEX - http://www.bseindia.com/about/st_key/list_cap_raised.asp

² BSE SENSEX - http://www.bseindia.com/about/st_key/list_cap_raised.asp

³ BSE - <http://www.articles2u.com/investments/sensex-bombay-stock-exchange-bse/>

PERIOD OF THE STUDY

The present study is conducted for a period of eight years from 1st April 2000 to 31st March 2008. The monthly equity investments of Foreign Institutional Investors' time series data have been collected for the study period of eight years which consists of 96 observations for forecasting the FIIs in BSE and NSE equity.

FRAMEWORK OF ANALYSIS

Autoregressive Integrated Moving Average (ARIMA) model has been used to forecast the monthly Foreign Institutional Investments (FIIs) in BSE and NSE equity market.

(I) ARIMA (AUTO REGRESSIVE INTEGRATED MOVING AVERAGE) MODEL

The cumulative Foreign Institutional Investments time series data for this study were collected from www.bseindia.com website to forecast the monthly FIIs in BSE and NSE equity market. Box and Jenkins⁴ (1976) linear time series model was applied. Auto Regressive Integrated Moving Average (ARIMA) is the most general class of models for forecasting a time series. Different series appearing in the forecasting equations are called "Auto-Regressive" process. Appearance of lags of the forecast errors in the model is called "moving average" process. The ARIMA model is denoted by ARIMA (p,d,q), where "p" stands for the order of the auto regressive process, 'd' is the order of the data stationary and 'q' is the order of the moving average process. The general form of the ARIMA (p, d, q) can be written as described by Judge, *et al.* (1988)⁵.

$$\Delta^d Y_t = \delta + \theta_1 \Delta^d Y_{t-1} + \theta_2 \Delta^d Y_{t-2} + \dots + \theta_p \Delta^p Y_{t-p} + e_t + \alpha_1 e_{t-1} + \alpha_2 e_{t-2} + \dots + \alpha_q e_{t-q} \quad (1)$$

Where, Δ^d denotes differencing of order d, i.e., $\Delta^d Y_t = Y_t - Y_{t-1}$, $\Delta^2 Y_t = \Delta Y_t - \Delta Y_{t-1}$ and so forth, $Y_{t-1} \dots Y_{t-p}$ are past observations (lags), $\delta, \theta_1, \dots, \theta_p$ are parameters (constant and coefficient) to be estimated similar to regression coefficients of the Auto Regressive process (AR) of order "p" denoted by AR (p) and is written as $Y = \delta + \theta_1 Y_{t-1} + \theta_2 Y_{t-2} + \dots + \theta_p Y_{t-p} + e_t$ (2)

Where, e_t is forecast error, assumed to be independently distributed across time with mean θ and variance $\theta_2 e$, $e_{t-1}, e_{t-2}, \dots, e_{t-q}$ are past forecast errors, $\alpha_1, \dots, \alpha_q$ are moving average (MA) coefficient that needs to be estimated. While MA model of order q (i.e.) MA (q) can be written as

$$Y_t = e_t - \alpha_1 e_{t-1} - \alpha_2 e_{t-2} - \dots - \alpha_q e_{t-q} \quad (3)$$

The major problem in ARIMA modeling technique is to choose the most appropriate values for the p, d, and q. This problem can be partially resolved by looking at the Auto Correlation Function (ACF) and Partial Auto Correlation Functions (PACF) for the series. Auto correlation function indicates the order of the autoregressive components 'q' of the model, while the partial auto correlation function gives an indication for the parameter p. The degree of the homogeneity, (d) i.e. the number of time series to be differenced to yield a stationary series, is determined on the basis where the ACF approached zero.

After determining "d" a stationary series $\Delta^d Y_t$ its auto correlation function and partial auto correlation function were examined to determined values of p and q, next step was to "estimate" the model. The model was estimated using Box Jenkins approach. The following diagnostic checks are applied to the obtained results to get the good fitted model.

1. The first diagnostic check is to draw a time series plot of residuals. When the plot makes a rectangular scatter around a zero horizontal level with no trend, the applied model is declared as proper.
2. The second diagnostic check is the identification of normality. For this purpose, normal scores are plotted against residuals and it is declared in case of a straight line. A histogram of the residuals is also used as the second diagnostic check to test whether the data are skewed or outliers exist in the data.
3. The third diagnostic check is finding out the fitness of good fit. For this purpose, residuals were plotted against corresponding fitted values and the residuals should be scattered randomly about zero.
4. The fourth diagnostic check is finding out whether the fitted model shows any pattern i.e ascending or descending trend in the residuals; it must contain no pattern in the residuals. This check is to be done with the help of residuals versus order plots.

(II) ASSUMPTIONS

The monthly forecasts of cumulative FIIs in BSE and NSE equity market from 01-04-2008 to 31-03-2010 are prepared by using ARIMA (p, d, q). For this purpose, the following assumptions are made.

1. Absence of financial shocks in the economy, internal or external
2. SEBI's (Securities and Exchange Board of India) regulations will remain unchanged
3. Foreign Institutional Investor's preferences in BSE and NSE equity investment will remain the same.

ANALYSIS AND RESULT

FORECASTING MONTHLY FOREIGN INSTITUTIONAL INVESTMENTS IN BSE AND NSE EQUITY MARKET

1. Identifying the parameter 'd'

Table 1 shows the auto correlation function (ACF) for the cumulative FIIs in BSE and NSE equity market. From this, it is inferred that the T-statistic shows that auto correlation for the first 8 lags is greater than 2 and LBQ statistic for all 24 lags are also greater than the critical value of 37.65 at 95 percent confidence level. It shows that autocorrelations for all the lags is significantly different from zero which indicates that the cumulative FIIs are not stationary.

Table 2 shows the autocorrelation function (ACF) for the differenced cumulative FIIs in BSE and NSE equity market. It is inferred that the T-statistic shows that autocorrelation for the all the lags is less than 2. The LBQ statistic for all the lags are also lower than the critical value of 37.65 at 95 percent confidence level. It shows that autocorrelations for all the lags is significantly equal to zero which indicates that the differenced cumulative FIIs are stationary. From this the parameter 'd' is decided to be equal to '1'.

⁴ Box-Jenkins modeling involves identifying an appropriate ARIMA process, fitting it to the data, and then using the fitted model for forecasting. One of the attractive features of the Box-Jenkins approach to forecasting is that ARIMA processes are a very rich class of possible models and it is usually possible to find a process, which provides an adequate description to the data.

⁵ Najeeb Iqbal, Khuda Bakhsh, Asif maqbool and Abid Shohab Ahmad, "Use of the ARIMA model for forecasting Wheat Area and Production in Pakistan", *Journal of Agricultural and Social Sciences*, Vol. 1, No. 2, 2005.

TABLE 1: AUTOCORRELATION FUNCTION OF CUMULATIVE FIIS

Lag	ACF	T	LBQ
1	0.971187	9.52	93.41
2	0.941028	5.43	182.04
3	0.909604	4.13	265.73
4	0.872523	3.40	343.59
5	0.836993	2.93	416.01
6	0.798034	2.57	482.59
7	0.764237	2.31	544.32
8	0.733805	2.10	601.89
9	0.699416	1.92	654.79
10	0.671446	1.78	704.11
11	0.643107	1.65	749.89
12	0.614717	1.53	792.21
13	0.587212	1.43	831.29
14	0.558339	1.33	867.06
15	0.530854	1.24	899.79
16	0.502635	1.16	929.50
17	0.472604	1.07	956.10
18	0.444455	1.00	979.93
19	0.417876	0.93	1001.26
20	0.391433	0.86	1020.23
21	0.364821	0.80	1036.93
22	0.337693	0.73	1051.42
23	0.309693	0.67	1063.79
24	0.278856	0.60	1073.95

TABLE 2: AUTOCORRELATION FUNCTION OF CUMULATIVE FIIS (DIFFERENCE 1)

Lag	ACF	T	LBQ
1	-0.035794	-0.35	0.13
2	0.131397	1.28	1.84
3	0.179238	1.72	5.05
4	-0.214162	-1.99	9.70
5	0.168428	1.50	12.60
6	-0.142495	-1.24	14.71
7	0.049109	0.42	14.96
8	0.166777	1.43	17.90
9	-0.049175	-0.41	18.16
10	0.041065	0.34	18.35
11	0.124484	1.04	20.05
12	0.079238	0.66	20.74
13	0.080781	0.66	21.48
14	-0.036377	-0.30	21.63
15	0.026994	0.22	21.71
16	-0.003530	-0.03	21.71
17	-0.054057	-0.44	22.06
18	-0.022872	-0.19	22.12
19	0.126843	1.04	24.07
20	0.157860	1.27	27.13
21	0.019512	0.15	27.18
22	0.114308	0.91	28.83
23	0.007230	0.06	28.84
24	0.022129	0.17	28.90

2. Identifying the parameters 'p' and 'q'

After identifying the order of 'd' the next step is to find out the parameters 'p' and 'q'. These two parameters are determined based on the following criteria:

1. T statistic must be greater than 2 in its absolute value
2. P value must be less than the α level (5 percent)
3. MSE (mean square error) must be smaller which indicates a better fitting model
4. P value of Ljung Box (chi-square statistics) must be greater than the α level which explains that the residuals are uncorrelated

The above criteria were applied and the different models' results are given below:

TABLE 3: ARIMA RESULTS OF DIFFERENT MODELS

S.No	MODEL (with differencing 1)	P-value	MS	P-value in Ljung Box stat
1.	ARIMA (1,1,1)	AR 1 = 0.000 MA 1 = 0.000	24491505	0.018 at lag 12
2.	ARIMA (2,1,1)	AR 1 = 0.000 AR 2 = 0.407 MA 1 = 0.000	24507687	0.037 at lag 12
3.	ARIMA (1,1,2)	AR 1 = 0.000 MA 1 = 0.000 MA 2 = 0.786	28507263	0.004 at lag 12
4.	ARIMA (2,1,2)	AR 1 = 0.001 AR 2 = 0.300 MA 1 = 0.000 MA 2 = 0.571	24746107	0.025 at lag 12
5.	ARIMA (3,1,1)	AR 1 = 0.000 AR 2 = 0.004 AR 3 = 0.000 MA 1 = 0.000	22244572	All the lags are greater than 0.05

The models 1 to 5 above are not suitable for the cumulative FIIs in BSE and NSE equity market. Finally, ARIMA (3, 1, 3) model (given below) has been selected. It gives the significant p-values and lowest mean square error and the Ljung Box statistics gives the non-significant p-values, which indicate that the residuals are uncorrelated. Hence, the orders of 'p' and 'q' are decided to be equal to 3 for the respective parameters.

3. Diagnostic checking or Residual analysis

CHART 1 and CHART 2 show the ACF and PACF residual plots for the cumulative FIIs. The ACF and PACF of residuals for the cumulative FIIs show non-significant spikes (the spikes are within the confidence limits) indicating that the residuals seem to be uncorrelated. It is inferred that the ARIMA model with differencing '1' appears to fit for the cumulative FIIs time series.

CHART 3 exhibits the residual plots for cumulative FIIs. For first normality test, plot of normal scores and residuals for the cumulative FIIs data indicate an approximate straight line showing normality, which is a necessary condition for normality. The second normality test is to plot the histogram of residuals. The residual plots against frequency show the bell shaped histogram of the residuals for the cumulative FIIs, which also reveals the normality of the residuals and goodness of fit of the model. The residuals versus fitted value graph shows that the residuals appear to be randomly scattered about zero, except for the outlier in the bottom half of the plot. The residual versus order graph also shows that the residuals randomly scattered around zero. It indicates that the errors are independent of each other and it indicates the normality and goodness of fit of the model. Therefore, it is observed that ARIMA (3, 1, 3) model is fitted properly by residual analysis.

CHART 1: ACF OF RESIDUALS FOR CUMULATIVE FIIs

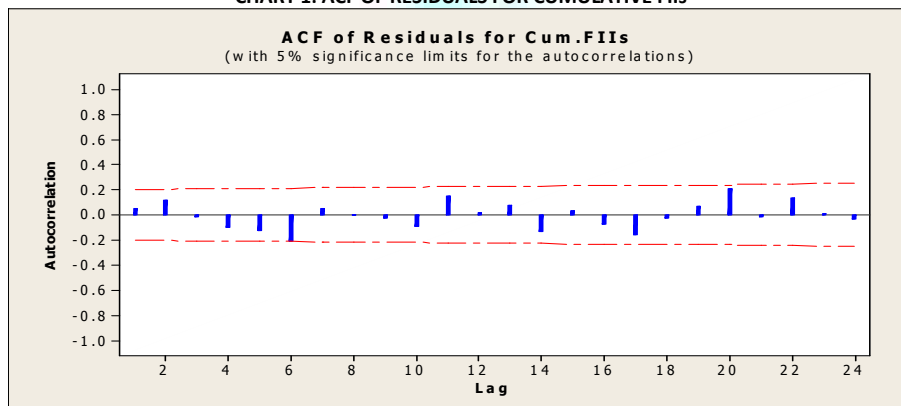


CHART 2: PACF OF RESIDUALS FOR CUMULATIVE FIIs

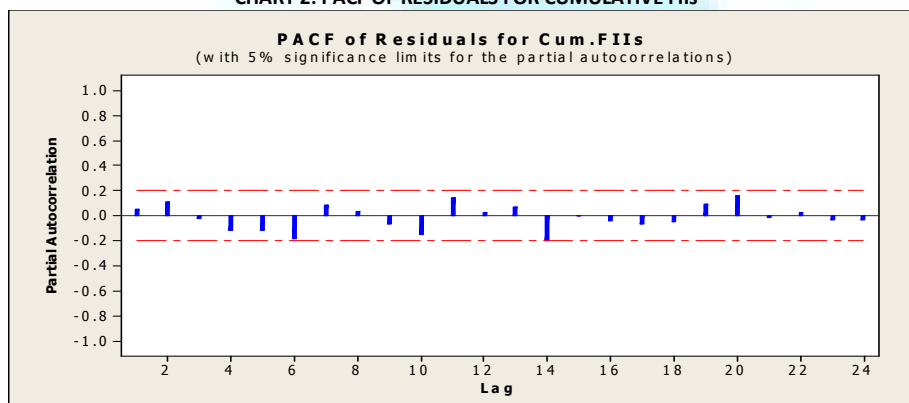
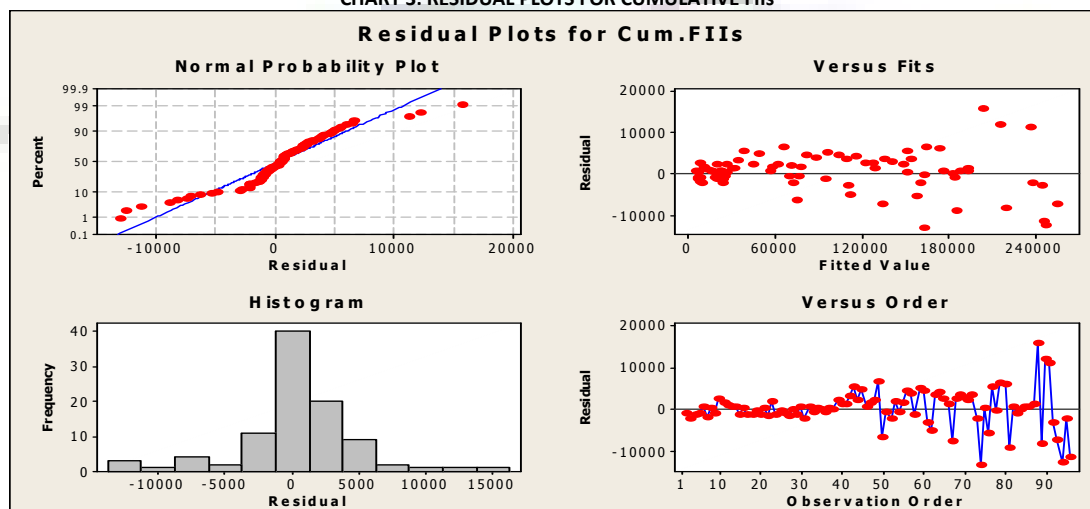


CHART 3: RESIDUAL PLOTS FOR CUMULATIVE FIIs



FORECASTING RESULTS

Final Estimates of Parameters					
Type		Coef	SE Coef	T	P
AR	1	-0.6614	0.0598	-11.05	0.000
AR	2	0.6526	0.0575	11.34	0.000
AR	3	1.0145	0.0547	18.55	0.000
MA	1	-0.7927	0.0974	-8.14	0.000
MA	2	0.6837	0.1300	5.26	0.000
MA	3	0.9074	0.0981	9.25	0.000

Differencing: 1 regular difference
 Number of observations: Original series 96, after differencing 95
 Residuals: SS = 1811120569 (back forecasts excluded)
 MS = 20349669 DF = 89

Modified Box-Pierce (Ljung-Box) Chi-Square statistic

Lag	12	24	36	48
Chi-square	12.4	27.2	31.9	39.6
DF	6	18	30	42
P-Value	0.054	0.076	0.373	0.578

From the above results, it is indicated that the T- statistic is greater than 2 in absolute value and the associated p-values are also significant at 5 percent α level for the ARIMA (3, 1, 3). The p-value of 0.000 indicates that there is a 0 percent chance in the obtained estimates of the parameters, if the true parameters were zero. Since the p-value is small (less than the α -level of 0.05) the test is significant; hence, the null hypothesis that the parameters are zero can be rejected at 5 percent level of significance. The Ljung-Box statistics shows the insignificant p values of 0.054, 0.076, 0.373 and 0.578, which indicate that the residuals appear to be uncorrelated. Therefore, ARIMA (3,1,3) model gives a best model when compared to other model.

TABLE 4: FORECASTS FROM THE MONTH APRIL 2008 TO MARCH 2010

Month	Forecast	95% Limits		Actual
		Lower	Upper	
Apr-2008	227521	218677	236364	235474
May-2008	242250	228897	255603	230462
Jun-2008	236284	220202	252366	220366
Jul-2008	242865	223177	262553	218529
Aug-2008	249561	227355	271767	217317
Sep-2008	243375	218370	268379	209039
Oct-2008	258514	230601	286427	193692
Nov-2008	251257	221068	281446	191094
Dec-2008	259661	226410	292911	192844
Jan-2009	264725	229147	300303	188599
Feb-2009	259498	221201	297795	186162
Mar-2009	274787	233726	315847	196692
Apr-2009	266401	222994	309809	193200
May-2009	276622	230179	323065	213317
Jun-2009	279900	231073	328728	217147
Jul-2009	275895	224233	327557	228211
Aug-2009	291053	236599	345507	233114
Sep-2009	281740	224781	338699	235342
Oct-2009	293729	233657	353802	242238
Nov-2009	295100	232523	357676	247735
Dec-2009	292569	226995	358144	257968
Jan-2010	307301	238853	375748	257468
Feb-2010	297296	226160	368433	258685
Mar-2010	310961	236599	385322	278613

The above table shows the forecasts of cumulative FII in BSE and NSE equity market from the period 01-04-2008 to 31-03-2010. The forecasts of the cumulative FII in BSE and NSE equity market shows positive and fluctuating trend. The forecasts of cumulative FII for the months of April 2008, May'08, June'08 and July'09 are about Rs.2,35,474 crores, Rs.2,30,462 crores, Rs.2,20,366 crores and Rs.2,28,211 crores respectively. The forecasts of cumulative FII for the months of Sep'09, Oct'09, Nov'09, Dec'09, Jan 2010 and Mar 2010 are about Rs.2,35,342 crores, Rs.2,42,238 crores, Rs.2,47,735 crores, Rs.2,57,968 crores, Rs.2,57,468 crores and Rs.2,78,613 respectively.

The forecasts for the above months are within the lower and the upper limits at 95% confidence intervals. It means that the forecast results are nearer to the actual results. The reason is that there is no change in the existing market conditions in the above period so that the actual and forecast results have no huge differences. The above table also shows that there are huge differences in the forecast results and the actual results for the remaining period. Because the following reasons have changed the market conditions and affected the FII inflows in BSE and NSE equity market.

1. The global financial crisis has reduced the FII capital inflows into the equity and debt market of the BSE and NSE.
2. The continued depreciation of Indian rupee against the US dollar has also acted as deterrent (restriction) for the FII because it lowers their returns in dollar terms.
3. The direct impact of Lehman Brothers going bankrupt and Bank of America taking over Merrill Lynch has affected the FII inflows in BSE and NSE equity market.
4. The curbs on the P-notes issue have also affected the FII capital inflows in BSE and NSE equity market.

CONCLUSION

From the above study, it is observed that the actual results of cumulative FII in BSE and NSE equity market showed the positive and fluctuating trend. The Auto Regressive Integrated Moving Average (ARIMA) Model showed no huge differences in the forecast results and the actual results for the months of April 2008, May'08, June'08 and July'09. The reason is that there is no change in the existing market conditions for the above mentioned period. The ARIMA model also showed huge differences in the forecast results and the actual results for the remaining period. The global financial crisis, depreciation of Indian rupee against US dollar, direct impact of Lehman Brothers going bankrupt and curbs on Participatory notes issue are the main reasons for restricting the FII inflows into the BSE and NSE equity market for the remaining period. From this, it can be concluded that the ARIMA model helps to identify that the positive and fluctuating trend in cumulative FIIs of Bombay Stock Exchange and National Stock Exchange will occur if the same market conditions exist.

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A STEP FORWARD: FROM FUZZY TO NEURO-FUZZY

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ABSTRACT

The main objective of this paper is to discuss two soft computing techniques. We cannot directly compare the two techniques but we can find one which best suits our experiment for classification. The two techniques are fuzzy logic and neural networks.

KEYWORDS

classification model, soft computing techniques, fuzzy logic, artificial neural networks.

INTRODUCTION

Soft computing is a field of computer science that helps in modelling and analysing imprecise data and hence deals with uncertainty and imprecision. It is very closely related to biological processes and reasoning. Some of the soft computing techniques are fuzzy logic, neural networks, evolutionary algorithms, hybrid algorithms.

In this paper, two of these soft computing techniques will be discussed in relation to the experiments performed in Matlab7.0 using FIS(fuzzy inference system) and ANFIS(Adaptive networks based on fuzzy inference system). Datasets from UCI repository have been used.

The question that now comes to our mind is that, what exactly is classification? Since, soft computing techniques apply to machine learning, classification is an algorithmic procedure for assigning a given piece of input data(instance) into one of a given number of categories(classes). It is widely used in pattern recognition. Classification is supervised learning, meaning that it learns to classify new instances based on learning from a training set of instances that have been properly labelled with correct classes. The most widely used classifiers are maximum entropy classifiers, Naive Bayes classifiers, support vector machines(SVM), decision trees, perceptrons, neural networks, fuzzy classifiers, nearest neighbour classifiers and radial basis function classifiers.

FUZZY INFERENCE SYSTEM

Fuzzy logic is a multi-valued logic derived from fuzzy set theory that deals with reasoning which is uncertain(approximate). It was a consequence of fuzzy set theory by Lofti Zadeh[10]. It has been widely used in the field of artificial intelligence and machine learning. The real world data is crisp in nature, that is, it can take values, 0 or 1. The membership function maps the input data into fuzzy sets. This process is called fuzzification. The membership functions are linguistic variables. The fuzzy inference process requires membership values to be combined with logical connectors and finally making if-then rules for classification.

The decision to be made requires construction of rules of the form:

IF input is 'X', THEN output is 'Y',

Where 'input' is the attribute for 'X' membership function and 'output' is the class and 'Y' is the decision finally made. Thus, input is the antecedent part and output forms the consequent part. For, consequent to be true, the antecedent must be true. The output that we get is defuzzified(converted back into crisp data) for the outside environment.

The Matlab7.0 provides with two FIS toolboxes: mamdani[5] type and sugeno[8] type. These two differ in their output. The former expects the output membership functions to be fuzzy sets, whereas the latter gives a linear or constant membership function as output. Mamdani is easy to work with and with fuzzy logic and its FIS, mamdani has been used.

ARTIFICIAL NEURAL NETWORKS

It is usually called Neural Networks[4]. It is a mathematical or computational model inspired by the biological neural networks. It is similar in structure and functionalities. The network consists of an interconnected group of artificial neurons processing the information to compute the result. It is an adaptive system that changes its structure based on internal or external information that flows through it during the learning phase.

Classification[1] is possible because they model complex relationships between inputs and outputs by finding patterns. Artificial neurons[4] were first proposed by Warren McCulloch in 1943.

ANFIS is a 5 layer feedforward adaptive network having square and circle nodes. The square nodes are adaptive because they have parameters while the circle nodes have none and are fixed. We get the desired output by updating the parameters according to the given training data and a learning procedure(backpropagation or hybrid).

PROBLEM STATEMENT AND RELATED WORKS

Since we need to deal with imprecise data, we use fuzzy inference system to implement a classification model and to make it better with adaptability, we use ANFIS.

The classification model categorises the input into any of the output classes. It has been applied to real world data like Lenses dataset that helps the doctor to find which type of lenses suit the patient. Iris dataset has been used with both FIS and ANFIS.

Related works[2] have been carried out by many researchers.

WORKING DATASETS

IRIS DATASET

It has 150 instances, 4 attributes and 3 classes.

Attributes are-

- Sepal length(SL)(cms)
- Sepal width(SW)(cms)

- Petal length(PL)(cms)
- Petal width(PW)(cms)

Classes are-

- Setosa
- Versicolour
- Virginica

We have the following information:

TABLE1. ATTRIBUTE INFORMATION FOR IRIS DATASET

Attribute	Minimum value	Maximum value
Sepal Length	4.3	7.9
Sepal Width	2.0	4.4
Petal Length	1.0	6.9
Petal Width	0.1	2.5

With the FIS system, this dataset has been implemented using varying labels-3,5,7,9,11 and 13. The following table shows the membership functions for two attributes:

TABLE 2. VARIABLE LABELS FOR ATTRIBUTES OF IRIS DATASET

Label	SL							SW																		
	L	M	H	VH	L	M	H	VH	L	M	H	VH														
3																										
5	VL	L	M	H	VH			VL	ML	L	M	H	MH	VH												
7	VL	ML	L	M	H	MH	VH	VL	ML	L	M	H	MH	VH												
9	PL	VL	ML	L	M	H	MH	VH	PH	PL	VL	ML	L	M	H	MH	VH	PH								
11	ZL	VL	PL	ML	L	M	H	MH	PH	VH	ZH	ZL	VL	PL	ML	L	M	H	MH	PH	VH	ZH				
13	ZL	NL	PL	VL	ML	L	M	H	MH	VH	PH	NH	ZH	ZL	NL	PL	VL	ML	L	M	H	MH	VH	PH	NH	ZH

Other two attributes, petal length and petal width have the same labels. The labels, 'L' for 'Low', 'H' for 'High', 'M' for 'Medium', 'V' for 'Very', 'P' for 'Positive', 'Z' for 'Zero' and 'N' for 'Negative'.

Triangular membership functions have been used. 90 of 150 instances form the training dataset and the rest 60 are the testing dataset. For, FIS in Matlab7.0, 3 labels have been used and 16 rules were constructed.

Another way for classification is done by degree of weighted convenience[3]. But this method is possible only when numeric data is present.

The classification then has been improved by using ANFIS.

LENSES DATASET

It has 24 instances, 4 attributes and 3 classes.

Attribute Information-

- age of the patient(AP): (1) young, (2) pre-presbyopic, (3) presbyopic
- spectacle prescription(SP): (1) myope, (2) hypermetrope
- astigmatic(AS): (1) no, (2) yes
- tear production rate(TP): (1) reduced, (2) normal

Classes-

- the patient should be fitted with hard contact lenses(HR),
- the patient should be fitted with soft contact lenses(S),
- the patient should not be fitted with contact lenses(N).

The training dataset has 14 instances and the testing dataset has 10 instances. 14 rules have been formed. The classification model for this dataset has been implemented using both FIS and ANFIS.

TABLE 3: LABELS FOR LENSES DATASET

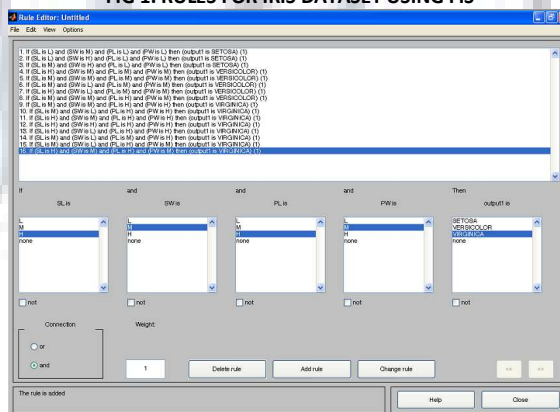
Attribute	Membership Functions(Labels)		
AP	L	M	H
SP	L		H
AS	L		H
TP	L		H

EXAMPLE

IRIS DATASET

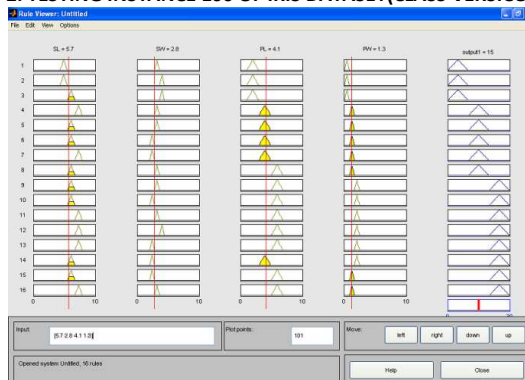
Using the Fis system of the MATLAB7.0, we get the following rules:

FIG 1. RULES FOR IRIS DATASET USING FIS



We can test the instances using the following snapshot:

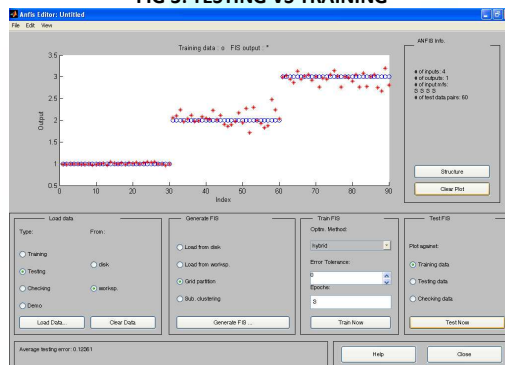
FIG 2: TESTING INSTANCE 100 OF IRIS DATASET(CLASS VERSICOLOR)



Using the method of weighted convenience[1] we find the weight of every definitive rule formed and then classify the input.

Incase of ANFIS, we load the training and the testing dataset and then compare the results of FIS and the generated output of ANFIS using the plots:

FIG 3: TESTING VS TRAINING



LENSES DATASET

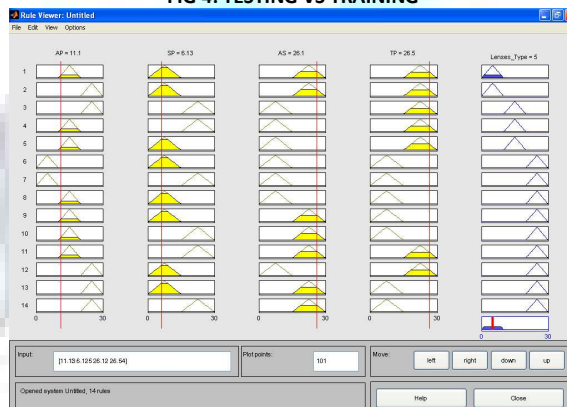
We can form the following rules:

TABLE4. RULES FOR LENSES DATASET

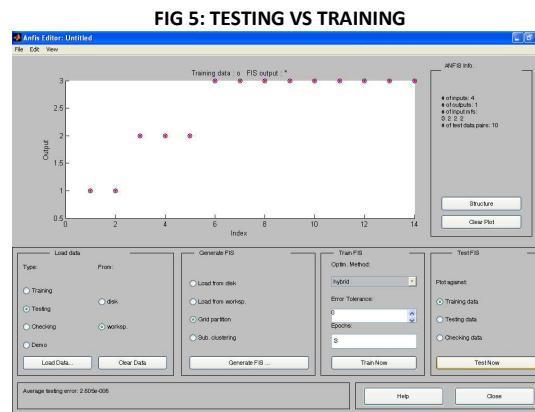
HR	S	N
{{M,L,H,H},1}	{{M,L,L,H},2}	{{L,L,L,L},3}
{{H,L,H,H},1}	{{M,H,L,H},2}	{{L,H,L,L},3}
	{{H,H,L,H},2}	{{M,L,L,L},3}
		{{M,L,H,L},3}
		{{M,H,H,L},3}
		{{M,H,H,H},3}
		{{H,L,L,H},3}
		{{H,L,H,L},3}
		{{H,H,H,L},3}

We use the mamdani FIS and for ANFIS we have the sugeno FIS.

FIG 4: TESTING VS TRAINING



We can implement this dataset using ANFIS and check the output of class 1:



CONCLUSION

From the above performed experiments, we can conclude that although fuzzy logic is a very strong concept for modelling a classification model, it can only be used better if we have numeric data. But for non numeric data like lenses data, 2 instances were not correctly classified and also we cannot increase the number of labels and perform the degree of weighted convenience method. Using the ANFIS toolbox of Matlab7.0, we can make a better classifier as the model becomes adaptive to the environmental parameters. The result using ANFIS is better than FIS. Thus, including neural networks, the model becomes better and more effective. Also, the epochs for training should be chosen according to the data because overtraining often increases the error rather than reducing it.

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**USAGE OF E-RESOURCES BY ACADEMICS – A STUDY
(WITH REFERENCE TO AFFILIATED BHARATHIAR UNIVERISTY COLLEGES, COIMBATORE CITY)**

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ABSTRACT

Recent advances in the field of information technology contribute significantly to improve the services of libraries. It has emerged as a powerful educational tool for an instant access to information. It has made a tremendous impact on the academic activities for the teachers, students and scholars. Electronic resources play a vital role in the academic field. The commonly available electronic resources namely CD-ROMs, multimedia, computer networks, Internet, ROMS, OPACs, web databases etc. have lead to a paperless society. Therefore, there is necessity to make study on the different aspects of e-resources and the issues relating to the use of e-resources by users, more particularly by the faculty members of academic institutions. The present study is an attempt to analyse the use of e-resources by the faculty members and scholars of affiliated colleges of Bharathiar University, Coimbatore and to find out the problems and constraints faced by the users in accessing the e-resources with some purposeful suggestions for its development. A well structured questionnaire is designed to collect primary data from the faculty members and research scholars from Arts and Science affiliated colleges of Bharathiar University, Coimbatore city. The data were collected randomly from 30 colleges having research department. The questionnaire was distributed to 300 respondents. Ten respondents were selected randomly from each college (Five Faculty Members and five Research scholars) for the study. From the study, most of the respondents were familiar with E-resources and used for the communication and self learning purposes. Few respondents were found difficulty in using E-resources due to lack of IT knowledge. This paper concludes that awareness should be generated among the usage of online resources and adequate training is needed to enhance the usage of E-resources.

KEYWORDS

Academics, Databases, Digital Library, Electronic Resources, Online Resources.

INTRODUCTION

In the fast-emerging and ever-growing information explosion it is very difficult to retrieve particular information without wasting time. Recent advances in the field of information technology contribute significantly to improve the services of libraries. It has emerged as a powerful educational tool for an instant access to information. It has made a tremendous impact on the academic activities for the teachers, students and scholars. The commonly available electronic resources namely CD-ROMs, multimedia, computer networks, Internet, ROMS, OPACs, web databases etc. have lead to a paperless society. Information is just a 'finger touch' away from the user and it would not be inappropriate to say that the internet has become the biggest global digital information library, which provides the fastest access to the right kind of information in nano seconds to end user at any time and at any place in the world. It acts as a powerful supplement to the traditional ways of studying and learning. The internet can provide access to essentially unlimited resources of information, not conventionally obtainable through other means.

Electronic resources play a vital role in the field of science and engineering studies. The electronic information resources have acquired a major portion of library collections. The value and use of information resources, particularly e-resources, have increased with the time. Therefore, there is necessity to make study on the different aspects of e-resources and the issues relating to the use of e-resources by users, more particularly by the faculty members of academic institutions. The present study is an attempt to analyse the use of e-resources by the faculty members of colleges affiliated to Bharathiar University, Coimbatore and to find out the problems and constraints faced by the users in accessing the e-resources with some purposeful suggestions for its development.

SCOPE AND LIMITATION

The scope of the study is limited to the knowledge and usage of e- resources in order to fulfill the academic needs of users. It focuses on the usage of e-resources available in the Arts and Science Colleges, Affiliated to Bharathiar University, Coimbatore. The limitation of this study is only focused 30 Arts and Science Colleges in and around Coimbatore city.

OBJECTIVE OF THE STUDY

The study was conducted with the following Specific Objectives:

1. To assess the amount of Knowledge and frequency in the use of the e-resources made by the academic community
2. To identify the purposes for using of e-resources
3. To know the adequacy of information in e-resources
4. To discover the problems encountered by the respondents while accessing and using e- resources
5. To suggest suitable suggestions to improve the e-resources and services for the benefit of users.

LITERATURE REVIEW

There have been a number of research studies on the use of e-resources, especially in the developed countries. Some of these studies measure usefulness; some have focused on accessibility, while others have combined all these. A review of literature reveals that the teachers and students are the most frequent users of internet. They use internet for teaching, learning and for research purposes.

In USA, several studies have been carried out addressing the issue of who uses the internet and for what. Other studies have focused specially on particular groups. For example some have been focused on by teachers, students and scholars.

Robinson⁶ in his study examined Internet use among African-American college students attending Historically Black Colleges and Universities. The respondents were surveyed by using the 43-item survey questionnaire regarding the frequency of Internet use, Internet applications most often used, and other factors to determine if the time spent on the Internet was pathological. The result of the study indicates that most of the African-American college students (76 percent) had used the Internet for more than three years. Use of the Internet for most African-American college students occurred at school (49 percent) or at home (47 percent) and they spent an average of two hours per day on-line. A small percentage of the students spent five to sixteen hours per day on the Internet, which indicates pathological Internet use. For forty-three percent of the students, their primary motivation for using the Internet was to learn and find school resources.

Adeyinka⁷ conducted a survey of the undergraduate's use of internet and its influences on their academic performance at the University of Botswana. The results indicated that 66percent of the respondents' accessed internet 1-5 hour per week. Moreover, most respondents used internet for obtaining course-related information. The results also revealed that internet contributes significantly to academic performance of the respondents.

Asemi (2005)⁸ did a case study of Medical Sciences University of Isfahan (MUI), Iran. The results of the study showed that all the respondents used the Internet frequently because all faculties had an Internet connection. It was revealed that the researchers of the university were getting quality health information and patient care through the Internet. Fifty-five percent of respondents searched for scientific health information through the Internet because the university library provided access to databases and online journals to students and staff.

Ajuwon (2006)⁹ conducted a study of the physicians' use of the Internet for health information for patient care at the University College Hospital (UCH) Ibadan, Nigeria. The findings revealed that 98% of the respondents had used the Internet. A majority (76%) accessed the Internet from cyber cafes. Ninety percent reported that they had obtained information from the Internet for patient care of this number, 76.2% had searched a database.

Chestnutt and Reynolds (2006)¹⁰ conducted a study of 457 dentists in Wales to identify how patient information on the Internet has influenced the delivery of oral care and the use practitioners make of the Internet. Thirty-nine percent of respondents agreed that information gained from the Internet had led to patients demanding inappropriate care.

The earlier studies had been based exclusively on the analysis of the access data supplied by the publishers, and many facts to give information on the characteristics, preferences and views of the users. Literature studies also show that in many studies researchers made a comparison between print and electronic journals usage. The user community is becoming more and more familiar with these tools and now they have started using them very regularly. But how much of these resources are being used, and what is the impact of this electronic era on the non-electronic era, has to be examined. The main aim of this study is to supplement the results obtained in many earlier studies, which had provided interesting general information on the use of the e-journals packages. The present study is to investigate the use of electronic journals, which are available in Indian institutions, and also to know the impact of use on usage, collection and on library environment. Technical institutions being the first to initiate the use of latest technologies, study of use and impact of electronic resources at these institutions is the need of the hour, the results of which will facilitate other academic institutions to follow.

METHODOLOGY

Keeping in view of the objectives in mind, a well structured questionnaire is designed to collect primary data from the faculty members and research scholars of Arts and science colleges affiliated to Bharathiar University, Coimbatore city. The researchers have undertaken the survey in the month of January 2011, spreading over one month. The data were collected randomly from 30 colleges having research. The questionnaire was distributed to 300 respondents. Ten respondents were selected randomly from each college (Five Faculty Members and five Research scholars) for the study. Then the data were analyzed and interpreted for the outcome and presented in the following paragraphs.

ANALYSIS

STATUS OF THE RESPONDENTS

The distribution of the Respondents according to the status is shown in the Table – No 1

TABLE NO. 1: DISTRIBUTION OF STATUS/ DESIGNATION OF THE RESPONDENTS

Status	No. of Respondent	Percentage
Faculty	173	58%
Research Scholars	127	42%
Total	300	100

Source: Field Survey

It is clear from the above table that 58 percent of the respondents are of faculty members and rests of them are of Research scholars.

DISTRIBUTION OF FACULTY AND RESEARCH SCHOLARS BY AGE

The distribution of faculty members and research scholars according to their age is shown in Table 2

TABLE NO. 2: DISTRIBUTION OF FACULTY AND RESEARCH SCHOLARS BY AGE

Age of the Respondent	No. of Respondent	Percentage
> 30yrs	118	39
31-40	80	27
41-50	64	21
< 50 yrs	38	13
Total	300	100

Source: Field Survey

It is clear from the table No.2 that in case of faculty and research scholars 39 percent of the respondents belonged to <30 age group, 27 percent of respondents belonged to 31-40 age group, 21 per cent of respondents belonged to 41-50, and 13 per cent of respondents belonged to > 50 age group.

FACULTY MEMBERS AND RESEARCH SCHOLARS FAMILIARITY WITH E- RESOURCES

The distribution Status of the respondents according to their familiarity to use E-resources is shown in Table 1.

⁶ Robinson, Jannioe W. Internet use among African-American college students: An exploratory study. <http://www.lib.umi.com/dissertations/fullcit/3156015>.

⁷ Adeyinka, Tella. Univeristy of Botswanan Undergraduate uses of the internt: Impklication on academic performance. *J. Educ. Media Lib. Sci.*, 2007, 45(2), 161-85

⁸ Asemi, Asefeh. "Information Searching Habits of Internet Users: A Case Study on the Medical Sciences University of Isfahan (MUI), Iran." *Webology* 2.1 (2005)<http://www.webology.ir/2005/v2n1/a10.html#9> >.

⁹ Ajuwon, Grace A. " Use of the Internet for health information by physicians for patient care in a teaching hospital in Ibadan, Nigeria ." *Biomedical Digital Libraries* 3.12 (2006). Available: <http://www.biodiglib.com/content/3/1/12>

¹⁰ Chestnutt, I.G. and Reynolds, K. "How Has the Internet Affected Dentistry." *British Dental Journal* . 2006. <http://www.nature.com/bdj/journal/v200/n3/full/4813196a.html>

TABLE 3: FACULTY MEMBERS AND RESEARCH SCHOLARS FAMILIARITY WITH E-RESOURCES

Use	No of Responses			Percentage
	Faculty Members	Research Scholars	Total	
Familiar	168 (97%)	98 (77%)	266	88.7
Not familiar	05 (3%)	29 (23%)	34	11.3
Total	173 (100)	127	300	100

Source: Field Survey

It is evident from Table 1 that, 88.7 percent of the faculty members and research Scholars are familiar with E- resources, while 44.37 percent replied negative. It is also observed from the table that out of 173 Faculty Members, 97% of them are familiar with E-resources and out of 127 Research Scholar, 77% of them are familiar with E-resources.

EXPERIENCE IN USE OF E-RESOURCES

Table No.4: Experience in Use of E-resources

Experience in Using Internet	No. of Respondent	Percentage
More than 4 yrs	87	29
2-4 yrs	73	24
1-4 yrs	122	41
Less than a year	18	6
Total	300	100

Source: Field Survey

Table No. 4 shows that more than third of the respondents were using E-resources for 1-4 years, whereas 29 per cent of the academic community were using it for more than 4 years and 24 per cent for 2-4 years. Rest of the respondents were using it for less than a year. The inference from the above table is that half of the respondents were using internet on an average for more than 2 years.

FREQUENCY OF USING THE E-RESOURCES

The distribution of faculty members and research scholars according to the frequency of using the E-resources is shown in the Table 5

TABLE NO: 5: FREQUENCY OF USING THE E-RESOURCES

Frequency of Using the Internet	No. of Respondent	Percentage
Daily	73	24
Thrice in a Week	90	30
Once in a Week	64	21
Once in a month	50	17
Rarely	23	08
Total	300	100

Source: Field Survey

It is evident from the Table 5 that 30 per cent of the faculty members and research scholars were using E- resources thrice in a week, 24 per cent daily, 21 per cent once in a week, 17 per cent once in a month and the remaining 8 per cent were rarely using the E-resources.

PREVENTING FACTORS ACCESSING THE E-RESOURCES

Table 6 shows the preventing factors which deny the accessibility of the E-resources to faculty members and scholars

TABLE 6: PREVENTS IN ACCESSING THE E-RESOURCES

Prevents	No. of Respondent	Percentage
No Interest	40	13
Lack of IT Knowledge	47	16
No proper internet facility in the institution	105	35
Need training	87	29
Language problem	10	03
Other reasons	11	04
Total	300	100

Source: Field Survey

It is clear from the Table 6 that the opinion of the faculty members and Research Scholars regarding preventing factors accessing the E-resources. Most of the respondents (35%) stated that no proper internet facility in the institution is the main impediment to use of E-resources, 29 per cent need training, 16 per cent lack of IT knowledge, 13 per cent no interest is the main prevent to use E-resources.

METHODS OF LEARNING E-RESOURCES

The distribution of methods of learning E- resources by faculty members and research scholars is shown in Table 7

TABLE 7: METHODS OF LEARNING E-RESOURCES

Methods	No. of Respondent	Percentage
Self –study / instruction	197	66
From colleagues/ friends	169	56
Guidance from the library staff	137	46
Guidance from the computer staff	92	31
Formal Courses	103	34

Source: Field Survey

Note: Questions with Multiple Choices

It is evident from the Table 7 that, 66 per cent of the faculty members and research scholars are learning the necessary skills to use E-resources through self-study/ instruction (i.e. by reading various books, journal, tutorials etc.), 56 per cent learned from their colleagues and friends, 46 per cent learned through the guidance from the library staff, 34 per cent are learning to use E-resources through formal courses offered by the university.

PURPOSE OF USING E-RESOURCES

Purpose of using E-resources by faculty members and research scholars is shown in the Table 8

TABLE 8: PURPOSE OF USING E-RESOURCES

Purpose	No. of Respondent	Percentage
To collect subject information	214	71
For publishing articles/ books	118	39
For Communication	261	87
For research work	158	53
For getting current information	118	40

Source: Field Survey

Note: Questions with Multiple Choices

Table 8 shows the different purposes for which the respondents used the E-resources. It is clear from the above table that 87 per cent of the faculty members and research scholars indicate that the E-resources are used for communication purposes, 71 per cent to collect subject information, 53 per cent to do their research work, 40 per cent for getting current information and 39 per cent of the faculty members and research scholars are using E-resources for publishing articles and books.

LOCATIONS OF ACCESSING OF E-RESOURCES

Table 9 highlights the location from where the E-resources were mostly accessed by the faculty members and research scholars.

TABLE 9: LOCATIONS OF ACCESSING OF E-RESOURCES

Locations	No. of Respondent	Percentage
Home	60	20
Library to access E-resources	18	6
Computer Laboratory in campus	97	32
Internet Café	83	28
Departments	42	14
Total	300	100

Source: Field Survey

From the above analysis it was observed that a majority of respondents (32 per cent) used Computer laboratory in campus, 28 per cent at the Internet Café, 20 per cent of them accessed the e-resources at their Homes. Only 14 per cent and 6 per cent of the respondents used Department and Library to access E-resources respectively.

RELATIVE FREQUENCY USE OF DIFFERENT E-RESOURCE SERVICES

To know the relative frequency in the use of different E-resources by the Faculty members and Research Scholars, Weightages of 5,4,3,2and 1 are assigned to responses of daily, thrice in a week, once in a week, once in a month, rarely use respectively. Total Weightage is calculated for each E-resources and Mean Weightage is calculated by dividing the total Weightage by the number of Respondents in the sample. Based on the Mean Weightage the E-resources have been ranked. The Distribution of users according to their relative use of different digital resources, total Weightage and ranks are shown in Table 10

TABLE 10: RELATIVE FREQUENCY USE OF DIFFERENT E-RESOURCE SERVICES

E-resource services	Total Weightages	Mean Weightages	Rank
E-mail	1147	3.83	1
Search Engines	1145	3.82	2
World Wide web	1025	3.42	3
Chatting	932	3.11	4
Frequently Asked questions	836	2.79	5
File transfer protocol	649	2.16	8
Bulletin Board Services	831	2.77	6
List Serv/ Discussion group	675	2.25	7

It is clear from the table 10 that the faculty members and research scholars are mainly using E-mail compared to other E- resources and it has got first rank. Followed by this Search Engines, World Wide Web, Chatting, Frequently Asked questions, File Transfer protocol, Bulletin Board services, List serv/ Discussion group, which have got the second, third, fourth, fifth, sixth, seventh and eighth rank respectively for their use.

PROBLEMS ENCOUNTERED IN USING INTERNET

The distribution of faculty members and research scholars indicating problems faced while using digital resources is shown in table 11

TABLE 11: PROBLEMS ENCOUNTERED IN USING INTERNET

Problems Encountered	Responses	Percentage
Slow access speed	165	55
Difficulty in Finding relevant information	116	38
It takes too long to view download pages	174	58
Too much information retrieved	88	29
Difficulty in using digital resources due to lack of IT knowledge	122	41
Limited access to computers	71	24
Electricity Failure	124	41
Important sites in subject area not known	114	38
Poor computer using skills	60	02
Time slot insufficient	102	34

Note: Questions were multiple choices

Table 11 exhibits that 58 per cent of the faculty members and research scholars stated that it takes too long to view download pages, 55 per cent slow access speed,41 per cent difficulty in using digital resources due to lack of IT knowledge and Electricity Failure, 38 per cent difficulty in finding relevant information and important sites in subject area not known as the main problem to use E-resources.

ADEQUACY OF INFORMATION IN E-RESOURCES

The distribution of faculty members and research scholars indicating the adequacy of information in E-resources is shown in the Table 12.

TABLE 12: ADEQUACY OF INFORMATION IN E-RESOURCES

Opinion	No. of Respondent	Percentage
Always	160	53
Sometimes	122	22
Never	18	06
Total	300	100

Source: Field Survey

It is clear from the table 12 that 53 per cent of the faculty members and research scholars indicate the information available in the digital resources always adequate, 22 per cent per cent indicate some time and 6 per cent indicate the information available in the E-resources is never adequate.

NEED FOR IMPROVING SKILLS USING E-RESOURCES

When the respondents were asked to respond if they like to improve their skills in the use of the E-resources, majority of the respondents (90 per cent) expressed their willingness to improve their skills in the use of E-resources.

SATISFACTION WITH THE INTERNET FACILITIES PROVIDED BY THE INSTITUTION

Further the respondents were queried regarding their satisfaction with the E-resources provided in their institutions, 49 per cent opined that they were satisfied while 20 per cent were neutral. Only 16 per cent were highly satisfied with the E-resources provided in their institutions. Where as, the rest of the respondents show their dissatisfaction with the E-resources provided in their institutions.

FINDINGS

The Following observations were made from the analysis of the study:

- It shows that 58 percent of the respondents are of faculty members and rest of them is of Research scholars.
- Most of the (88.7 percent) of the faculty members and research Scholars are familiar with E- resources, while 44.37 percent are not.
- The inference from the study is that half of the respondents were using internet on an average for more than 2 years
- About 30 per cent of the faculty members and research scholars were using E- resources thrice in a week, 24 per cent daily, 21 per cent once in a week, 17 per cent once in a month and the remaining 8 per cent were rarely using the E-resources.
- Most of the respondents (35%) stated that no proper internet facility in the institution is the main impediment to use of E-resources.
- Majority (66 per cent) of the faculty members and research scholars are learning the necessary skills to use E-resources through self-study/ instruction (i.e. by reading various books, journal, tutorials etc.),
- About 87 per cent of the faculty members and research scholars indicate that the E-resources are used for communication purposes, 71 per cent to collect subject information, 53 per cent to do their research work, 40 per cent for getting current information.
- Many of the faculty members and research scholars are mainly using E-mail compared to other E- resources and it has got first rank.
- Around 58 per cent of the faculty members and research scholars stated that it takes too long to view download pages, 55 per cent slow access speed 41 per cent difficulty in using E-resources due to lack of IT knowledge and electricity Failure.
- About 53 per cent of the faculty members and research scholars indicate the information available in the digital resources always adequate.

SUGGESTIONS /RECOMMENDATIONS FOR IMPLEMENTATION

Based on the findings, the focus of the study has been laid on efficient use of electronic resources among the faculty members and all the Research scholars in the study area. Following suggestions/recommendation are derived out of the study for other academic institutions.

- Awareness should be generated about the online journals to obtain up-date information.
- Library should provide the facilities for the user to get familiar with e-resources subscribed by the library. This can be done by the presentations organized by the concerned publishers or vendors.
- Special training programs should be organized for students and faculty member for the maximum use of e-resources so that users can adequately trace relevant information.
- More computers with the latest specifications and multimedia kit should be installed in the library for easy access to faculty, research scholars and students.
- Technical staff or technically trained staff should be appointed to assist the users in accessing the information,
- There should be complete campus networking.
- Problems related to slow connectivity should be over come by upgrading the band width.
- Information regarding the popular and the latest websites with their addresses should be displayed on the notice board in the library and in the computer centre.

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A STUDY ON IMPACT OF JOB SATISFACTION ON QUALITY OF WORK LIFE AMONG EMPLOYEES IN HOTEL INDUSTRY (WITH REFERENCE TO CATEGORIZED HOTELS IN FARIDABAD REGION)

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ABSTRACT

Job satisfaction and quality of work life go hand in hand when talked about real satisfaction since one is the outcome of other. The present paper attempts to examine the impact of job satisfaction and its characteristic on quality of work life of employees working in categorized hotel. The basic objective of the study was to determine the gender difference in term of satisfaction with quality of work life between male and female workers. Also attempt is made to measure the level of quality of work life among the employees is made. Impact of demographic variables and quality of work life between the two genders. is also determined. Data was collected quantitatively using questionnaire. Data was analyzed using tools like t-test, chi-square, ANOVA, and regression analysis to test the hypothesis and reliability of the collected data. From the findings it is clear that there exists a positive relationship between job satisfaction and quality of work life. Also it is seen that as the feeling of quality of work life increases satisfaction from job also gets enhanced. The results indicate that hotel industry which demands a hospitable and pleasing role on the part of employees working in different departments require a qualitative work life first in order to be satisfied and give their best. Thus focus on measures like job monotony, unclarity in goals, employee attrition, and role stress need to be properly handled.

KEYWORDS

Hotel industry, Job satisfaction, Job stress, Quality of work life.

INTRODUCTION

The job satisfaction of an employee is a topic that has received considerable attention by researchers and managers alike. The most important information to have regarding an employee in an organization and is a validated measure of his/her level of job satisfaction (Ball, S. D., Johnson, K., & Slattey, P. (1986)). Behavioral and social science research suggests that job satisfaction and job performance are positively correlated. (Steven Simoens, Anthony Scott, bonnie Sibbald).

The ultimate objective of any organization is to keep its employees happy, productive and sustaining their stability. This is only possible when basic requirements like clearly defined role and goal, instruction or direction, scope for creativity in workplace, less pressure leading to stress, fair and adequate compensation structure career planning, equity, training and development of employees and other such factors are been dealt with special care.

The quality of work life is concerned with type of work environment and its impact on overall effectiveness of organization as well as on individual as employees. It includes all such dimensions and parameter which can and have an impact on his decision to stay and level of performance. There are several measures and means by which organization attempts to augment their performance like participative leadership style, job autonomy, clarity in career graph, equity based decision, good physical conditions, merit based promotion etc. The present study attempts to find factors that as part of quality of work life should be considered in making employees satisfied, making work life more qualitative. The finding will help in focusing on factors that employees feel important in making quality of life better and their satisfaction with them in hotel industry.

REVIEW OF LITERATURE

Becker, Billings, Eveleth & Gilbert, 1996; Jaros, 1995; Mowday, Porter & Steers (1982); Shore, Barksdale & Shore, 1995;). Using 370 employees, (e.g., faculty, administrators, staff), from a large southeastern university, Spinelli, M., & Cavanos, G., 2000 found that role conflict and ambiguity exert a direct influence on job satisfaction and physical symptoms, which in turn influence turnover intentions.

Bharati T; Nagarathnamma B; Viswanatha Reddy S examined the effects of quality of work life factors, (e.g., role conflict, role ambiguity, management support) on job satisfying factors, (e.g., retention, higher performance, support, team work etc, and task characteristics on the job satisfaction and burnout of 266 Israeli prison guards. They found that extra organizational factors, especially clarity in direction, low stress level, made the greatest contribution to explained variance (12%) in job satisfaction. Task characteristics accounted for 4.35% and organizational variables accounted for 3.4% of the explained variance. These results suggest that extra organizational types of stresses are as important as intra organizational sources in determining an individual's levels of job satisfaction in Israel. These results also emphasize the impact of the non-work factors on work outcomes in the Israeli context.

Workers at every level form impressions regarding whether they are valued and respected from important cues that emanate from their environment, especially those that come from the leaders directly above them Blau (1999). These impressions are translated into feelings, either positive or negative that become the principal component of a worker's satisfaction. Job satisfaction is a key factor in determining an employee's commitment to work and the degree of job satisfaction to which he or she professes (Boxall, P., Macky, K. & Rasmussen, E. (2003).

Brief's (1998) *in their study in hotel industry* report that fair and equitable pay, promotions, and financial rewards for workers performance are linked to positive job satisfaction. Bruce and Blackburn also report that a clean and safe work place with supportive colleagues can influence job satisfaction. Tett, R. & Meyer, J. (1993) The study of quality of work life and job satisfaction can provide educational administrators with information to make informed judgments that improve job satisfaction and reduce dissatisfaction, and encourage department chairpersons to modify their management style by introducing more provisions for improving quality and to increase job satisfactions among faculty members.

People want to be comfortable and safe while they work. Appropriate lighting, temperature, and noise level are several aspects that keep people from being uncomfortable, and, therefore, from experiencing dissatisfaction. People want the tangible items that they need to work to perform their job well. In an office environment examples for tangibles are computers, copiers, fax machines, and phones. Furthermore, people prefer cleanliness to dirt and living close to their jobs over living far away (Iverson, R. & Derry, M. (1997).

Cooper and Marshal (1976) stated that occupational stress includes the environmental factors or stressors such as work overload, role ambiguity, role conflict and poor working conditions associated with a particular job. (Turner, B.A., & Chelladurai, P. 2005)observed that major source of stress is derived from the occupational environment; proponents of this view tend to argue that role holders in certain occupation, irrespective of individual differences, are much more likely to experience stress. Here, the emphasis is on the individual demands of various jobs that have the capacity over a period of time to exhaust the physical and psychological resource of employees in the organization.

Poznanski, P.J., & Bline, D.M. 1997, conceive of job satisfaction as resulting from the size of the discrepancy that one perceived, if any, between what he expects to receive from his work and what he perceives he is receiving. Reynolds, D & Bielb, D. (2007)) suggests that the satisfaction results from at least three general types of perceptions. First, the person must see that there is a positive increment in the level of desired outcomes he/she receives. Second, the shorter the period over which the improvement occurs, the greater is the feeling of satisfaction (called the notion of velocity). Third, positive increase in the rate of positive change also adds to the sensation of satisfaction. Rhoades and Wiesenberger (2002)) considers employee values, which are defined as those things that might be considered as conducive to his or her welfare. Sherry E. Sullivan) states satisfaction or dissatisfaction resulting from comparison that a person makes between herself and others around her.

Employees' relations with their employing organization are also well documented in many research studies. Among the most researched themes are identification with the organization, satisfaction, and work motivation. In a review on the correlates of perceived organizational support, Rhoades and Wiesenberger (2002) demonstrated that perceived support, defined by how an organization values its employees' contribution and cares about their well being, is related to favorable outcomes for employees ,job satisfaction positive mood) and for the organization (commitment, performance).

Organizational commitment has been extensively studied (see, for example, Spinelli, M., & Cavanos, G., 2000). Shore et al. (1995: 1593) argue that: "Much research literature focuses on ways of developing and enhancing commitment among employees...suggesting that organizations view commitment as a desirable attribute". Job satisfaction has been argued by Blau (1999: 1099) as "probably...the most often researched work attitude in the organizational behavior literature", being seen as a desirable outcome at both the individual and organizational level. Brief's (1998) comprehensive review of research into organizational attitudes substantiates the organizational importance of job satisfaction through its relationship to multiple behavioral and other attitudinal and performance consequences.

Onu et al. (2005) examined the factors affecting job satisfaction of field extension workers in Enugu State Agricultural Development Program in Nigeria using a sample of Forty-two extension staff randomly selected across three agricultural zones. The field extension workers indicated low level of satisfaction with their job content, conditions of service and working environment, which were subsequently identified as key factors that could enhance job satisfaction among extension personnel in Nigeria.

OBJECTIVES OF STUDY

- 1) To gauge the level of quality of work life among the employees in hotel Industry.
- 2) To comparatively measure the level of quality of work life among men and women.
- 3) To determine the relationship between job satisfying factors and quality of work life.

RESEARCH METHODOLOGY

For the present study 4 categorized hotels including 3 and 4 star hotels were selected. Employees at middle level between age group 25-45 were selected for the study .The data was collected through structured questionnaire which was personally administered by researchers. The questionnaire consisted of closed ended question (Likert scale) to gauge the reaction of customers A pilot study was conducted with 25 respondents to check the reliability of questionnaire. Total 250 questionnaire were distributed out of which 238 were returned and usable questionnaire were 220 in total .So sample of 220 is considered for present study.

ANALYSIS AND INTERPRETATION

In order to analyze the collected data SPSS 16.0 was used. In order to determine significant relation between satisfaction with QWL dimensions between male and female t-test was used. Further, Chi-square test was used to determine the association between level of job satisfactions (job characteristic factors) and quality of work life dimensions. Further, to determine significant difference between demographic factor and job satisfaction (job characteristic) dimension ANOVA was used.

Null hypothesis - 1 –There is no significant difference between male and female with respect to feeling towards quality of work life in hotel industry. As is clear in **Table -1** showing t-test for significant difference between gender with regard to feeling towards dimension of QWL feeling.

Table -1: t-test showing significant difference between gender with regard to feeling towards dimension of QWL feeling

QWL dimension	Male		Female		t- value	P value
	Mean	S.D	Mean	S.D		
Satisfaction from job	31.25	3.65	29.34	4.23	2.04	0.035*
Unclarity in direction	44.65	5.84	42.45	5.35	2.76	0.002**
Job Stress	20.45	2.98	18.67	2.65	2.68	0.004**
Overall QWL feeling	96.53	10.87	91.46	11.12	3.24	0.001**

* denotes significance at 5% level

FINDING - -From table it is thus clear that since the value of P is less than 0.01 with respect to unclarity in direction, level of stress in job and overall feeling of QWL thus null hypothesis is rejected and thus there is a significant difference between feeling towards QWL dimensions between male and female workers Also since the value of P is less than 0.05 with respect to feeling of job satisfaction it is clear that null hypothesis is rejected. It is clearly seen that in terms of gender there is a significant difference in feeling towards different dimensions of quality of work life.

INFERENCE -It was seen that female workers are more affected by feeling of lack of satisfaction, unclarity in direction and job stress than male workers. It is due to the fact that female workers need to create a balance between a good professional as well a good homemaker so the burden is more on them to manage.

Since the work pressure is same for both the genders accompanied with a feeling of performing better females are found to be largely affected by QWL dimensions & feel its major implication on feeling towards satisfaction from job as well.

Thus, if organization provides them with certain provisions like flexi timing, suitable arrangement of crèches and safe work environment with less stress the feeling of qualitative work life will definitely enhance.

Null hypothesis - 2

There is no association between job characteristic /satisfying factors and QWL

TABLE-2: CHI-SQUARE SHOWING ASSOCIATION BETWEEN JOB CHARACTERISTIC AND QUALITY OF WORK LIFE

Level of job characteristics	Level of QWL			Row total	Chi-square value	P value
	Low	Average	High			
Low	39	12	6	57	91.503	0.000**
Average	10	74	40	104		
High	13	17	29	59		
Column Total	62	103	55	220		

** denotes significance at 1% level

FINDING - From Table -2 it is clear that value of P is less than 0.01 thus rejecting the null hypothesis at 1% level, thus there is a significant association between job satisfying dimension and quality of work life. The selected factors or variables that were chosen for study like for job satisfaction including pay, promotion, career advancement, supervision showed significant association with QWL dimensions like working conditions, level of participation, flexible policies, satisfaction with organization environment, availability of necessary resources, transparency in policies etc.

INFERENCE - Thus it can be inferred that when job characteristic ranging right from designing a suitable job for selected employees to designing qualitative work environment for employees is been thought it helps in generating a good degree of satisfaction from job as well as the satisfaction from work life quality also becomes sustainable. Thus, it becomes imperative for organization to think upon bringing overall changes in making work environment more conducive, open, building positivity and linking the role of job satisfying dimensions in making employees feel satisfied form work life leading to higher productivity and performance.

It is clear from the table that as the level of quality of work life increases job satisfaction among employees also gets increased .Thus it becomes imperative that if the organization works at introducing innovative ways to make work life more qualitative then job satisfaction directly will also augment which will reflect in behavior of individuals.

Further to confirm the relation between job characteristic and quality of work life multiple regression model was applied. **From Table -3** it is clear that in this model quality of work life is taken as dependent variable and job satisfaction(X1), unclarity in direction(X2), job stress(X3) are taken as independent variable and predictor variables .

TABLE-3: MULTIPLE REGRESSION TABLE

Variable	Unstandardized coefficient		Standardized coefficient	t-value	P-value
	B	Std. error of B	Beta		
X1	0.821	0.165	0.311	3.284	0.000**
X2	-0.182	-0.132	0.102	1.213	0.161
X3	-0.258	0.281	-0.062	-0.812	0.342
Constant	109.136	5.525		14.304	0.000

FINDINGS – From table 3 it is clear that the calculated value of multiple R was found to be -0.342 ,R squared value was -0.124.The calculated F –value was - 10.120 and P value was -0.000**.. The estimate of model coefficient is 109.136 for ao, for a1 is 0.821, a2 is -0.182 and for a3 is -0.258.So the estimated model becomes –

$$109.136 = 0.821 (X1) - 0.182 (X2) - 0.258 (X3) \dots (I)$$

The R squared value of 12.4% indicates that predictor variable explains 12.4 % variance in QWL. From the ANOVA table (**Refer table -4**) it is quite clear that F-value 10.120 and P value 0.000 is highly significant less than 0.01.It can be interpreted from this that the estimated model line is not equal to zero indicating linear relationship between the predictor variable and QWL.

From table 3 and 4 it is seen that though the model do not explains to a large extent the variance caused by job satisfaction on quality of work life dimensions to a large extent however since the value of p is less than 0.05 there seems to be a linear relationship between the two stating that the two are dependent and significantly related with each other.

TABLE-4 ANOVA TABLE

	Sum of Squares	d.f	Mean square	F	Sig.
Regression	4163.414	3	1326.162	10.120	.000**
Residual	31257.612	216	138.420		
Total	35421.026	219			

It is also clear that Beta value for job satisfaction is highest (0.311) followed by unclarity in direction (0.102).The Beta value of job stress has made least contribution in this (-0.062)

INFERENCE - From above results and analysis it can be inferred that the regression model does explains to a large extent the variance caused by job characteristic on QWL however since the relationship is significantly strong it can be inferred that the two are mutually related and dependent on each other. The value of p is less than 0.01, so the independent variable job satisfaction is highly significant for the stated model. The rest of independent variables are not significant at 95% confidence level. Thus it can be concluded that as quality of work life will increases job satisfaction will also increase whereas with unclarity in direction and job stress it will reduce.

Except job satisfaction rest other factors have a lower impact on explaining the impact. Thus, if organizations take necessary action and consider the role of these job characteristic and QWL dimensions while designing plans and practices it will lead to better satisfaction and feeling of commitment amongst the employees.

Null Hypothesis -3 - There is significant impact of demographic variables like age and nature of work and tenure on feeling towards quality of work life

Null hypothesis 3.1 – Employees of higher age groups require more quality in work life

Null Hypothesis 3.2 Employees with stressful nature of work require high quality of work life

Null hypothesis 3.3 Employees with long tenure needs more quality of work life.

In order to determine impact of demographic variables on quality of work life t-test, ANOVA and Levens test for equality of variance was applied .This was applied to see whether there is any impact of demographic variable on response of employees feelings towards quality of work life .

FINDINGS (Table 5) –As hypothesized it was found that (Refer table 5, 6 and 7) that demographic variable except gender in above case do not have a significant influence on quality of work life. The significant value for age which is 0.854 reveals that all age groups exhibited similar kind of behavior with respect to quality of work life. This clears that irrespective of age each employee’s looks for better quality of work life which definitely will increase job satisfaction.

TABLE-5: INDEPENDENT SAMPLE TEST FOR DETERMINATION INFLUENCE OF AGE ON QUALITY OF WORK LIFE

	Leven’s test for equality of variance		t- value	Sig(2-tailed)	Mean difference	Standard error of difference
	F	Sig.				
QWL Equal variance not assumed	.002	.956	-.180	.854	-.0302	.15076
Equal variance not assumed			-.180	.854	-.0302	.15071

INFERENCE TABLE-It can be thus inferred that irrespective of age employees satisfaction from job highly affected their quality of work life Though hypothesis assumed that there is as such difference in feeling of work life quality due to age but the results do not confer it Thus organization should strive at its maximum to identify all possible areas and practices by way of which they could feel satisfied from work whether by generating more clarity in jobs or by creating a stress controlled work patterns but for whole workforce attempt should be made to drive maximum outcome by way of providing a qualitative work culture.

TABLE -6: INDEPENDENT SAMPLE TEST FOR DETERMINATION INFLUENCE OF NATURE OF WORK ON QUALITY OF WORK LIFE

	Leven’s test for equality of variance		t- value	Sig. (2-tailed)	Mean difference	Standard error of difference
	F	Sig.				
QWL Equal variance not assumed	.113	.735	.032	.972	.0047	.15792
Equal variance not assumed			.032	.972	.0047	.15765

FINDING- From table -6 it is seen that the significant value of nature of work which is 0.972 and its influence on quality of work life indicates that nature of duty and work do not influence quality of work, this further indicates that whatever may be the nature of work in hotel industry with respect to different departments, qualitative work life is most required.

INFERENCE - Thus, there is statistically no significant difference in employee's nature of work and perception about role of job satisfaction and its affect on quality of work life. Since every job involves pressure, commitment and responsibility along with expectation of management everybody views and considers role of having a qualitative work life as an essential tool to drive their performance

Thus organization policy designers should consider the role of different such factors that in one way or other will affect job satisfaction and work life quality.

TABLE-7 INDEPENDENT SAMPLE TEST FOR DETERMINING INFLUENCE OF TENURE ON QUALITY OF WORK LIFE

	Leven's test for equality of variance		t- value	Sig. (2-tailed)	Mean difference	Standard error of difference
	F	Sig.				
QWL Equal variance not assumed	.206	.638	.178	.842	.0220	.11701
Equal variance not assumed			.175	.844	.0220	.11746

FINDING - With regard to tenure of employees it is again seen that the significant value is 0.842 whether the tenure is long or a candidate is a newcomer. Thus since the significance value is much higher at 0.05 level of significance it can be concluded that there lies no difference in perception regarding relationship between job satisfaction and quality of work life dimensions.

INFERENCE –It can be inferred from above table that irrespective of the stay and tenure in organization employees crave and look for supporting factors that could drive their satisfaction and make work life quality more effective.

Thus it can be concluded that any of the demographic factor whether age, tenure or nature of work there lies no significant difference in perception of employees and everybody perceives job satisfaction and qualitative work life as essential factor in determining their better performance, commitment and higher results. Rather it is very much required at every level to keep people happy, satisfied, and productive and retain them for long run.

CONCLUSION

It is seen that irrespective of the gender and nature of work or tenure all the employees aspire to have a better quality of work life. It was further seen that there exists a significant relationship between quality of work life and job characteristic factors. It was also seen that as quality of work life increased job satisfaction also increased. Job satisfaction seemed to increase the quality of work life whereas factors like unclarity in direction and stressed work environment reduce quality of work life. Thus, quality of work life is seen as amongst the most prominent factor that influences job characteristic including job satisfaction among employees in hotel industry.

The result of this study supports the proposition that the degree of satisfaction in QWL is related to the degree to which an individual feels and believes that in a working environment his or her success criteria that he has designed for himself are been met. It can thus be concluded that job satisfaction correlates as well as contributes with quality of work life. Other factors like unclarity in direction or stressful work environment contribute least to quality of work life.

Thus, overall it can be concluded that quality of work life has an influence on job satisfaction of employees. Organization should strive to sustain this satisfaction among employees by providing safe and secure work environment, congenial working conditions, planned jobs with clarity in direction and defined limits to avoid unnecessary work pressure on employee's. Steps like these will ensure better performance, better retention and higher commitment towards work.

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RURAL ENTREPRENEURSHIP: EXPLORING THE OPPORTUNITIES FROM WASTE PRODUCTS OF BANANAS PLANT IN KARNATAKA

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ABSTRACT

Rural development is more than ever before linked to entrepreneurship. Institutions and individuals promoting rural development now see entrepreneurship as a strategic development intervention that could accelerate the rural development process. Furthermore, institutions and individuals seem to agree on the urgent need to promote rural enterprises: development agencies see rural entrepreneurship as an enormous employment potential; politicians see it as the key strategy to prevent rural unrest; farmers see it as an instrument for improving farm earnings; and women see it as an employment possibility near their homes which provides autonomy, independence and a reduced need for social support. To all these groups, however, entrepreneurship stands as a vehicle to improve the quality of life for individuals, families and communities and to sustain a healthy economy and environment. The entrepreneurial orientation to rural development accepts entrepreneurship as the central force of economic growth and development, without it other factors of development will be wasted or frittered away. However, the acceptance of entrepreneurship as a central development force by itself will not lead to rural development and the advancement of rural enterprises. What is needed in addition is an environment enabling entrepreneurship in rural areas. The existence of such an environment largely depends on policies promoting rural entrepreneurship. This paper is a conceptual study of Rural Entrepreneurship: Exploring the opportunities from waste products of Bananas Plant in Karnataka.

KEYWORDS

Rural, entrepreneurship, bananas plant, Karnataka.

INTRODUCTION

According to the 2001 Rural Poverty Report (RPV), 75% of the world's poor live and work in rural areas, and the majority will remain so for several decades (IFAD Rural Poverty Report, 2001; IFAD 2002). The International Fund for Agricultural Development (IFAD) stressed the need for developing poverty-reduction policies and programs with a primary emphasis on rural areas (IFAD Rural Poverty Report, 2001). Rural areas in developing countries are experiencing poverty and depopulation, are geographically more isolated, require infrastructure and subsidies, and have a lack of structural and institutional factors (IFAD Rural Poverty Report, 2001). Various social, economic, political and ecological problems in rural areas in developing countries create challenges in employment and cause increasing migration towards cities, decreasing agricultural production and increasing food shortage. A sustainable reduction in rural poverty necessitates the adaptation of further research and programs that help promote economic growth and development.

Entrepreneurship is a vital component of productivity and growth (Baumol, 1993). The Organization for Economic Cooperation and Development (OECD) defines entrepreneurs as "essential agents of change who accelerate the generation, application and spread of innovative ideas and in doing so ... not only ensure efficient use of resources, but also expand the boundaries of economic activities" (Reynolds, Hay & Camp, 1999, p.10). The Global Entrepreneurship Monitor (GEM) reported a strong positive correlation between the level of economic activity and overall economic performance (Zacharakis, Reynolds & Bygrave, 1999). GEM reported that as firm startup rates increased, growth in national GDP and the employment rate increased (Zacharakis, et al, 1999). Therefore, acting as market innovators, entrepreneurs play critical roles in economic development (Schumpeter, 1934).

Rural entrepreneurship can refer to new ventures that happen to be created in rural regions as the result of an intervention, such as a tax subsidy, to attract businesses into an area or via the in-migration of city dwellers that subsequently start businesses (c.f., Wortman, 1990).

It can also refer to the creation of ventures that result from the unique endowments in rural regions that do not exist in metropolitan areas. Such businesses may involve agriculture (viculture or the farming of high-value specialty foods such as organic produce), lifestyles (eco-tourism, spas and retreats), extraction (mining or forestry), and knowledge industries (software development or artistic-content creation). For example, Lyons (2002) provides cases studies of incubators and community-based economic development programs that utilize networking, and resource and risk pooling to overcome physical isolation and limited access to markets through the linkages that they developed.

During the past few years, those following rural development trends and strategies have probably heard a lot about the need to encourage entrepreneurial activity in rural communities. Many leading researchers in the rural development field have expressed this need, and as policymakers and rural development practitioners strive to develop strategies to sustain rural economies, increasing entrepreneurship has risen to the top of the list.

India was second among all nations in Total Entrepreneurship Activity as per the Global Entrepreneurship Monitor Report of 2002. But after several years of data, India appears to have a TEA level rather close to the world average.

BANANA PLANT

Banana is a fast growing and high biomass-yielding plant. India is the largest producer of banana next to mango. The major banana producing states are Maharashtra, Kerala, Tamilnadu, Gujarat, Bihar, West Bengal, Assam, Andhra Pradesh and Karnataka. They are cultivated primarily for their fruit, and to a lesser extent to make **fiber** and as **ornamental plants**. The fruit averages 125 grams (0.28 lb), of which approximately 75% is water and 25% dry matter. Each individual fruit (known as a banana or 'finger') has a protective outer layer (a peel or skin) with a fleshy, edible inner portion. Both skin and inner part can be eaten raw or cooked.

Banana. Banana (*Musa paradisiaca* L.) occupies over 1,64,000 hectares, mainly in Tamil Nadu, West Bengal, Kerala, Maharashtra, Gujarat, Karnataka, Assam, Andhra Pradesh and Bihar. Though some inferior types of banana are found growing as far north as the Himalayas, its commercial importance is mainly limited to the more tropical conditions, such as those prevailing in central, southern and north-eastern India. It is a moisture- and heat-loving plant and cannot tolerate frost or arid conditions.

VARIETIES. Cultivated varieties are broadly divided into two groups: table and culinary. Among the former are 'Poovan' in Madras (also known as 'Karpura Chakkarekeli' in Andhra Pradesh); 'Mortaman', 'Champa' and 'Amrit Sagar' in West Bengal; 'Basrai', 'Safed Velchi', 'Lal Velchi' and 'Rajeli' in Maharashtra; 'Champa' and 'Mortaman' in Assam and Orissa; and 'Rastali', 'Sirumalai', 'Chakkarekeli', 'Ney Poovan', 'Kadali' and 'Pacha Nadan' in southern India. 'Basrai', which is known under different names, viz. 'Mauritius', 'Vamankeli', 'Cavendish',



'Governor', 'Harichal', is also grown in central and southern India. Recently, the 'Robusta' variety is gaining popularity in Tamil Nadu and **Karnataka**. The 'Virupakshi' variety (Hill banana) is the most predominant variety in the Palni Hills of Tamil Nadu. Among the culinary varieties, Nendran bananas, 'Monthan', 'Myndoli' and 'Pacha Montha Bathis' are the leading commercial varieties in southern India. 'Gros Michel' is a recent introduction into southern India; it is suitable for cultivation only under garden-land conditions and is generally fastidious in its cultural requirements. It is not, therefore, in favour with the cultivation.

Banana is one of the important fruits grown in **Karnataka**, cultivated in 52,613 ha, with a production of 1.3 million tonnes and a productivity of 24.6 tonnes /ha, that is below the national average (30.6 tonnes/ha). The main constraints in banana cultivation in the state are: low plant population, local preference for low yielding varieties like Elakki, poor crop management, prevalence of virus complex such as bunchy top, banana streak and bract mosaic and fungal diseases (*Fusarium* wilt), sigatoka leaf spot and nematodes. Karnataka has a good potential for improving the productivity with the adoption of improved varieties and technologies:

- Use of variety Grand Naine to replace Dwarf Cavendish
- Use of disease free quality tissue culture planting material
- High density planting in double row system
- Use of pseudostem for vermicomposting.

About 90% of banana produced is consumed domestically as fresh fruit. Merely 5% is consumed in processed form providing a good potential for future processing. **About 2.5% is only** processed purely as **banana products** and the rest as an ingredient in **other foods**. About 17 varieties of products could be made from banana. The primary product of banana in market is "**fried chips and candy**" which constitute around 31 %, rest as **banana puree** 9%, banana pulp 3%, banana beer 3%, banana wafers 3%, banana powder 6% and others. There is a good market demand of all banana products. There is an ample of new local market growing in India. Most of the banana product manufacturers are in the small scale sector. The government of India has set up a separate full-fledged ministry named "Ministry of Food Processing Industries" for the development and promotion of food processing industries. To boost fruits and vegetables processing, the ministry is extending financial support for setting up new units, modernization and up gradation of existing units. India has an excellent scope for development of several value added products like juice, biscuit, banana powder and industrial amylase enzyme with longer shelf life. "Foro Social Bananero" (Banana Social Forum) and (Corporation for the Promotion of Exports and Investments). Acoustic Laboratory of Dept. of Physics, Nagpur University.

EXPLORING THE OPPORTUNITIES FROM WASTE PRODUCTS OF BANANAS PLANT

Banana is one of the earning in the hands of rural people. There is lot of opportunities from banana plant. Some of the products which can be produced are given below -

1. Paper
2. Fiber Crockery



3. Candy
4. Banana Leaf Furniture
5. Banana – Leaf Round-Shaped Waste Basket



6. Banana- Leaf Toile



7. Sea grass Magazine Rask



8. Tissue Box



9. Natural fibers in banana plants in producing rotationally molded plastics,
10. Product range includes handmade paper made from banana fiber, photo albums, souvenir fans, boxes and folders, examples of the handicrafts produced and sold are lamp shades, boxes, book marks, gift bags, cards, baskets, and hats.
11. Boards
12. Partition walls and other utilities: These boards may be used for partition walls, false ceilings and as insulating panels.
13. Packing material: Boxes made from these boards can be used for transport of fruits and other materials.
14. Files and cover paper: Thicker varieties of banana paper can be used for making files, covers and packing materials.
15. Expansion joint pads: Asphalted banana boards can also be used as expansion joint pads in the construction of bridges. These are much cheaper than conventional ones available in the market.
16. Banana fiber into sanitary pads

ADVANTAGES

1. Exploring the opportunities from waste products of Bananas
2. Green Product
3. Protecting green environment
4. Earnings in the hands of rural people
5. Development in the rural environment.

The major problems/challenges faced by rural entrepreneurship are listed below.

- Lack of knowledge
- Government support
- Training and development
- Technical information: lack of awareness on technology and processing
- Marketing and finance operations: The entrepreneur still has to make the decision relating to each of the above functions.
- Credit: Mostly forced to rely on personal savings, borrowing from friends and relatives and moneylenders.

CONCLUSION

Banana is a fast growing and high biomass-yielding plant. Bananas consist mainly of sugars (glucose, fructose and sucrose) and fiber, which makes them ideal for an immediate and slightly prolonged source of energy. The product which is made from natural raw material helps in maintaining a good health and good environment. As it is green product the government should motivate the research to conduct research in these type of green product which will help the rural people in earning and have a rural development.

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HUMAN RESOURCE ACCOUNTING (HRA) - A CONCEPTUAL FRAMEWORK AND INTERNATIONAL DEVELOPMENTS**DR. AJAZ AKBAR MIR****ASST. PROFESSOR****SCHOOL OF BUSINESS STUDIES****ISLAMIC UNIVERSITY OF SCIENCE AND TECHNOLOGY****AWANTIPORA, PULWAMA – 192 122****MANMEET SINGH****ASST. PROFESSOR****SCHOOL OF BUSINESS STUDIES****ISLAMIC UNIVERSITY OF SCIENCE AND TECHNOLOGY****AWANTIPORA, PULWAMA – 192 122****ABSTRACT**

Human Resource Accounting (HRA) involves accounting for expenditures related to human resources as assets as opposed to traditional accounting which treats these costs as expenses that reduce profit. Interest and contributions to growth in HRA have been evident in a number of countries. The strong growth of international financial reporting standards (IFRS) is an indication that the environment for international financial accounting is one that potentially encourages the consideration of alternative measurement and reporting standards and lends support to the possibility that future financial reports may include non-traditional measurements such as the value of human resources using HRA methods.

KEYWORDS

Human Resource Accounting, HRA measurement models, International Financial Reporting, International Financial Reporting Standards.

INTRODUCTION

Fast few decades have witnessed a global transition from manufacturing to service based economies. The fundamental difference between the two lies in the very nature of their assets. In the former, the physical assets like plant, machinery, material etc. are of utmost importance. In contrast, in the latter, knowledge and attitudes of the employees assume greater significance. For instance, in the case of an IT firm, the value of its physical assets is negligible when compared with the value of the knowledge and skills of its personnel. Similarly, in hospitals, academic institutions, consulting firms etc., the total worth of the organisation depends mainly on the skills of its employees and the services they render. Hence, the success of these organizations is contingent on the quality of their Human Resource- its knowledge, skills, competence, motivation and understanding of the organisational culture. In knowledge –driven economies therefore, it is imperative that the humans be recognised as an integral part of the total worth of an organisation. However, in order to estimate and project the worth of the human capital, it is necessary that some method quantifying the worth of the knowledge, motivation, skills, and contribution of the human element as well as that of the organisational processes, like recruitment, selection, training etc., which are used to build and support these human aspects, is developed. Human resource accounting (HRA) denotes just this process of quantification/measurement of the Human Resource. The American Accounting Association's Committee on Human Resource Accounting (1973) has defined **Human Resource Accounting** as "the process of identifying and measuring data about human resources and communicating this information to interested parties". HRA, thus, not only involves measurement of all the costs/investments associated with the recruitment, placement, training and development of employees, but also the quantification of the economic value of the people in an organisation. Flamholtz (1971) too has offered a similar definition for HRA. They define HRA as "the measurement and reporting of the cost and value of people in organizational resources". As far as the statutory requirements go, the Companies Act, 1956 does not demand furnishing of HRA related information in the financial statements of the companies. The Institute of Chartered Accountants of India too, has not been able to bring any definitive standard or measurement in the reporting of human resources costs. While qualitative pronouncements regarding the importance of Human Resources is often made by the chairmen, in the AGM, quantitative information about their contribution is rarely recorded or communicated. There are a few organizations, however, that do recognize the value of their human resources, and furnish the related information in their annual reports. In India, some of these companies are : Infosys, Bharat Heavy Electricals Ltd (BHEL); the Steel Authority of India Ltd. (SAIL), the Minerals and Metals Trading Corporation of India Ltd. (MMTC), the Southern Petrochemicals Industries Corporation of India (SPIC), the Associated Cement Companies Ltd, Madras Refineries Ltd. , the Hindustan Zinc Ltd. , Engineers India Ltd, the Oil and Natural Gas Commission, Oil India Ltd., the Cement Corporation of India Ltd. etc.

HISTORICAL DEVELOPMENT IN HRA

The traces of a rudimentary HRA can be found in the Medieval European practice of calculating the cost of keeping a prisoner versus the expected future earnings from him. The prisoners in those days were seen to be the general property of the capturing side. Consequently, after the victory a quick decision regarding whether to capture a prisoner or to kill him had to be taken based on the costs involved in keeping him and the benefits accruing from killing him. However, these represented very rough measurements with limited use. The development of HRA as a systematic and detailed academic activity, according to Eric G Falmholtz (1999) began in sixties. He divides the development into five stages. These are:

First stage (1960-66): This marks the beginning of academic interest in the area of HRA. However, the focus was primarily on deriving HRA concepts from other studies like the economic theory of capital, psychological theories of leadership- effectiveness, the emerging concepts of human resource as different from personnel or human relations; as well as the measurement of corporate goodwill.

Second stage (1966-71): The focus here was more on developing and validating different models for HRA. These models covered both costs and the monetary and non-monetary value of HR. The aim was to develop some tools that would help the organisations in assessing and managing their human resource/asset in a more realistic manner. One of the earliest studies here was that of Roger Hermanson, who as part of his Ph.D. studied the problem of measuring the value of human assets as an element of goodwill. Inspired by his work, a number of research projects were undertaken by the researchers to develop the concepts and methods of accounting for human resource.

Third Stage : (1971-76) This period was marked by a widespread interest in the field of HRA leading to a rapid growth of research in the area. The focus in most cases was on the issues of application of HRA in business organisations. R.G. Barry experiments contributed substantially during this stage. (R.G.Barry Corporation: 1971)

Fourth Stage (1976-1980): This was a period of decline in the area of HRA primarily because the complex issues that needed to be explored required much deeper empirical research than was needed for the earlier simple models. The organisations, however, were not prepared to sponsor such research. They found the idea of HRA interesting but did not find much use in pumping in large sums or investing lot of time and energy in supporting the research.

Stage Five (1980 onwards) : There was a sudden renewal of interest in the field of HRA partly because most of the developed economies had shifted from manufacturing to service economies and realized the criticality of human asset for their organisations. Since the survival, growth and profits of the organisations were perceived to be dependent more on the intellectual assets of the companies than on the physical assets, the need was felt to have more accurate measures for HR costs, investments and value. An important outcome of this renewed interest was that unlike the previous decades, when the interests were mainly academic with some practical applications, from mid 90s the focus has been on greater application of HRA to business management. Different types of models to suit the specific requirements of the organisations have been developed incorporating both the tangible and the intangible aspects. Also, larger number of organisations actually began to use HRA as part of their managerial and financial accounting practice.

Today, human and intellectual capital is perceived to be the strategic resources and therefore, clear estimation of their value has gained significant importance. The increased pressures for corporate governance and the corporate code of conduct demanding transparency in accounting have further supported the need for developing methods of measuring human value. In India, human resource valuation has not yet been institutionalized though, as mentioned above, many public as well as private have adopted HRA.

HRA MEASUREMENT MODELS

Human Resource Accounting may be measured in terms of human resource cost or in terms of human resource value. According to Flamholtz's model for measurement of original human resource costs (1973, 1999, p. 59), human resource costs may be explained in terms of the two major categories of acquisition costs and learning costs. Acquisition costs include the direct costs of recruitment, selection, hiring and placement, and the indirect costs of promotion or hiring from within the firm. Learning costs include the direct costs of formal training and orientation and on-the-job training. In a human resource accounting system, these costs are reported in asset accounts with future economic benefits rather than as expenses. Flamholtz (1999, p. 160) noted that the concept of human resource value is derived from general economic value theory, and like all resources people possess value because they are capable of rendering future service. Thus as Flamholtz notes, an individual's value to an organization can be defined as the present value of the future services the individual is expected to provide for the period of time the individual is expected to remain in the organization. The Stochastic Rewards Valuation Model, originally developed by Flamholtz (1971) for human resource valuation, and further explained in Flamholtz (1999), is a five step process that begins with defining the various service states or organizational positions that an individual may occupy in the organization. The next step is to determine the value of each state to the organization, the service state values, which can be calculated either by using a number of methods such as the price-quantity method or the income method. Then the person's expected tenure or service life in the organization is calculated and the person's mobility probability or the probability that a person will occupy each possible state at specified future times is derived from archival data. Next the expected future cash flows that the person generates are discounted in order to determine their present value. According to Flamholtz (1999, pp 160-161), there is a dual aspect to an individual's value. First, the person's "expected conditional value," is the amount the organization could potentially realize from his or her services if the person maintains organizational membership during the period of his or her productive service life. Second, the person's "expected realizable value," is the amount actually expected to be derived, taking into account the person's likelihood of turnover. Using the Flamholtz model, Flamholtz, Bullen & Hua (2003) showed a practical method for calculating ROI on management development, and showed the incremental cash flows that an organization will receive due to investment in management development. The article concluded that use of HRA as a tool to measure the value of management development enhances not only the value of human capital but also the value of management accounting. Similar to the Flamholtz model, another earliest model of human resource value measures human capital by calculating the present value of a person's future earnings (Lev & Schwartz, (1971). Dobija (1998) proposes an alternate model for capitalization, where the rate of capitalization is determined through the natural and the social conditions of the environment. Utilizing a compound interest approach, this method takes into account the three factors for valuing the human capital embodied in a person. These include the capitalized value of cost of living, the capitalized value of the cost of professional education, and the value gained through experience. Alternately, Turner (1996) refers to the framework issued by the International Accounting Standards Committee and recommended the use of the present value of the value added by enterprise, and measures assets by the four methods of historical cost, current cost, realizable value and present value. Cascio (1998) proposed a method for measuring human capital based on indicators of human capital of innovation, employee attitudes and the inventory of knowledgeable employees. According to this method, innovation commands a premium and therefore needs to be measured, for example by comparing gross profit margins from new products to the profit margins from old products. Employee attitudes predicting customer satisfaction and retention are an important indicator of human capital and therefore need to be measured, as well as measures of tenure, turnover, experience and learning.

NEED FOR HRA

According to Likert (1971), HRA serves the following purposes in an organisation:

1. It furnishes cost/value information for making management decisions about acquiring, allocating, developing, and maintaining human resources in order to attain cost-effectiveness;
2. It allows management personnel to monitor effectively the use of human resources.
3. It provides a sound and effective basis of human asset control, that is, whether the asset is appreciated, depleted or conserved.
4. It helps in the development of management principles by classifying the financial consequences of various practices.

HRA is a management tool which is designed to assist senior management in understanding the long term cost and benefit implications of their HR decisions so that better business decisions can be taken. If such accounting is not done, then the management runs the risk of taking decisions that may improve profits in the short run but may also have severe repercussions in future. For example, very often organisations hire young people from outside on very high salaries because of an immediate business requirement. Later on, however, they find that the de-motivating impact of this move on the existing experienced staff has caused immense long term harm by reducing their productivity and by creating salary distortions across the organisational structure. HRA also provides the HR professionals and management with information for managing the human resources efficiently and effectively. Such information is essential for performing the critical HR functions of acquiring, developing, allocating, conserving, utilizing, evaluating and rewarding in a proper way. These functions are the key transformational processes that convert human resources from 'raw' inputs (in the form of individuals, groups and the total human organization) to outputs in the form of goods and services. HRA indicates whether these processes are adding value or enhancing unnecessary costs. In addition to facilitating internal decision making processes, HRA also enables critical external decision makers, especially the investors in making realistic investment decisions. Investors make investment decisions based on the total worth of the organisation. HRA provides the investors with a more complete and accurate account of the organisation's total worth, and therefore, enables better investment decisions. For example, conventional financial statements treat HR investments as "expenditures". Consequently, their income statement projects expenditures to acquire, place and train human resources as expenses during the current year rather than capitalizing and amortizing them over their expected service life. The balance sheet, thus, becomes distorted as it inaccurately presents the "total Assets" as well as the "net income" and, thereby, the "rate of return" which is the ratio of net income to the total assets. HRA helps in removing this distortion. Furthermore, in a business environment where corporate social responsibility is rapidly gaining ground, HRA reflects the extent to which organisation contributes to society's human capital by investing in its development. Finally, in an era where performance is closely linked to rewards and, therefore, the performance of all groups/departments/functions needs to be quantified to the extent possible, HRA helps in measuring the performance of the HR function as such.

HUMAN RESOURCE ACCOUNTING AND INTERNATIONAL FINANCIAL REPORTING SANDARDS

In recent years organisations have been moving toward adoption of more complex measurement methods in financial reporting compared with the traditional historical cost approach to asset measurement, including a focus on the measurement of the time value of money and present value calculations. Meeting, Luecke & Garceau (2001, p. 57) indicate that in many cases the expected cash flow approach is a better measurement tool than traditional methods, and that CPAs should use it to report asset and liability values in the absence of specific contractual cash flows. Certain current assets are now reported at their fair

market values at each balance sheet date, and many items on the balance sheet that are noncurrent are measured at the present value of the estimated future cash flows. Campbell, Owens-Jackson, & Robinson (2008, p. 31), note that fair value accounting, which SFAS No. 157 requires in some areas of financial statement reporting starting in fiscal years beginning November, 2007, attempts to calculate and report the present value of future cash flows associated with an asset or liability. As accountants have become more accustomed to complex measurement approaches, some similar to the approaches taken in developing HRA value measures, it seems reasonable that non-traditional HRA measures may become more accepted in future financial reports. In addition there has been increased interest in accounting for intangible assets in financial reporting by both the Financial Accounting Standards Board and the Securities and Exchange Commission. As noted in Flamholtz, Bullen & Hoa (2002, p. 948), since human resources are a primary component of intangible Assets, the state is being set for a renewed interest in HRA from a financial accounting perspective. standards affected by these developments. In fact, the Securities and Exchange Commission (January 4, 2008) recently announced in November 2007 that non-U.S. companies listed on the U.S. stock exchanges could use International Financial Reporting Standards (IFRS) instead of U.S. GAAP, and if they choose to use IFRS, would no longer be required to provide a reconciliation between their reported numbers and U.S. GAAP. However, in recent months, the adoption of the IFRS by U.S. companies has been strongly debated, and it will be seen in the years ahead whether this materializes. Yet, the consideration of international reporting standards is another indication that the environment for financial accounting reporting is one that potentially encourages the consideration of alternative measurement and reporting standards. Since 2001, the International Accounting Standards Board (IASB) has been developing and promulgating the IFRS (International Accounting Standards Board, 2009). Prior to 2001, the International Accounting Standards Committee (IASC) issued International Accounting Standards (IAS), which were adopted initially by the IASB when it replaced the IASC. While the IFRS do not currently have standards requiring HRA, it could be argued that they are moving closer to providing more flexible approaches to accounting measurements and reporting.

HUMAN RESOURCE ACCOUNTING IN MANAGERIAL REPORTING AND DECISION MAKING

In addition to external financial reporting, HRA may be useful as a managerial tool to aid in making managerial decisions that will benefit the long-run strategic goals and profitability of the company. However even if human assets are not reported on the face of external financial statements, HRA can play a crucial role in internal managerial decision-making, and HRA measures can be used to show that investments in a company's human resources may result in long-term profit for the company (Bullen, 2007, p. 89). When managers go through the process of HRA measurement treating human resources as capital assets, they are more likely to make decisions that treat the company's employees as long-term investments of the company. Flamholtz (1979) describes the HRA paradigm in terms of the "psycho-technical systems" (PTS) approach to organizational measurement. According to the PTS approach, the two functions of measurement are: 1) process functions in the process of measurement and 2) numerical information from the numbers themselves. Whereas one role of HRA is to provide numerical measures, an even more important role is the measurement process itself. The HRA measurement process as a dual function attempts to increase recognition that human capital is paramount to the organization's short and long-term productivity and growth. When managers go through the process of measuring human resources, they are more likely to focus on the human side of the organization and are more likely to consider human resources as valuable organizational resources who should be managed as such (Bullen, 2007, p. 89). For example in a potential layoff decision, with use of HRA measures in addition to only traditional accounting measures, management is better likely to see the hidden costs to the company's human resources and the long-term implications to the human assets. This is because HRA views human resources as assets or investments which must be maintained for long-run productivity (Bullen, p. 90). Layoffs may affect future long-term profits from lost productivity, costs of rehiring and retraining when business returns, and costs of lower morale of existing workforce. If management quantified the actual costs of layoffs, management might be less inclined to use layoffs as a way to cut costs and boost short-term profits at the expense of longrun productivity and profits (Bullen, p. 90). Flamholtz, Bullen & Hua (2003) utilized the HRA measure of expected realizable value, and found that employees' participation in a management development program increased the value of the individuals to the firm. In addition the authors noted (p. 40) that the HRA measures provided upper level management with an alternative accounting system to measure the cost and value of people to an organization. Thus HRA represented both a paradigm or way of viewing human resource decisions, and the set of measures for quantifying the effects of human resource management strategies upon the cost and value of people as organizational resources.

Davidove & Schroeder (1992) indicate that too many business leaders have no generally accepted definition or accounting procedure for tracking training investments, and note that a lower training investment is not automatically better for an overall return on investment. The authors suggest that although many business leaders still view training as an overhead expense, with thorough ROI evaluations training departments can convince business to view them as partners in creating the assets crucial to organizational success. Other authors have expressed similar views suggesting the benefits of HRA measurements and the process of measuring human resources. For example Johanson & Mabon (1998) indicate that expressing human resource interventions in financial terms and /or cost benefit terms is more effective than using soft accounting information such as data on job satisfaction. Because the classical function of accounting is the determination of the value of the economic activity, performing analysis with hard numbers such as cost-benefit analyses helps us determine how resources should be used by human resources for various interventions. Toulson & Dewe (2004) conducted a survey study utilizing component analysis and found two reasons why measuring human resources is important. The first is that measurement reflects the strategic and competitive importance of human resources, and the second suggests that to earn credibility, human resources must be expressed in financial terms. McKenzie & Melling (2001) suggest that, if properly implemented, the human capital planning and budgeting process will become a key driver of strategy in that strategic human capital planning and budgeting ensures that the best resources are mobilized for each internal process. They indicate that too often organizations focus 100% on meeting the financial budget first without consideration of the effect the cost slashing will have on strategy, and note that the financial numbers are a lagging indicator of where a firm has been and should not be substituted for leading indicators of where the firm is going. Rather management should focus clearly on causal, leading indicators that drive successful financial measures, and that it is through skills-based budgeting that the fallacy of financial focus can be avoided. Moore (2007) suggests that the value of human capital should be more fully considered when making decisions about the acquisition and disposal of people—and notes that the accounting practices currently employed by companies can have an undue influence in driving the strategic decisions of these companies. Moore notes that there are parallels between the process of acquiring an employee (a human capital asset) and that of acquiring a fixed capital asset. However while most companies acknowledge the contributions of its employees, they do not think of the acquisition or disposal of human capital assets in the same way or with the same thoughtful planning or strategic thinking as they do fixed capital assets.

INTERNATIONAL DEVELOPMENTS IN HUMAN RESOURCE ACCOUNTING

Interest in HRA related reporting has grown in a number of countries across continents. In discussing "HR metrics," Hansen (2007) notes that two thirds of the 250 largest companies in the world now issue sustainability reports along with their financial reports in order to capture the full value of the organization. Global standards for sustainability reporting require the disclosure of workforce data that reflect the potential for future performance and profitability. Sustainability reporting has been formalized under guidelines by the Global Reporting Initiative, an international network of business, labor investors and accountants. Schwartz and Murphy (2008) also comment on human capital metrics, suggesting that a class on the subject would benefit all undergraduate management majors. They suggest that primary among those benefits is a change in mind set toward using data and metrics to design and evaluate management policy rather than relying on experience, fad or hype; and suggest that students familiar with HR metrics should be better equipped to prove and enhance the contributions of human resources to their organizations. Some research has included aspects of HRA in studies examining and comparing reporting practices of a number of countries. A study by Subbarao & Zehgal (1997) gave a macro-level perspective to HRA disclosure in financial statements by analyzing the differences across countries in the disclosure of human resources information disclosure in annual reports across six countries. The authors found differences in disclosures of HR information across countries and provided accounting and financial professional insights on the HR information areas they need to focus on in their country. In another study, Boedker, Mouritsen & Guthrie (2008) examined contemporary trends from Europe, Australia, and the United States, in "enhanced business

reporting" (EBR), which includes aspects of HRA. The authors found a vast diversity in international EBR practice, including measurement and reporting models, and suggested the need for further research about the barriers to and consequences of harmonization.

SCANDINAVIA

The Scandinavian countries have taken a particularly strong interest in the area of HRA. For example, the Value Driving Talks (VDT) model was developed by Arne Sandervang (2000), and tested in an empirical study in a Norwegian business firm in the electrical sector. The model, which calculates financial returns on an organization's investments in competence development, focuses on employee training or competence development as its strategic focus, and aligns investment in competency development to the overall business strategy to help organizations with their strategic human resource management goals. The participants assess the benefits of the competency program through a benefit description statement that shows a comparison of the potential benefits and experienced improvements. A calculation is made of the benefits to the company and compared to the costs of training in order to arrive at the Return on Investment of training and development. Two Swedish studies experimented with reporting HRA measures in financial statements. The Statement of Human Resources, published by Telia, a Swedish National telecommuting Company (Telia, 1996) and the Statement of Human Resources provided by the Swedish Civil Aviation (Swedish Civil Aviation Administration, 1998) provided some insights on the reporting formats. In case of Telia, in addition to a human resources report, the financial statements included a profit and loss account and a balance sheet that included investments in human resources. The statement provided by the Swedish Civil Aviation Administration provided the human resource income statement and a human resources balance sheet showing the change in the percent of value of human capital, number of employees and the calculated value of human capital, in addition to other key personnel indicators.

Roy (1999) reports on a case study on Skandia Group- one of the first companies known for its work on intellectual capital, and provides an interesting example for organizations desirous of managing their intellectual capital. Included in the case study is the process of development of the Skandia Navigator and the Dolphin Navigator under the guidance of Leif

Edvinsson, one of the first persons to be documented as a knowledge manager, The Skandia Navigator successfully introduced new business ratios that emphasized an organization's intangible assets rather than tangible ones. The Dolphin Navigator developed was an IT infrastructure that would help to distribute information regarding Skandia Navigator business

planning worldwide in a cost effective manner. Grojer (1997) gives an interesting perspective on why HRA has taken roots in Scandinavia especially Sweden, as compared to other parts of Europe, by suggesting that human resource accounting measures can be successfully introduced only when it suits the social order in organizations—and Scandinavian management and the Swedish organizational social order suits HRCA. Grojer notes that introduction of new personnel key ratios in financial key ratio pages in organizations may result in the change in the social order between the management elite, and will therefore be a problematic process. A possible conclusion from this perspective is that human resource measures may be introduced smoothly in organizations when these measures would conform to the organizational social order, but that further research needs to study this area of HRA and social order in organizations in order to help us understand the full implications of this factor. Olsson (1999) studied measurement of personnel through human resource accounting reports as a procedure for management of learning in the hospital sector of Northwest of Stockholm, and reported that learning in smaller groups is an effective means to make organizational communication regarding intellectual capital within the organization, helping organizations learn better on how to report human resources value. Olsson (2001) provided information on annual reporting practices related to human resources in corporate annual reports of major Swedish companies. Vuontisjarvi (2006) explored by means of content analysis the extent to which the largest Finnish Companies have adapted socially responsible reporting practices in a research study focusing on Human Resource (HR) reporting in corporate annual reports with criteria set on the basis of the analysis of the documents published at the European level in the context of corporate social responsibility with special attention to the European Council appeal on CSR. The results of the content analysis indicate that although social reporting practices are still at an early stage of development in Finland, the most reported theme was training and staff development. A positive sign was that the majority also disclosed themes of participation and staff involvement and employee health and well-being, and nearly one third made references to their work atmosphere or job satisfaction survey. However disclosures lacked overall consistency and comparability with each other, and quantitative indicators were disclosed by few.

UNITED KINGDOM

Morrow (1996 & 1997) investigated the concept of football players in the United Kingdom as human assets and the importance of measurement as the critical factor in asset recognition. In another publication Wagner (2007) suggested that human capital (people and teams) is one of the intangible assets that investors look for in valuing a company, along with structural capital (processes, information systems, patents) and relational capital (links with customers, suppliers, and other stakeholders). However, according to an analysis of more than 600 manufacturing and service companies in research led by Dr. Chris Hendry, Centenary Professor of Organizational Behaviour and Human Resource Management at the Cass Business School, City University of London, Wagner notes that annual reports now overemphasize the role of relationship capital in company performance and minimize the role of human capital, giving a skewed view of companies' future performance. A conclusion was that the long-term value of innovative workers is not getting enough attention from companies preparing annual reports for investors, according to research for Britain's Economic and Social Research Council. Although the annual reports provide glowing accounts of R&D spending and numbers of patents, including those generated by the innovators have left the company, the reports are less likely to focus on the numbers of innovators that have left the company and have thus reduced the company's future prospects for innovation.

AUSTRALIA AND NEW ZEALAND

Gusenow and Tower (2006) note that the Australian Football League (AFL) is Australia's premier spectator sport involving millions of people across a wide range of communities, and that it is not surprising that the most valuable assets as regarded by AFL clubs and the AFL hierarchy are the players, the organization's biggest revenue drivers. However in the authors' survey of 79 AFL-linked individuals and 58 accountants and accounting academics to assess whether key stakeholders considered putting the value of players on a balance sheet a plausible idea, findings showed that the majority of respondents disagreed with the concept of showing the value of AFL players in their clubs' balance sheet. However it is interesting to note that the results from the logistic regression analysis and ANOVA analysis show there is a significant relationship between the concept of valuing AFL players, and both the type of respondent and their knowledge of accounting. Gusenow and Tower note that although player valuation is a plausible and arguably important idea, a reason for the resistance by AFL respondents could be that AFL has a salary cap to limit amounts paid to players and no transfer fee system. Although the evidence from study did not demonstrate a need to implement player valuations, a move towards financial statement player valuation may be needed if AFL clubs emulate other overseas sporting codes and list on the stock exchange. Other Australian authors Whiting & Chapman (2003) also investigated the merits of HRA in a professional sport—rugby. The authors comment that the Australia and New Zealand rugby union is a combination guaranteed to stir patriotic feelings across the Tasman. The authors raise the question that since rugby players are the team's most valuable assets, should their value be placed on the balance sheet, and does doing so make any difference to decisions made by financial statement users. They comment that professional sport has been prevalent in the United Kingdom and the United States for nearly 200 years, but arrived much later in Australia and New Zealand. In the United Kingdom and the United States, professional sports teams' financial accounts often incorporate HRA, in which a value for the employees is placed on the balance sheet and is amortized over a period of time, instead of expensing costs. The authors refer to the big question being whether HRA information is more useful to the decision-maker than the alternate expensing treatment, and that past research has shown that sophisticated users of financial information do make significantly different decisions with the different presentations. The outcome was tested in New Zealand in a survey questionnaire responded to by 64 members of the professional body Institute of Chartered Accountants of New Zealand. On an overall basis, the study shows that generally accountants will make the same investment decisions regardless of whether human resource information is expensed or capitalized. The authors noted, however, that their exercise only explored one type of decision-making process, and that prior studies may have been of a wider nature, thus explaining the differing result. They then suggest that if HRA is to follow the international trends emerging in intangibles reporting, capitalized human resource information may become more prevalent.

INDIA

Interest in measuring human capital has also been apparent in India. Mahalingam (2001, p. 19) notes that "Pundits of today assert that while the other forms of capital, including material, equipment, tools and technology, only represent inert potentialities, it is the human capital that converts this potential and energises the creation of wealth." This author suggests a human resource value approach based on a person's skills and the returns these skills are expected to return over the next five years, with future years discounted to arrive at the current value. Mahalingam notes that each person has a set of competencies and a value is assigned to each, with the sum total of these values making up the value of the employee and the value of all the employees making up the human capital of the organization—which together with the customer and structural capital produces the revenue. In a case study conducted in India, Patra, Khatik & Kolhe (2003) studied a profit making heavy engineering public sector company which used the Lev & Schwartz (1971) model to evaluate HRA measures. The authors examined the correlation between the total human resources and personnel expenses for their fitness and impact on production. They found that HRA valuation was important for decision-making in order to achieve the organization's objectives and improve output. Bhat (2000, p. 1) provides a definition of "HUMAN resources accounting" as depicting the human resources potential in money terms while casting the organization's financial statements. The author refers to several measurement models including the Brummet et al. model (1968a, 1968b, 1969) based on historical cost method with provisions for appropriate depreciation and replacement cost of acquiring, training and developing the entire human resources, and competitive bidding proposing the capitalizing of the additional earning potential of each human resource in the organization. The author also mentions the Jaggi & Lau (1974) model estimating the human resources worth on a human resource groups basis with the groups accounting for productivity and performance, and Hermanson's (1964, 1986) unpurchased goodwill method in which the marginal higher earning potential of human resources in comparison with similar industries is capitalized. Bhat notes that with global trade and foreign exchange transactions becoming more complex with innovations in derivatives, more uniformity in accounting practices and transparency will emerge. The authors suggest that accounting and financial management issues will soon be integrated in accounting statements facilitating more meaningful use of accounts, as opposed to history and bookkeeping

CHINA

Tang (2005) focused on a measurement of human resource cost in developing a heuristic frame addressing the link between human resource replacement cost and decision-making, in a human resource replacement cost (HRRC) system. The system measures direct and indirect costs of human resources, which is then applied to a company within the metro industry in China. The author includes a suggested measure of learning cost, cost of lost productivity, and cost of job vacancy and discusses the usefulness of the HRRC model in decision-making in such areas as employee turnover, separation indemnity, duration of labor contracts, and personnel budgets in monetary terms. Tang (p. 2) notes that an increased focus on human resource management and improved information technology has led to a saying "what you cannot measure, you cannot manage." The author adds that since the time when China espoused an open policy of reform there have been many brave attempts to seek new ways for handling organization and management. Tang (p. 14) also suggests that HRA information can aid in budgeting of human resources recruitment and development. The hard costs in human resource replacement cost are the actual investments in human resources which reflect the historical direct costs of recruiting, orientating, and training people. Combining these hard costs with human resource demand can help a company budget its personnel activities more reliably. Tang (p. 15) notes that the system of accounting for replacement cost in people is an attempt to improve the quality of information available for facilitating effective human resource management, providing information necessary for a cost/benefit analysis and decision making in areas such as employee turnover, separation indemnity, duration of labor contract and personnel budgets in monetary terms. Care should be taken to recognize that high human resource costs should not be viewed as negative and low costs as positive in that, for example higher costs could indicate higher-quality training.

Although the HRRC system developed was based on a pilot study and still requires refinement and extensions, it does represent a meaningful contribution to the practice of HRA, and an expected result is a new awareness by management of the high costs of turnover. Ng (2004, p. 26) further comments on the benefits of HRA related information and notes that measuring and managing human capital is not rocket science, but is (p. 26) "simply a defined framework to maximise the only real competitive advantage companies have in the knowledge economy—their human capital assets." Ng notes that to derive and quantify value from this human asset requires human capital analytics—an entirely new class of systems that aggregates HR data financial, customer and supplier information for exploration, analysis and presentation. According to the author, human capital analytics supports rapid decision backed by quantifiable, accurate information and defensible forecasts, and in addition helps identify essential insights that allow organizations to proactively apply strategic human capital initiatives to meet corporate objective.

PORTUGAL

Bras & Rodrigues (2008) analyzed two competing approaches to accounting for a firm's investment in staff-training activities: the accounting and labour economics approach which argues that no asset should be recognized from training activity and the human resources management approach, espoused by HRA, that advocates recognition of an asset. The authors

used document analysis and interviews in their attempt to understand the training phenomenon from the company's point of view. The paper provided a case-based empirical analysis of accounting and human capital and asset recognition arguments, and clarifies the situation in which assets should be recognized as generated by training expenditures.

GERMANY

Schmidt & Minssen (2007) explored to what extent human resource practitioners value and account for international assignments, and to relate these findings to the human resources cost accounting context. The authors drew on data from a quantitative survey among 415 German chemical companies and expert interviews with human resource managers from eight chemical companies. They found that human resource managers appreciate the positive effect of overseas assignments on personal development, but often underestimate the long-term benefits of an international assignment for the company.

CANADA

Jones (2000, p. 9) writes that "Financial reporting systems need to account for people. The author indicates that the issue of providing bottom line worth for training, wellness programs or employee satisfaction surveys remains an ongoing struggle with HR executives in Canada, and laments why one is required to make the business case for something that is intrinsically known to be important to financial importance. The author refers to the International Accounting Standards Committee (IASC) recently published standard on Intangible Assets (IAS 38) and comments on reports that investment and awareness of the importance of intangible assets have increased significantly in the last two decades. Furthermore the author notes that while the standard is expected to have no direct impact on how Canadian chartered accountancy firms report and file (unless the firm is multi-national with offices in countries required to comply with IASC standards) it does give a global definition to intangibles. Jones (p. 2) called for researchers to team up with practitioners to create the knowledge base required for the development of a whole new measurement system for value creation that would operate in parallel with the existing value realization measurement system. The author noted how the Canadian Performance Reporting Initiative Board is being established to advance knowledge in the intellectual capital management and other areas critical to performance measurement, providing a golden opportunity for HR leader to work together to ensure that people count.

GREECE

Andrikopoulos (2005) attempted to bridge the gap between traditional financial theory and intellectual capital (IC) reporting by proposing a model where organizational priorities were set as the solution to a portfolio selection problem. The solution to this problem provides priorities for organizational change. The author notes that the quantitative approach in the paper requires extensive use of data on organizational performance found in IC statements, and that when it comes to human capital IC reporting, works on results from HRA, which have been extensively applied in the academic and business communities. Andrikopoulos found that that the model helps discover corporate strengths and uses them to set organizational priorities for IC value creation

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MICROFINANCE USING INFORMATION & COMMUNICATION TECHNOLOGIES

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ABSTRACT

Microfinance is an idea that holds significant promise for changing the lives of the world's poor. Microfinance is the provision of a broad range of financial services such as deposits, loans, payment services, money transfers, insurance to poor and low-income households and their microenterprises. The NGOs and multilateral organizations have been working with both governments and financial institutions to set up almost 10,000 microfinance institutions (MFIs) to democratize financial services and thereby broaden the economic growth base. As a result, more poor people are now able to improve their incomes, save money outside the household and make loan payments. The paper discusses the technical implementation for enhancing the service in microfinance. Many technology partners are coming up with low cost solutions for microfinance sector, which can result in reduction of transaction cost. Microfinance industry will not be successful in achieving its aggressive goals of maximizing financial inclusion and delivering basic financial services down to the bottom of the population pyramid without the support of ICT. A technology based solution can ensure an expansion of the microfinance operations and long term sustainability.

KEYWORDS

Expert system, Data warehouse, Mobile Computing, Wireless Technologies.

INTRODUCTION

Microfinance involves more people than traditional banking and thus has to gather, store and analyze more data. It is very difficult to do microfinance operations and transactions manually considering the huge volume of data. There is a real need to support microfinance operations with technology to keep the operating cost as low as possible. The use of Information Communication Technology can improve efficiency and make it possible to reach services to the masses by using technology such as ATMs and Point of Sale (POS) devices. Providing microfinance services using ATM & POS is quite costly, because people usually have small amounts of money to invest and rarely document their credit histories.

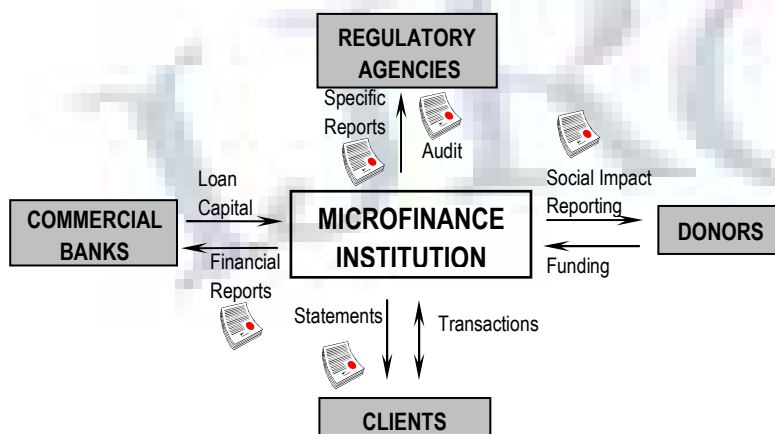
The technology transfer needs a common platform to coordinate requirements of lenders and. An improved delivery system reaches the remote areas, without adding a lot to the transaction costs by the proper utilization of technology. This technological platform maintains the borrower's requirement for credit, the credit score and other personal identification information. It acts as a merging point where the requirements of borrowers are linked to the microfinance institution / lenders. Information Technology enables operators of microfinance enterprises to use short messaging services for customer alerts. The GSMA estimate that there are 1 billion people in emerging markets around the world today, who do not have a bank account but do have a mobile phone. This represents a huge opportunity for collaborations between microenterprises and mobile operators for the harnessing the untapped consumer base. The microfinance institutions can use technology to

1. Reduce costs and improve operational efficiency.
2. Compete with other institutions in the market.
3. Attract new clients.
4. Retain existing clients.
5. Expand the geographic outreach and reach underserved areas
6. Improve the ability to report financial and operational information
7. Improve the ability to report on social performance

DATA WAREHOUSE IN MICROFINANCE

The Microfinance Institutions are expanding their operations by doing high volume of transaction in poor rural locations. The spread sheet based systems cannot provide accurate and comprehensive information needed. Data warehousing provides the architecture for microfinance management by reducing cost, improving efficiency and increase the outreach. The technologies such as Java and XML are employed to build flexibility into the data warehousing architecture. Java is used to maintain a platform neutral approach and XML is used for data transfer across many technologies, applications and platforms.

FIGURE 1: INFORMATION EXCHANGE REQUIREMENTS IN MICROFINANCE (SOURCE: JORDANE ROLLIN, GRAMEEN FOUNDATION USA)



The Data warehousing architecture links different types of stake holders like regulatory agencies, donors, clients and commercial banks and facilitates exchange of information via financial reporting. The important information requirements for microfinance institutions is the intra-institutional financial reporting, which includes loan officer/operational reports, portfolio reports, financial statements, cash flows and summary reports. The microfinance institutions often attract loan capital or grants that are used for specific purposes such as the betterment of a particular community or class of clients. It is very important for

microfinance institutions to monitor, track and communicate their client’s performance with regard to certain social indicators. In the present scenario, most of the microfinance institutions do not have a computer system to perform their operations. The commercial software vendors choose to use an easily available database system such as Excel or Access as backend tool and Visual Basic as the front end tool. Table-1 specifies the comparative study of traditional packages with Data warehouse architecture in terms of cost, data reliability, scalability, data exchange capability and design flexibility.

TABLE 1: EXISTING MANAGEMENT INFORMATION SYSTEM SOLUTIONS

	<i>Low Cost</i>	<i>Data Reliability</i>	<i>Scalability</i>	<i>Data Exchange Capability</i>	<i>Design flexibility</i>
<i>Excel / Spreadsheet</i>	●	○	○	◐	○
<i>Traditional Accounting and Portfolio Software</i>	◐	◐	◐	○	○
<i>Specialized Vendor Package</i>	◐	●	◐	○	◐
<i>Custom Made</i>	○	●	●	◐	●
<i>Data Warehouse</i>	●	●	●	●	●

The Microfinance Data warehouse is a huge collection of data; it is a repository of an institution’s data stored electronically. The Data warehouse consists of components such as data retrieval, ETL (Extract, Transform and Load) and data dictionary to convert the raw data into the standard format. The benefits of implementing the data warehouse are:

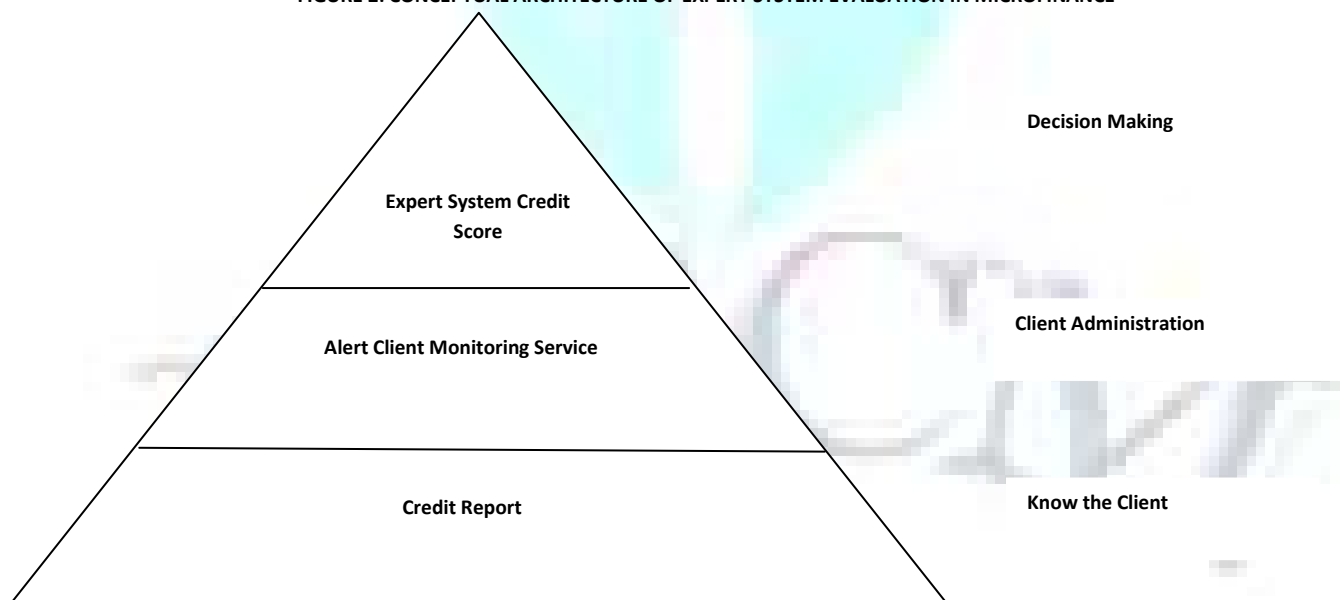
- It provides simplified reporting and analysis.
- The information stored in the data warehouse is separated from the original source data.
- Data retrieval does not slow the operating system.
- Identifying the dimension of the process (Example: time dimension-history)
- The Data warehouse architecture leads to the extension of Business Intelligence, Decision Support System and Expert System.

The commercial vendor (IBM Banking Data Warehouse) usually offers an enterprise wide view of real time information ranging from customer retention to credit risk. It is used to analyze collected data and identify opportunities such as product customization and cross selling.

EXPERT SYSTEMS IN MICROFINANCE

Expert Systems are part of a general category of computer application known as Artificial Intelligence. Expert Systems not only possess human knowledge in the form of coded tables, databases and programmed logic with the computer power available today; they are coming closer and closer to representing human systems that think. Medium to large microfinance institutions can face major problems in meeting schedules, while keeping the entire workforce in full employment and also significantly contribute to the customer. Expert System have been developed which advice the staff on a particular tasks to be completed within a given time frame.

FIGURE 2: CONCEPTUAL ARCHITECTURE OF EXPERT SYSTEM EVALUATION IN MICROFINANCE



IMPLEMENTATION OF EXPERT SYSTEM IN MICROFINANCE INSTITUTION

The Next Generation microfinance industry will reach the world’s urban and rural poor by designing a technological framework that ensures demand-side distribution, service delivery scalability and lower cost-to-serve.

- Phase 1: Know the Client
 - Who is the Client?
 - How much does the client own?
 - How has the client paid?
- Phase 2: Client Administration

- Client Alert
- Change in the credit profile of the client
- Client follow-up
- Phase 3: Decision Making
- The Client fulfills the credit policy?
- Pre approval of credit
- Recommendation on what do with my client.
- For which offer of products does the client qualify?

HOW TO TRACK THE STATUS OF CREDIT APPROVAL PROCESS IN MICROFINANCE INSTITUTIONS?

1. Incorporation of information and decision in the applications of the microfinance organizations through web services.
2. Credit ratings take into account various factors like the financial history and the current assets and liabilities.
3. Other factors considered for credit ratings are payment history, amount owned, length of the credit history, new credit and types of credit used.
4. Implementation of Expert Systems and score.
5. Preapproval of credit by SMS message

BENEFITS & CHALLENGES OF CREDIT SCORE FOR MICROLENDING

1. Reduction of costs and time of the process.
2. Supply of services according to the risk level
3. Track credit history and personal background and assess honesty and reliability of the borrowers to pay off debts?
4. Accelerate the process of sharing information. Breaking the paradigm "If I post my client's information my competitors will take them away"

MOBILE APPLICATION IN MICRO FINANCE

Microfinance institutions (MFIs) face much higher cost-of service delivery cost because of the smaller transaction values they handle and the more remote and dispersed location of the customer. To achieve the goal of branchless banking through mobile banking, the institutions need to collaborate with GSM operators. Many banks and microfinance institutions in the developing world are interested in building relationship with rural microfinance groups. They hire field agents to interact with villagers, and access lending opportunities. Banks need to find a way to provide liquidity through a network of cash-in / cash-out agents, while on the field; agents distribute loan application forms to those people interested in obtaining a loan. The loan application includes field for the client's current account number, the desired loan amount, term of loan and the loan purpose. The loan purpose is a summary of the client's reason for availability the loan (buy livestock, start a small business, pay for health bills, etc.). The next time the field agent visits the village, he transcribes the loan applications using his bank-issued mobile phone. First he captures the application ID, which loads in the application. The agent captures the barcode in the top-right to enter all of the data from the loan application. Guided by the prompts, he enters the account number, the desired loan amount, the loan term and captures an audio clip of the client declaring the intended purpose of the loan. The client listens to the audio prompts to follow along in the process. If he wants to verify whether the data has been entered correctly, he can ask the agent to focus the camera on each of the fields to display the entered value. Only after the client is satisfied the agent captures the "Submit" barcode to generate an SMS / MMS message. The message contains an XML file with the entered data, and an audio recording of the loan purpose. The client keeps a copy of the audio clip for his own records. At the bank office, the manager reviews his incoming messages and sees the new loan application. Based on the purpose of the loan, and the client's past credit history, he decides which loan should be issued within one day. The decision are automatically packaged and sent to the field agent's phone as an MMS message. By reviewing the "ACCEPTED" field on each form, both the field agent and client know which loan has been approved. The client is then required to report to the bank to collect the money. For those clients who are denied loan, the bank manager includes an audio or textual comment indicating the reason. The whole loan application process is accomplished without the field agent ever having to return to the distant bank office.

FIGURE 3: A BANK FIELD AGENT PROCESSING LOAN APPLICATION



BRINGING MOBILE MONEY CLOSER TO MICROFINANCE

Mobile Money is defined as money that can be accessed and used via the mobile phone and using the mobile network. Mobile communication is the most inclusive and pervasive service in the world, with almost 2/3rd of the world's population currently uses the cell phone for daily communication. Next generation microfinance needs to fully leverage and ride the mobile money wave and use this as the primary user interface as well as the enabling last mile infrastructure. The benefits of Mobile Money are listed below.

- Best in terms of geographic and population reach and coverage and lower user-side transaction costs.
- SMS can be combined with IVRS options to address potential literacy hurdles in the target market at the bottom of the pyramid.
- Facilitates development of microfinance Open Network Exchanges" that drive financial efficiency and allows any microfinance product originator to serve any mobile user in the country.

- Enables the building of a financial “Interconnection” ubiquity across the target customers, so that they can send or pay money to anyone in that market whom they can call or SMS on their mobile phone.

CONCLUSION

Thus the implementation of technology in microfinance can help in bridging the demand-supply gap in microfinance institutions. The technological framework provides a sustainable system that can handle high a number of users, thereby ensuring, scalability as well as sustainability. The Expert System use credit ratings for the microfinance institutions and the clients to implement better repayment rates in the system. Consumers throughout rural India are beginning to experience the social and economic benefits of mobile technology. Technological infrastructure, a solid business model and dynamic partnerships in local markets can ensure the development of microfinance in the rural market. The Future research is used to investigate the return on investment and valuable extension of recent technologies such as service oriented architecture, software as a service and integrating wireless environment.

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FUNDAMENTAL & TECHNICAL ANALYSIS OF REAL ESTATE SECTOR: AN INDIAN PERSPECTIVE

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ABSTRACT

Real Estate sector is one of the attractive businesses in the today's business scenario so it becomes important to study the prospect of real estate firm. In this report first of all factor analysis has been done to find out which all factors are responsible for change in the share prices of DLF. The variables which has been taken for analysis includes IIP, WPI, FII, crude oil, RSVD, property prices and CRR. In total 103 observations have been taken into account from June 1st 2008 to March 2009. At last two factors have been identified First factor containing IIP, WPI, Crude oil, property prices and CRR whereas second factor contains FIIs and RSVD. Next the regression equation is found out as $DLF \text{ share price} = 3.67 - 16 + 0.838 \text{ factor1} + 0.229 \text{ factor 2}$, CAGR of about 24% real estate sector future is very promising moreover the organized sector of the business is already untouched requiring more and more initiatives to be taken.

KEYWORDS

OHLC Chart, MACD, Trend Line, Stochastic oscillator

REAL ESTATE SECTOR IN INDIA

The real estate sector in India is of great importance. According to the report of the Technical Group on Estimation of Housing Shortage, an estimated shortage of 26.53 million houses during the Eleventh Five Year Plan (2007-12) provides a big investment opportunity. The Indian real estate industry is expected to touch US\$ 50 billion by 2010.

Real estate accounts for approximately five per cent of the GDP and this share is expected to increase to six per cent in the next five years. Growth has been driven primarily by the IT/ITeSector with an increase in the demand for office space, growing presence of foreign businesses in India, the global strides of Indian corporates and a rapidly increasing consumer class. The real estate sector is in its early growth stage and can be segmented into residential, commercial, retail and hospitality asset classes

Real Estate development is taking place in Residential, Retail, Office, Hotels, and Warehousing and Industrial sectors. The key drivers of each of these property types are basic fundamentals. The IT/BPO sector is expected to generate 1000Mn sqft of demand for office space over the next five years. The rising middle class and its consumer demand is driving the retail boom. The large shortage in the housing sector will continue to fuel the growth in the residential market. The real demand is not in the high end residential market but in the affordable housing segment and this will be the driver for the residential market.

Moving forward Real Estate finance will also see growth in all areas of Public and Private: Debt and Equity. In the private equity space the market is currently governed by the high net worth individuals, PE funds and closed ended funds, mutual funds. Banks and NBFC's are the only players operating in the debt market. Quasi-public agencies and mezzanine funds will be the next movers into this sector. As the market grows, the private debt operators will move towards public equity. We have already started witnessing this in the form of IPO's by developers. REITs and mutual funds will make it easier for individual investors to invest in Real Estate and further make the risk more diversifiable for the market as a whole. There is no public debt market in India.

Overall, with further growth in the sector, career opportunities are only getting better. There are many ways to participate in this growth - public equity, private equity, debt development, investment, sales, research, leasing, property services, entrepreneurial ventures, public policy, govt. agencies, planning, architecture/engineering, investment banking etc.

The main challenges in the future also offer opportunities as they require solutions in various forms. Urban planning is the single biggest challenge for our cities. It is imperative that our urban infrastructure keeps pace with our economic growth. Better roads will help bring down the supply demand gap of land in future. Good roads will help increase supply of land and bring down property prices. Land acquisition reforms also offer many challenges. Astronomical government stamp duty rates increase property transfer costs and high costs come in the way of securitized debt market and efficient mortgage markets.

FUNDAMENTAL & TECHNICAL ANALYSIS

INTRODUCTION

The objective of this segment is to find out that which are the factors that affect the share prices the most and find out regression equation for the factors which has a considerable effect on the share prices. For this daily share price has been taken for a certain period and the factors which has been taken for the analysis are Index of Industrial Production (IIP), Foreign Institutional Investors (FIIs), Rupee vs. Dollar (RSVD), Wholesale Price Index (WPI), Crude Oil and Cash Reserve Ratio.

TECHNICAL ANALYSIS

Technical analysis is based almost entirely on the analysis of price and volume. The fields which define a security's price and volume are explained below.

OPEN - This is the price of the first trade for the period (e.g., the first trade of the day). When analyzing daily data, the Open is especially important as it is the consensus price after all interested parties were able to "sleep on it."

HIGH - This is the highest price that the security traded during the period. It is the point at which there were more sellers than buyers (i.e., there are always sellers willing to sell at higher prices, but the High represents the highest price buyers were willing to pay).

LOW - This is the lowest price that the security traded during the period. It is the point at which there were more buyers than sellers (i.e., there are always buyers willing to buy at lower prices, but the Low represents the lowest price sellers were willing to accept).

CLOSE - This is the last price that the security traded during the period. Due to its availability, the Close is the most often used price for analysis. The relationship between the Open (the first price) and the Close (the last price) are considered significant by most technicians. This relationship is emphasized in candlestick charts.

VOLUME - This is the number of shares (or contracts) that were traded during the period. The relationship between prices and volume (e.g., increasing prices accompanied with increasing volume) is important.

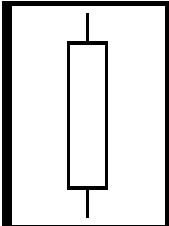
OHLC CHART - The very first tool which is being used is the OHLC (open-high-low-close) chart which is used to analyze the volumes of shares being traded at various prices for the period (See table 2.2(a) & Table 2.2 (b) OHLC Chart and trend line of DLF)

The chart depicts the black and white candlesticks. Candlesticks charts dramatically illustrate changes in underlying supply/demand lines.

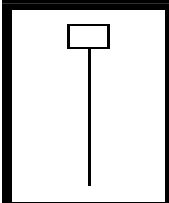
Because candlesticks display the relationship between the open, high, low, and closing prices, they cannot be displayed on securities that only have closing prices, nor were they intended to be displayed on securities that lack opening prices. If we want to display a candlestick chart on a security that does not have opening prices, it is suggested to use the previous day's closing prices in place of opening prices. This technique can create candlestick lines and patterns that are unusual, but valid.

Interpretation of candlesticks is primarily based on patterns. Some of the most popular patterns are explained as below:

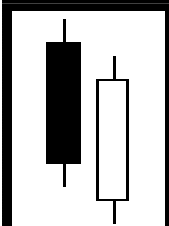
BULLISH PATTERNS



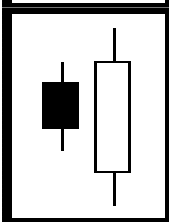
Long white (empty) line. This is a bullish line. It occurs when prices open near the low and close significantly higher near the period's high.



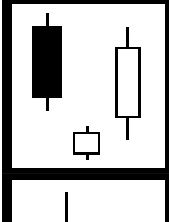
Hammer. This is a bullish line if it occurs after a significant downtrend. If the line occurs after a significant up-trend, it is called a Hanging Man. A Hammer is identified by a small real body (i.e., a small range between the open and closing prices) and a long lower shadow (i.e., the low is significantly lower than the open, high, and close). The body can be empty or filled-in.



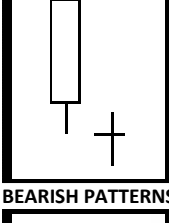
Piercing line. This is a bullish pattern and the opposite of a dark cloud cover. The first line is a long black line and the second line is a long white line. The second line opens lower than the first line's low, but it closes more than halfway above the first line's real body.



Bullish engulfing lines. This pattern is strongly bullish if it occurs after a significant downtrend (i.e., it acts as a reversal pattern). It occurs when a small bearish (filled-in) line is engulfed by a large bullish (empty) line.

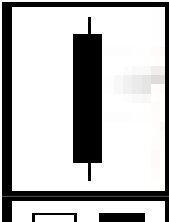


Morning star. This is a bullish pattern signifying a potential bottom. The "star" indicates a possible reversal and the bullish (empty) line confirms this. The star can be empty or filled-in

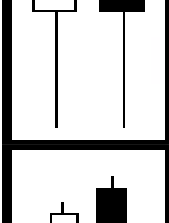


Bullish doji star. A "star" indicates a reversal and a doji indicates indecision. Thus, this pattern usually indicates a reversal following an indecisive period. You should wait for a confirmation (e.g., as in the morning star, above) before trading a doji star. The first line can be empty or filled in.

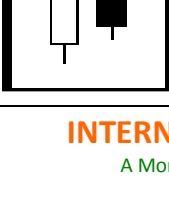
BEARISH PATTERNS



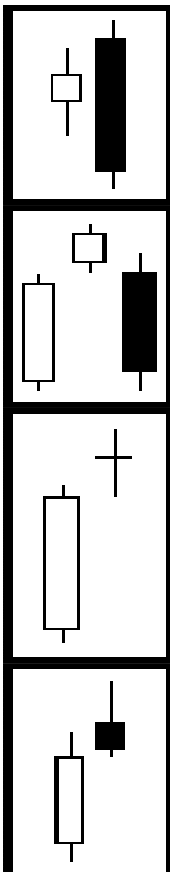
Long black (filled-in) line. This is a bearish line. It occurs when prices open near the high and close significantly lower near the period's low.



Hanging Man. These lines are bearish if they occur after a significant uptrend. If this pattern occurs after a significant downtrend, it is called a Hammer. They are identified by small real bodies (i.e., a small range between the open and closing prices) and a long lower shadow (i.e., the low was significantly lower than the open, high, and close). The bodies can be empty or filled-in.



Dark cloud cover. This is a bearish pattern. The pattern is more significant if the second line's body is below the center of the previous line's body (as illustrated).



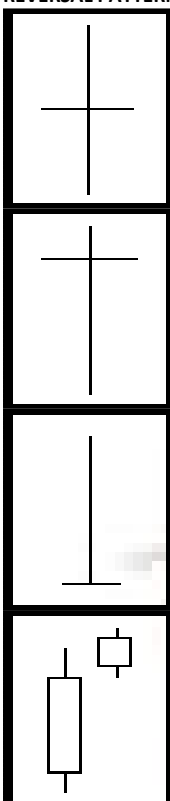
Bearish engulfing lines. This pattern is strongly bearish if it occurs after a significant up-trend (i.e., it acts as a reversal pattern). It occurs when a small bullish (empty) line is engulfed by a large bearish (filled-in) line.

Evening star. This is a bearish pattern signifying a potential top. The "star" indicates a possible reversal and the bearish (filled-in) line confirms this. The star can be empty or filled-in.

Doji star. A star indicates a reversal and a doji indicates indecision. Thus, this pattern usually indicates a reversal following an indecisive period. You should wait for a confirmation (e.g., as in the evening star illustration) before trading a doji star.

Shooting star. This pattern suggests a minor reversal when it appears after a rally. The star's body must appear near the low price and the line should have a long upper shadow

REVERSAL PATTERNS

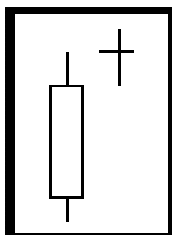


Long-legged doji. This line often signifies a turning point. It occurs when the open and close are the same, and the range between the high and low is relatively large.

Dragon-fly doji. This line also signifies a turning point. It occurs when the open and close are the same, and the low is significantly lower than the open, high, and closing prices.

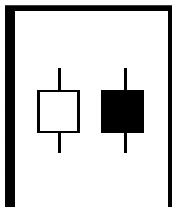
Gravestone doji. This line also signifies a turning point. It occurs when the open, close, and low are the same, and the high is significantly higher than the open, low, and closing prices.

Star. Stars indicate reversals. A star is a line with a small real body that occurs after a line with a much larger real body, where the real bodies do not overlap. The shadows may overlap.

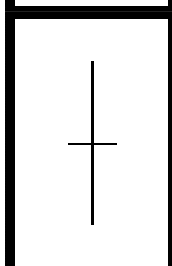


Doji star. A star indicates a reversal and a doji indicates indecision. Thus, this pattern usually indicates a reversal following an indecisive period. You should wait for a confirmation (e.g., as in the evening star illustration) before trading a doji star.

NEUTRAL PATTERNS



Spinning tops. These are neutral lines. They occur when the distance between the high and low, and the distance between the open and close, are relatively small.



Doji. This line implies indecision. The security opened and closed at the same price. These lines can appear in several different patterns. Double doji lines (two adjacent doji lines) imply that a forceful move will follow a breakout from the current indecision.

So above mentioned where some of the patterns of candlesticks which can be definitely observed in OHLC chart

SUPPORT AND RESISTANCE

Think of security prices as the result of a head-to-head battle between a bull (the buyer) and a bear (the seller). The bulls push prices higher and the bears push prices lower. The direction prices actually move reveals who is winning the battle. The bulls in race of pushing the price higher don't allow the shares of the firm to fall below certain price level which is termed as **support**. Similarly bears in race to push price further lower don't allow the price to move up below certain price level which is termed as **resistance**. (See table 2.3 Support & Resistance line)

MACD INDICATOR

An indicator is a mathematical calculation that can be applied to a security's price and/or volume fields. The result is a value that is used to anticipate future changes in prices. A moving average fits this definition of an indicator: it is a calculation that can be performed on a security's price to yield a value that can be used to anticipate future changes in prices.

The MACD is calculated by subtracting a 26-day moving average of a security's price from a 12-day moving average of its price. The result is an indicator that oscillates above and below zero.

When the MACD is above zero, it means the 12-day moving average is higher than the 26-day moving average. This is bullish as it shows that current expectations (i.e., the 12-day moving average) are more bullish than previous expectations (i.e., the 26-day average). This implies a bullish, or upward, shift in the supply/demand lines. When the MACD falls below zero, it means that the 12-day moving average is less than the 26-day moving average, implying a bearish shift in the supply/demand lines. (See table 2.4(a) & table 2.4(b) MACD indicator)

STOCHASTIC OSCILLATOR

Stochastic (sto kas'tik) - Designating a process having an infinite progression of jointly distributed random variables. The Stochastic Oscillator compares where a security's price closed relative to its price range over a given time period.

The Stochastic Oscillator is displayed as two lines. The main line is called "%K." The second line, called "%D," is a moving average of %K. The %K line is usually displayed as a solid line and the %D line is usually displayed as a dotted line.

There are several ways to interpret a Stochastic Oscillator. Three popular methods include:

1. Buy when the Oscillator (either %K or %D) falls below a specific level (e.g., 20) and then rises above that level. Sell when the Oscillator rises above a specific level (e.g., 80) and then falls below that level.
2. Buy when the %K line rises above the %D line and sell when the %K line falls below the %D line.

Calculation

The Stochastic Oscillator has four variables:

1. **%K Periods.**
This is the number of time periods used in the stochastic calculation.
2. **%K Slowing Periods.**
This value controls the internal smoothing of %K. A value of 1 is considered a fast stochastic; a value of 3 is considered a slow stochastic.
3. **%D Periods.**
This is the number of time periods used when calculating a moving average of %K. The moving average is called "%D" and is usually displayed as a dotted line on top of %K.
4. **%D Method.**
The method (i.e., Exponential, Simple, Time Series, Triangular, Variable, or Weighted) that is used to calculate %D.
5. The formula for %K is:

$$\left(\frac{\text{Today's Close} - \text{Lowest Low in \%K Periods}}{\text{Highest High in \%K Periods} - \text{Lowest Low in \%K Periods}} \right) * 100$$

In our calculation of %K and %D we have taken %K periods as 5 days with %K slowing period as 1 day and %D periods as 5 days. If you use a value greater than one, you average the highest-high and the lowest-low over the number of %K Slowing Periods before performing the division. A moving average of %K is then calculated using the number of time periods specified in the %D Periods. This moving average is called %D.

The Stochastic Oscillator always ranges between 0% and 100%. A reading of 0% shows that the security's close was the lowest price that the security has traded during the preceding x-time periods. A reading of 100% shows that the security's close was the highest price that the security has traded during the preceding x-time periods.

LEADING AND LAGGING INDICATORS

Another class of indicators are "leading" indicators. These indicators help you profit by predicting what prices will do next. Leading indicators provide greater rewards at the expense of increased risk. They perform best in sideways, "trading" markets.

Moving averages and the MACD are examples of trend following, or "lagging," indicators. These indicators are superb when prices move in relatively long trends. They don't warn you of upcoming changes in prices, they simply tell you what prices are doing (i.e., rising or falling) so that you can invest accordingly. Trend following indicators have you buy and sell late and, in exchange for missing the early opportunities, they greatly reduce your risk by keeping you on the right side of the market. In the above figure I have shown the overbought and oversold by the arrows. Leading indicators typically work by measuring how "overbought" or "oversold" a security is. This is done with the assumption that a security that is "oversold" will bounce back (See table 2.5 (a) stochastic oscillator and table 2.5 (b & c) with leading & lagging indicators against closing price of the share in reference i.e. DLF)

LITERATURE REVIEW

A number of empirical studies (e.g. Quan, Daniel C and Sheridan Titman, 1998; Eichholtz, Piet, Hartzell, David J., 1996"; Barry, Christopher-B., Mauricio Roderiguez and Joseph B.Lipscomb , 1996,) has already been done to find out the relationship between the Real Estate Prices and Stock Prices, Property Shares, Appraisals and the Stock Market and also the factors affecting the share & real estate prices in any country which mainly are IIP, FII, foreign exchange rate, WPI, CRR etc.

Many authors have tested substantial amount of the correlation across world property markets to the effects of changes in IIP, suggesting that real estate is a bet on fundamental economic variables which are correlated across countries. Relationship between changes in IIP and international property returns suggests that the cross-border correlations of real estate are due in part to common exposure to fluctuations in the global economy, as measured by an equal-weighted index of international IIP changes. Real estate is fundamentally local, demand for space apparently responds to contemporaneous changes in the global economy.

Also it has been argued that commercial real estate offers diversification benefits to institutional investors because of its low correlation with commonly used stock price indexes. The low correlation between real estate and stock price indexes is somewhat surprising, given that both are affected by the level of economic activity and interest rates. However, other factors can reduce the correlation between the two time series. Real estate will indeed provide substantial diversification benefits for pension funds and other institutions if the low correlations between real estate and stock price indexes arise because the values of these capital assets react very differently to economic factors.

Also authors have tried to find the relationship between common stock and appraisal-based returns which property share returns exhibit. Property share returns also predict appraisal-based indices. Property returns as calculated on the basis of valuations consistently show serial correlation where returns or simply price movements in one period are correlated with returns in previous periods.

METODOLOGIES

FOREIGN INSTITUTIONAL INVESTORS

INDEX OF INDUSTRIAL PRODUCTION

Index of industrial production is an abstract number, the magnitude of which symbolizes the status of production in the industrial sector for a given period of time as compared to the reference period of time. In the case of India the base year has been fixed at 1993-94 hence the same would be equivalent to 100 points.

METHOD OF CALCULATION

The index is computed using the weighted arithmetic mean of the quantity relatives with the weights being allotted to the various items in proportion to the values added by the manufacturer in the base year by using **laspeyre's** formula:

$$I = \frac{\sum (W_i R_i)}{\sum W_i}$$

Where I is the Index,
R_i is the production relative of the Ith term for the month
W_i is the weight allotted to it.

It is the bench mark for depicting the growth of the Indian economy vis-à-vis manufacturing, mining and electricity sector industries. Which measures the health of the macroeconomic by giving an indication regarding which section of the Indian industry has performed well?

Strong IIP numbers acts as a catalyst for upward movement of market whereas if they are not very exciting then it acts as a hurdle for market.

FOREIGN INSTITUTIONAL INVESTORS

FII's is to denote an investor – mostly of the form of an institution or entity, which invest money in the financial market of a country different from the one where is the institution or the entity was originally incorporated.

It is frequently referred as hot money for the reason it can leave the country at the same speed at which it comes. The Indian Stock market is sometimes considered as a gamble of FIIs as their movement many a times decides the movement of Sensex. Thus this variable has been taken for study to know its impact on the Sensex.

EXCHANGE RATE

The exchange rate is the price at which the currency of one country can be converted to the currency of another. Here the rupee dollar exchange rate has been taken for this study as fluctuation in exchange rates affects the profitability of companies and Sensex. The appreciation in rupee impacts the export oriented sectors negatively whereas an appreciation act as trigger for them.

WHOLESALE PRICE INDEX

A Wholesale Price Index (WPI) is the price of a representative basket of wholesale goods. The items included in WPI are fertilizers, minerals, industrial raw materials and semi-finished goods, machinery and equipment, fuel, light and power.

It is the only general index capturing the price movements in a comprehensive way.

CRUDE OIL

Crude oil finds its application almost in all of the industries and economy as a whole. So the movement in its price is obvious to create an effect on the sensex. When crude prices moved, the rest of the financial markets reacted. A jump in crude oil prices meant a nasty day for the stock markets. And a drop in crude almost invariably brought a relief rally in stocks. Conventional wisdom explained this phenomenon as an economic one. Since our economy is oil-based, more expensive oil means a more expensive cost basis for almost everything else. (The economy is oil-based, in that oil and natural gas are the energy sources for most processes, including transportation and electricity. Petroleum is a raw material for many chemical products as well.)An equally plausible explanation (especially for short-term swings) is that the stock market's reactions to oil price movements are fear-based. Increasing oil prices - especially beyond historical ranges could signal structural changes in the international economic landscape. This uncertainty caused markets to worry about every additional move up in oil prices, and breathe a sigh of relief with every drop.

CASH RESERVE RATIO

It is the amount that every bank is required to keep with the central bank i.e. RBI. It is the percentage of the total reserves with the bank that the bank is required to keep with RBI.

DATA

ANALYSIS OF THE DATA

TIME PERIOD OF DATA

The data has been collected for a period starting from June 2008 to March 2009 on daily basis. The independent variables for this include Index of Industrial Production (IIP), Prime Lending Rates (PLR), Wholesale Price Index, Foreign Institutional Investors, and Currency Fluctuations, Crude Oil prices. The total number of observations for each of these variables includes 103(days).

DATA ANALYSIS

The descriptive statics like Sample size, mean, minimum, maximum, standard deviation, variance, range, etc has been found for the data sets. The details of the descriptive statistics have been given below.

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std.	Skewness	
		Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
DLFSP	103	409.00	554.00	963.00	733.2524	140.56509	.248	.238
IIPR	103	66.20	280.50	346.70	315.4981	23.52836	-.214	.238
FIIS	103	258.00	571.00	829.00	693.1359	70.11714	.084	.238
MFS	103	1524.70	310.80	1835.50	739.6466	346.40712	.939	.238
RSVSD	103	3.00	37.00	40.00	38.6602	.86945	-.005	.238
WPIS	103	10.60	215.90	226.50	219.1558	2.79434	1.292	.238
PROPERTY	103	330.00	3840.00	4170.00	4024.3689	134.86689	-.366	.238
CRUDEOIL	103	15.10	87.80	102.90	96.7379	4.86641	-.477	.238
CRRS	103	.50	6.75	7.25	7.0121	.10721	.286	.238
Valid N (listwise)	103							

FACTOR ANALYSIS

In this section factor analysis will be used and factors will be found out which affects the DLF's share prices the most.

Correlation Matrix

	IIP	FII	RS V/S D	WPI	PROPERTY PRICE	CRUDE	CRR
Correlatio IIP	1.000	.115	.326	.857	.957	.954	.602
FII	.115	1.000	.128	.086	.091	.103	-.004
RS V/S D	.326	.128	1.000	.363	.340	.233	.176
WPI	.857	.086	.363	1.000	.780	.811	.790
PROPERTY PRICE	.957	.091	.340	.780	1.000	.935	.515
CRUDE	.954	.103	.233	.811	.935	1.000	.598
CRR	.602	-.004	.176	.790	.515	.598	1.000

The above table shows what correlation does each factor has with the other factors whether it is highly correlated or is not correlated or whether there is positive or negative correlation. From the above table we can conclude that IIP and Property Price are highly positively correlated whereas CRR and FII are negatively low correlated and have almost no correlation.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.806
Bartlett's Test of Sphericity	Approx. Chi-Square	769.936
	df	21
	Sig.	.000

KMO and Bartlett's Test is utilized to see whether factor analysis can be applied to the factors in the question or not. It also shows to what extent factors will be formed effectively. For the factor analysis to be used the value of Bartlett should be greater than .5 and the significance level should be < .05. from the above table it is clear that KMO as well as Bartlett's values are well above 0.5 and significance level is .000. so factor analysis will be done.

Communalities

	Initial	Extraction
IIP	1.000	.936
FII	1.000	.773
RS V/S D	1.000	.400
WPI	1.000	.871
PROPERTY PRICE	1.000	.868
CRUDE	1.000	.893
CRR	1.000	.604

Extraction Method: Principal Component Analysis.

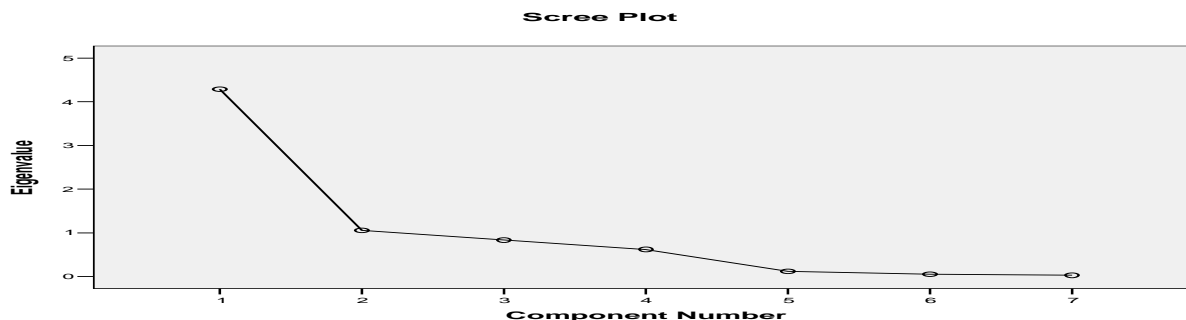
Communalities indicate the amount of variance in each variable that is accounted for. Initial communalities are estimates of the variance in each variable accounted for by all components or factors. For principal components analysis, this is always equal to 1.0 (for correlation analyses) or the variance of the variable (for covariance analyses). For other extraction methods, these values are the proportion (for correlation analyses) or the amount (for covariance analyses) of variance accounted for in each variable by the rest of the variables. Extraction communalities are estimates of the variance in each variable accounted for by the factors (or components) in the factor solution. Small values indicate variables that do not fit well with the factor solution, and should possibly be dropped from the analysis. From the above table it is clear that none of the variable except exchange rate have lower value. Exchange rates too has rate which can be taken for consideration so none of the variable is eliminated.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.288	61.263	61.263	4.288	61.263	61.263	4.127	58.951	58.951
2	1.057	15.103	76.366	1.057	15.103	76.366	1.219	17.415	76.366
3	.835	11.922	88.288						
4	.620	8.863	97.151						
5	.119	1.693	98.844						
6	.053	.753	99.597						
7	.028	.403	100.000						

Extraction Method: Principal Component Analysis.

This table gives eigenvalues, variance explained, and cumulative variance explained for your factor solution. The first panel gives values based on initial eigenvalues. For the initial solution, there are as many components or factors as there are variables. The "Total" column gives the amount of variance in the observed variables accounted for by each component or factor. The "% of Variance" column gives the percent of variance accounted for by each specific factor or component, relative to the total variance in all the variables. The "Cumulative %" column gives the percent of variance accounted for by all factors or components up to and including the current one. The Extraction Sums of Squared Loadings group gives information regarding the extracted factors or components. For principal components extraction, these values will be the same as those reported under Initial Eigenvalues results of factor rotation can be seen in the "Rotation Sums of Squared Loadings" group. The table above shown that 76% of variance is explained in component two only.



Scree plot shows no of factors that are required to be formed. The value above or number of points above till the plot is >1 determines no. of factors. In the above case the number of factors is 2.

Rotated Component Matrix ^a

	Component	
	1	2
IIP	.946	.203
CRUDE	.933	.148
WPI	.921	.150
PROPERTY PRICE	.908	.207
CRR	.774	-.068
FII	-.070	.877
RS V/S D	.288	.564

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

This table (called the Pattern Matrix for oblique rotations) reports the factor loadings for each variable on the components or factors after rotation. Variables under each component extracted are observed and variables that are required to be grouped under factors are identified. From the above table it is clear that IIP, crude, property price, WPI and CRR has been clubbed under one factor whereas FII and RSVD has been grouped as second factor because they carried maximum value under second component.

Correlations

		DLF SHARE PRICE	Zscore: REGR factor score 1 for analysis 1	Zscore: REGR factor score 2 for analysis 1
Pearson Correlation	DLF SHARE PRICE	1.000	.838	.229
	Zscore: REGR factor score 1 for analysis 1	.838	1.000	.000
	Zscore: REGR factor score 2 for analysis 1	.229	.000	1.000
Sig. (1-tailed)	DLF SHARE PRICE	.	.000	.010
	Zscore: REGR factor score 1 for analysis 1	.000	.	.500
	Zscore: REGR factor score 2 for analysis 1	.010	.500	.
N	DLF SHARE PRICE	103	103	103
	Zscore: REGR factor score 1 for analysis 1	103	103	103
	Zscore: REGR factor score 2 for analysis 1	103	103	103

The correlations table displays Pearson correlation coefficients, significance values, and the number of cases with non-missing values. Pearson correlation coefficients assume the data are normally distributed. The above table shows that there is no correlation among the two factors formed. The significance level should not be greater than 0.05 and in the above case it is 0.5 which is considered good.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.869 ^a	.755	.750	.49984491	.755	154.127	2	100	.000	.466

a. Predictors: (Constant), Zscore: REGR factor score 2 for analysis 1, Zscore: REGR factor score 1 for analysis 1

b. Dependent Variable: DLF SHARE PRICE

This table displays R, R squared, adjusted R squared, and the standard error. R, the multiple correlation coefficient, is the correlation between the observed and predicted values of the dependent variable. Seeing the R square we can say that 75.5 times out of 100 model will give right results. As the data has been taken from sample R square is used and if the data would have been taken from population than Adjusted R square would have been taken.

ANOVA ^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	77.016	2	38.508	154.127	.000 ^a
	Residual	24.984	100	.250		
	Total	102.000	102			

a. Predictors: (Constant), Zscore: REGR factor score 2 for analysis 1, Zscore: REGR factor score 1 for analysis 1

b. Dependent Variable: DLF SHARE PRICE

This table summarizes the results of an analysis of variance. Here the regression sum of squares should be greater than residual sum of squares and significance level should be <0.05. Both the conditions are satisfied in the above table.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	3.67E-016	.049		.000	1.000	-.098	.098						
	Zscore: REGR factor score 1 for analysis 1	.838	.049	.838	16.938	.000	.740	.936	.838	.861	.838	1.000	1.000	
	Zscore: REGR factor score 2 for analysis 1	.229	.049	.229	4.622	.000	.131	.327	.229	.420	.229	1.000	1.000	

a. Dependent Variable: DLF SHARE PRICE

The unstandardized coefficients are the coefficients of the estimated regression model. The VIF should be lesser than 10 so that it proves that there is no problem of multicollinearity. The value of t-stat should be >2 and sig.<0.05. All the conditions are satisfied in the above table.

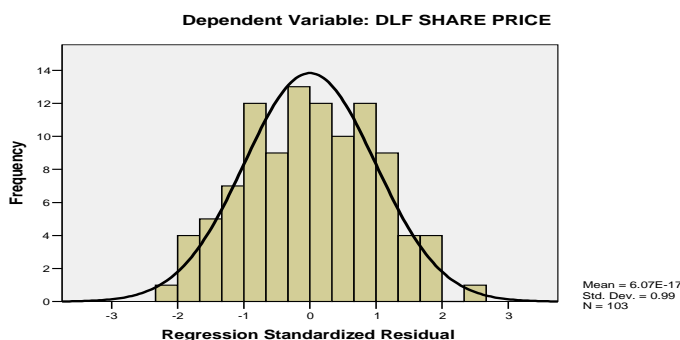
Collinearity Diagnostics ^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Zscore: REGR factor score 1 for analysis 1	Zscore: REGR factor score 2 for analysis 1
1	1	1.000	1.000	.63	.37	.00
	2	1.000	1.000	.00	.00	1.00
	3	1.000	1.000	.37	.63	.00

a. Dependent Variable: DLF SHARE PRICE

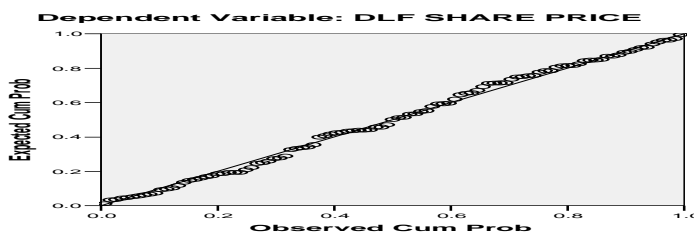
In the collinearity diagnostic table the condition index <15 if the index is greater than 15 than there is some problem with the sample taken. In the above table there is no problem.

Histogram



All the histograms are under the normal curve which shows that the data is normal.

Normal P-P Plot of Regression Standardized Residual



Seeing the P-P plot we can say there is no problem with the data and the observed and expected values are aligned line by line.

REGRESSION ON BASIS OF FACTOR

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	% Confidence Interval for		Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1 (Constant)	.67E-016	.049		.000	1.000	-.098	.098						
Zscore: REGR fac score 1 for analys	.838	.049	.838	16.938	.000	.740	.936	.838	.861	.838	1.000	1.000	
Zscore: REGR fac score 2 for analys	.229	.049	.229	4.622	.000	.131	.327	.229	.420	.229	1.000	1.000	

a. Dependent Variable: DLF SHARE PRICE

Based on the factors we have regression equation as:

$$Y = 3.67 E - 16 + 0.838 F1 + 0.229 F2$$

Where,

Y= DLF share close prices

F1= factor 1 (IIP, crude, WPI, CRR, property prices)

F2= Factor 2 (FII and RSVD)

The above equation says that if there is 1% change in factor one DLF share price will change by 0.84% and if 1% change in factor2 than there will be change of 0.23% in DLF share price.

CONCLUSIONS

Various studies has already been done to find out the relationship between the Real Estate Prices and Stock Prices, Property Shares, Appraisals and the Stock Market and also the factors affecting the share & real estate prices in any country which mainly are IIP, FII, foreign exchange rate, WPI, CRR etc. Conclusion is that at CAGR of about 24% real estate sector future is very promising moreover the organized sector of the business is already untouched requiring more and more initiatives to be taken.

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CHARTS

TABLE 2.2 (A) OHLC CHART OF DLF

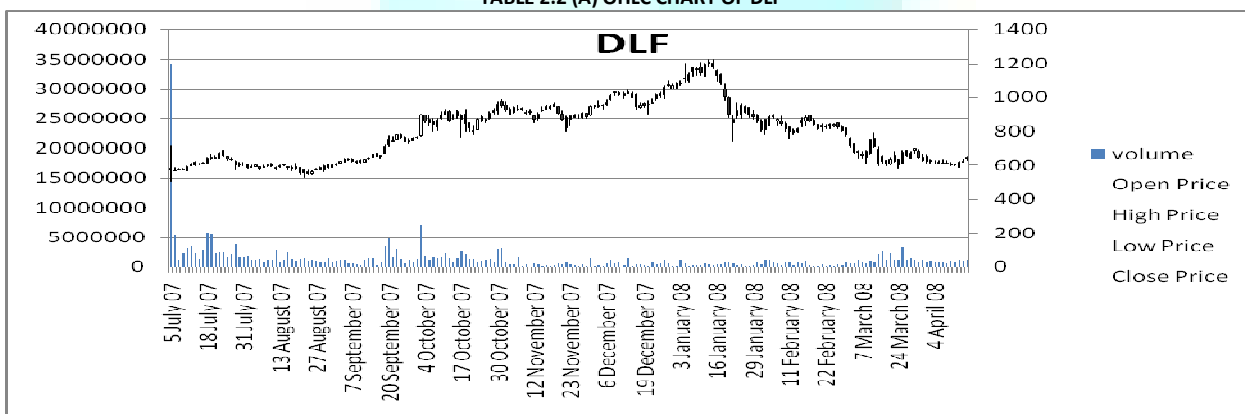


TABLE 2.2(B) TREND LINE OF DLF

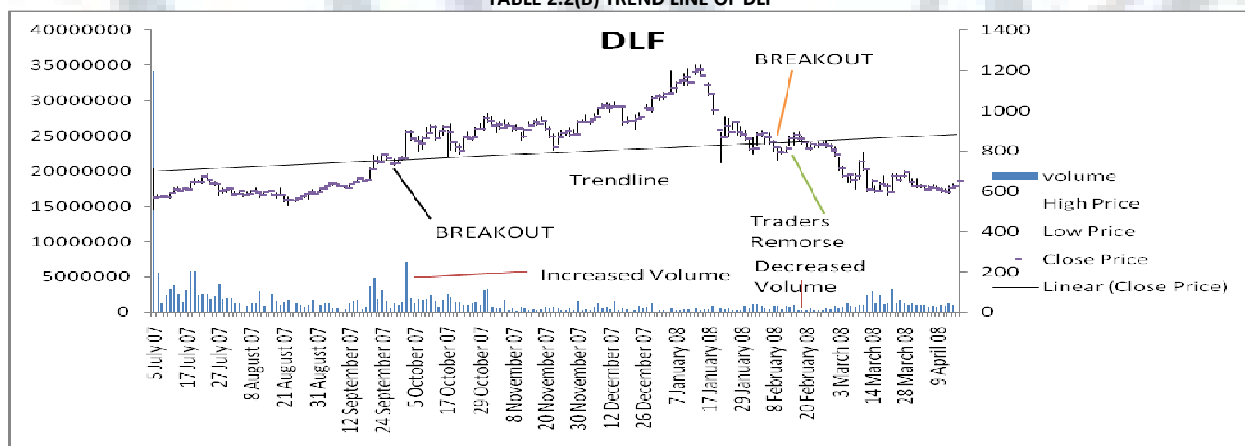


TABLE 2.3 SUPPORT & RESISTANCE LINE

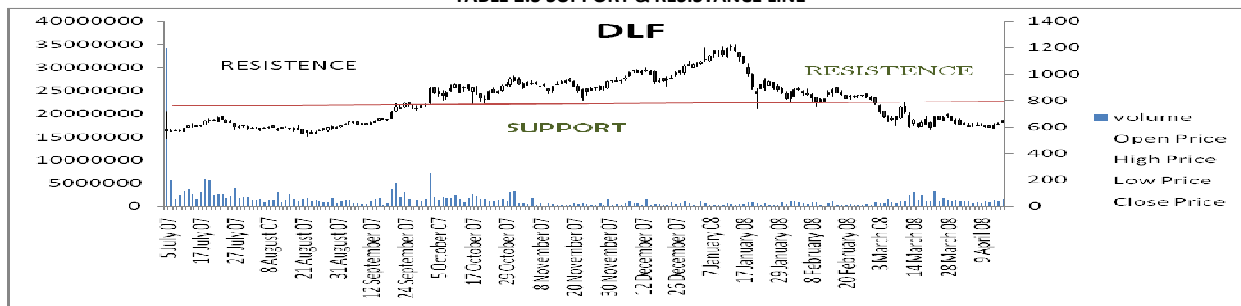


TABLE 2.4(A) MACD INDICATOR OF DLF

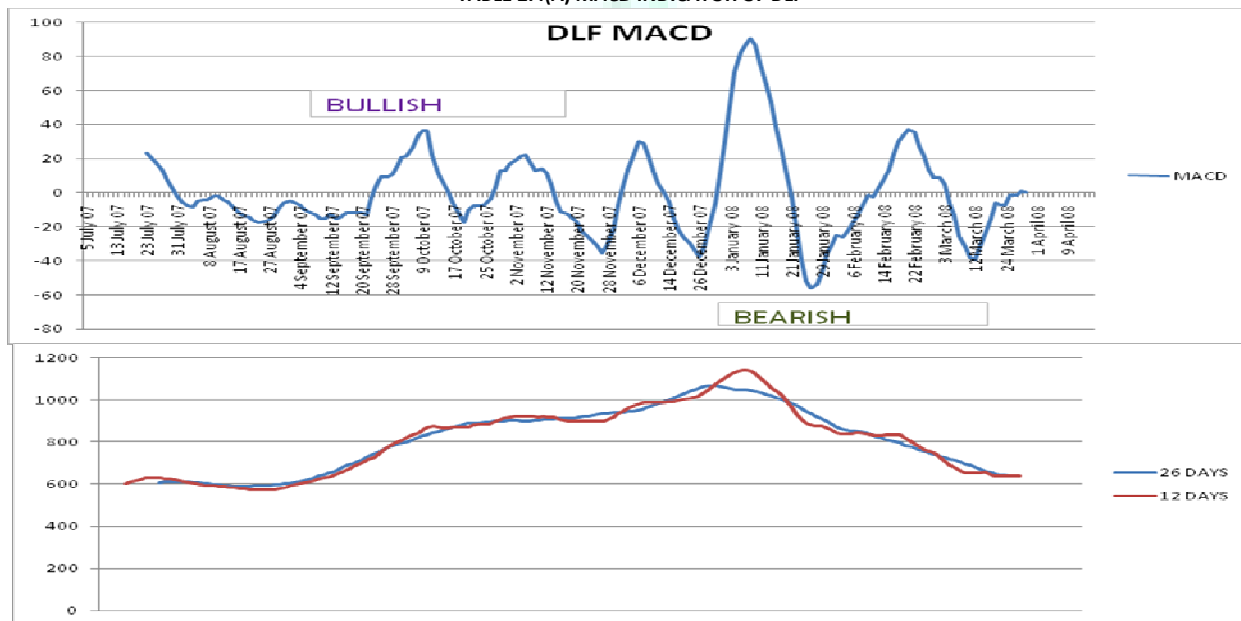


TABLE 2.4 (B) MACD INDICATOR OF DLF

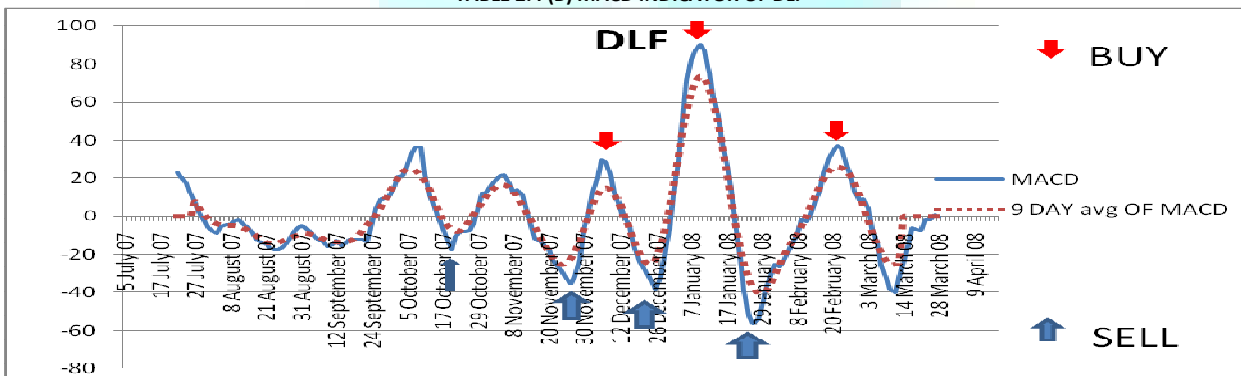


TABLE 2.5 (A) STOCHASTIC OSSILLATOR

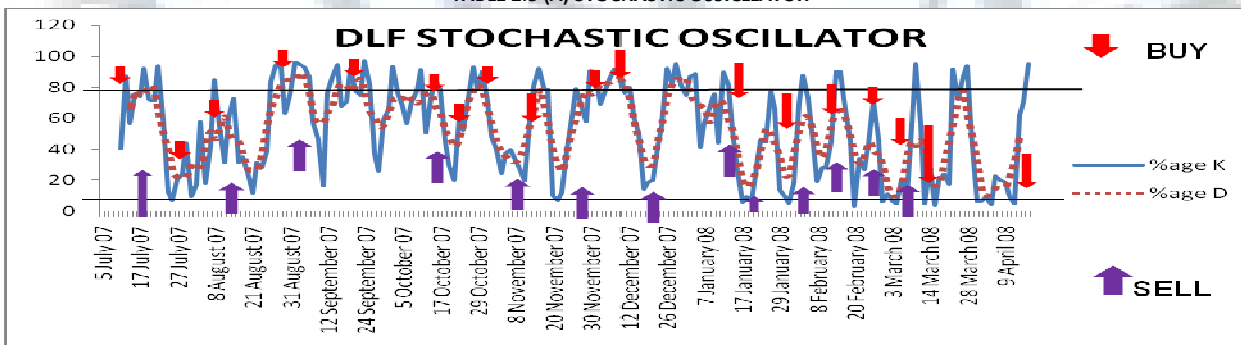
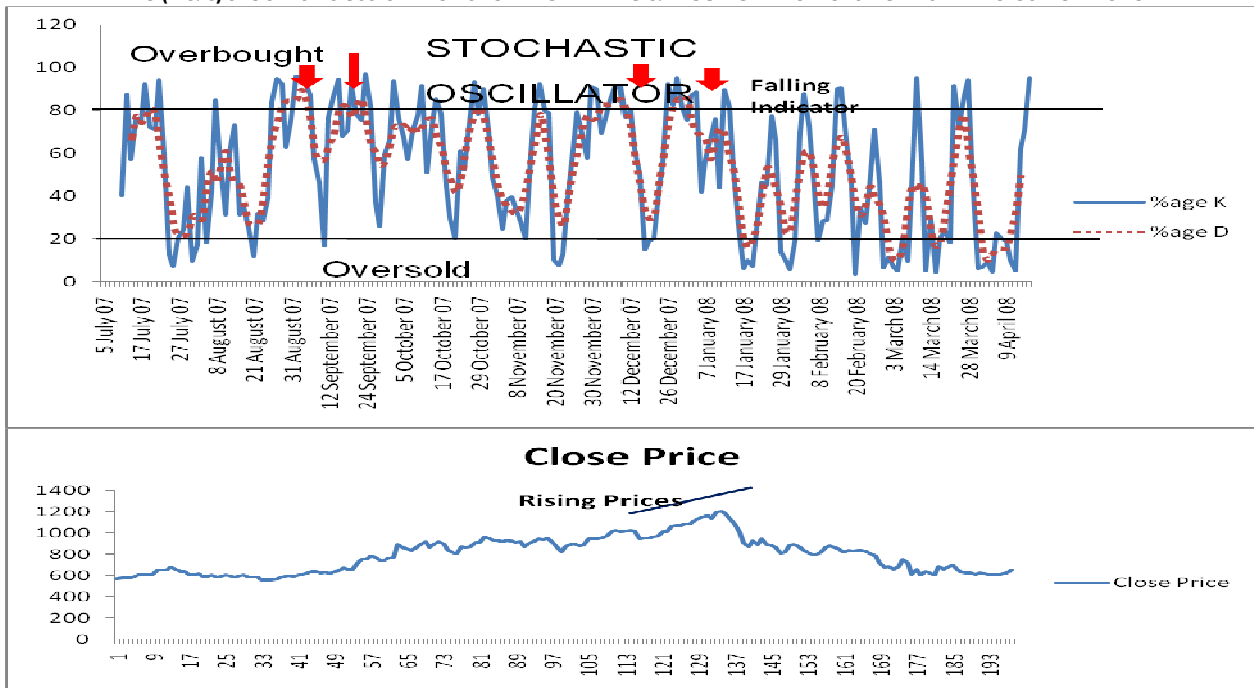


TABLE 2.5 (B & C) STOCHASTIC OSSICLATOR SHOWING LEADING & LAGGING INDICATORS AGAINST THE CLOSING PRICE OF DLF



REQUEST FOR FEEDBACK

Esteemed & Most Respected Reader,

At the very outset, International Journal of Research in Commerce and Management (IJRCM) appreciates your efforts in showing interest in our present issue under your kind perusal.

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If your good-self have any queries please feel free to contact us on our E-mail **infoijrcm@gmail.com**.

Hoping an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-

Co-ordinator